

出國報告（出國類別：國際會議）

## 2017 年戴奧辛研討會報告

服務機關：行政院環境保護署

姓名職稱：謝知行特約助理環境技術師

派赴國家：加拿大

出國期間：106 年 8 月 19 日至 8 月 27 日

報告日期：106 年 11 月 27 日

## 摘要

戴奧辛研討會自 1980 年首次在羅馬舉辦，至今為第 37 屆。今年係於加拿大溫哥華舉行，研討會期程為 106 年 8 月 19 日至 8 月 25 日，共計 6 日，本屆研討會研討議題包含戴奧辛、多氯聯苯(PCBs)、全氟烷基物質(PFAS)等持久性有機污染物(POPs)之分析技術、監測與採樣方法、風險評估及風險管理、流行病學、環境調查及世界各地環境現況等議題。本次研討會議舉行，每日均有邀請國外相關領域的著名學者，針對斯德哥爾摩公約以來的環境變化、戴奧辛對健康危害的機制、POPs 的環境法醫學等議題進行近年的發展趨勢與演講。各國研究學者並分別於不同場地，舉行口頭論文報告及壁報論文展示 2 種，其中口頭論文報告共計分為 63 類主題，10 場次的壁報論文分享會，共計 630 員各國相關領域的人餐與本次研討會議。

國外學者演講內容及各國學者發表論文內容，除傳統的戴奧辛外，其他新興污染物（PFOS、PHAs 等）之研究也不在少數，顯示這類主題之發展，為國際焦點，我國已有推動固定污染源戴奧辛管制工作，已將所有固定污染源排放戴奧辛均納入管制，與其他國家相比，在戴奧辛管制屬腳步快速且嚴格者，惟對於其他 POPs 物種亦應逐漸進行研究，俾與國際接軌。

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  - 2. Dioxin and the AHR: The Beginnings and no end in site
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  - 5. Contamination and human exposure to micropollutants including dioxin-related compounds in informal recycling sites for e-waste and end-of-life vehicles
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(2006-2016): Spatial, Temporal Variation and Emission Sources  
Apportionment via Positive Matrix Factorization

11. Characteristics of ambient PCDD/Fs measured in a tropical city during rainy season
12. Composition of  $PM_{2.5}$  and Variation of Atmospheric PCDD/Fs in Northern Taiwan during Winter Monsoon and Local Pollution Events in 2015-2016

# 第 1 章 目的

戴奧辛為多種具有兩個苯環的含氯化合物之異構物通稱，在環境中性質穩定、不易分解且具致癌性；為脂溶性且不溶於水，會經由食物鏈累積而危害到人體，被稱為世紀之毒，故被列為有害空氣污染物。經各國學者長期研究發現，該物質主要是經由工業製程排放至大氣，再沈降至土壤影響植物，並經由食物鏈而對人體造成危害，需優先管制。

為維護民眾健康、提供優質生活品質，世界各國對戴奧辛等有害物質均加以立法排放管制。我國對該等物質排放管制策略主要以：排放標準研訂、排放清冊建置、環境監測調查、加強稽查管制等四大主軸為架構，各項管制策略間彼此相互關聯、環環相扣。

我國對戴奧辛排放管制肇始於大型垃圾焚化爐，於民國 86 年發布採用世界上最嚴格的排放限值，讓新設的大型焚化爐在設計時即將降低戴奧辛排放納入考量，並促使各焚化爐採用高規格的污染防制設備，以有效控制戴奧辛排放。爾後陸續研訂中小型焚化爐戴奧辛排放管制標準後，逐步展開系統性的戴奧辛排放管制工作。參照各國排放清冊顯示，焚化爐為主要戴奧辛排放源，為了解是否有其他主要排放來源，環保署首先進行各業別排放檢測、解析排放現況，透過排放清冊建立、掌握優先管制對象。對主要排放源，透過國外排放標準蒐集、國內排放現況調查、控制技術分析及健康風險評估後，擬定管制及排放標準。歷經多年努力，逐步將所有主要戴奧辛固定污染源（大型垃圾焚化爐、中小型焚化爐、電弧爐、燒結爐、鋼鐵業集塵灰高溫冶煉設施）及一般固定污染源全數納入管制。

後續更透過加強排放稽查及定期檢測申報制度，督促排放源落實戴奧辛排放

減量工作。以民國 91 年為基準年，至民國 104 年我國戴奧辛排放量削減率已超過 84%，對於降低國內戴奧辛危害風險，有相當大的助益。並透過歷年的環境空氣戴奧辛監測，瞭解管制成效，統計歷年一般空品站環境空氣戴奧辛平均濃度介於 0.029 pg I-TEQ/m<sup>3</sup> 至 0.051 pg I-TEQ/m<sup>3</sup>。環保署除一般空品站外，另針對交通測站、排放源集中區等排放源附近進行監測，了解排放源對附近區域的影響，並尋找主要污染來源，進一步加強管制。

戴奧辛年會為國際間研究戴奧辛相關領域的盛會，從 1983 年開始至今，已進行 37 屆，近年除了戴奧辛外，其他持久性有機污染物(POPs)之相關研究也納入本研討會的領域內，涵蓋的類別達 63 種類別，領域從政策、環境分析、土壤調查、海洋生態、毒理、檢測技術等等，面向十分廣泛。今年透過參與溫哥華戴奧辛年會，取得國際間戴奧辛相關的最新研究方向，作為往後環保署管制的參考。

## 第 2 章 過程

本次出國期程：106 年 8 月 19 日至 8 月 27 日，共 9 日，主要行程內容為參加研討會，研討會行程說明如下：

106 年 8 月 19 日啟程，出發至溫哥華。

106 年 8 月 20-25 日參加研討會會議，共計 6 日，本屆研討會研討議題包含戴奧辛、PCBs、PFAS(Perfluoroalkyl Substances，全氟烷基物質)等持久性有機物之分析技術、監測與採樣方法、風險評估及風險管理、流行病學、環境調查及世界各地環境現況等議題。

**DI**OXIN 2017  
Vancouver, Canada  
August 20 - 25, 2017  
[www.dioxin2017.org](http://www.dioxin2017.org)

Home  
Committees  
Program  
Abstracts  
Student Activities and Awards  
Registration  
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### Welcome

On behalf of the Organizing Committee, Scientific Committee, and International Advisory Board (IAB) it is with great pleasure that we welcome you to Vancouver for the 37th International Symposium on Halogenated Persistent Organic Pollutants (POPs) - DIOXIN 2017.

The year 2017 marks the 37th anniversary of the Dioxin Symposia. In 1980, Otto Hutzinger organized the first symposium in Rome, Italy. Since then, annual symposia (except 1983) have been held in cities around the world. Over the past 37 years, there have been major advances in the analytical determination, and the understanding of the transport, fate and toxic behaviour of these compounds. The year 2017 also marks the 150th anniversary of Canada. We will have numerous activities and celebrations showcasing Vancouver and Canada ([click for full message](#)).

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**HOW TO GET TO THE SHERATON WALL CENTRE**

Taking the SkyTrain from Vancouver International Airport to the Sheraton Wall Centre hotel:

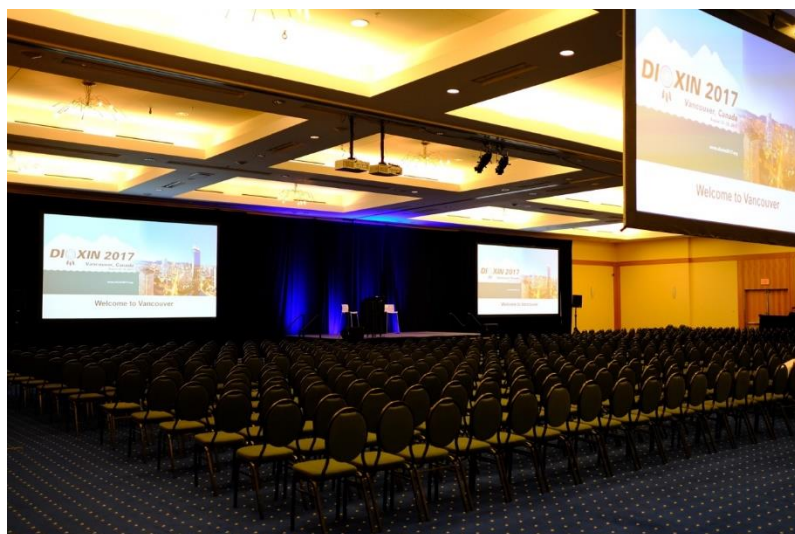
- Take the Canada Line to Vancouver City Centre.
- Walk south along Granville to Nelson Street and turn right.
- Follow Nelson Street to Burrard Street and the Wall Centre.

研討會官方網頁



研討會場地外觀(Sheraton Wall Centre )





研討會場地(上到下，指示牌、報到處、演講廳)



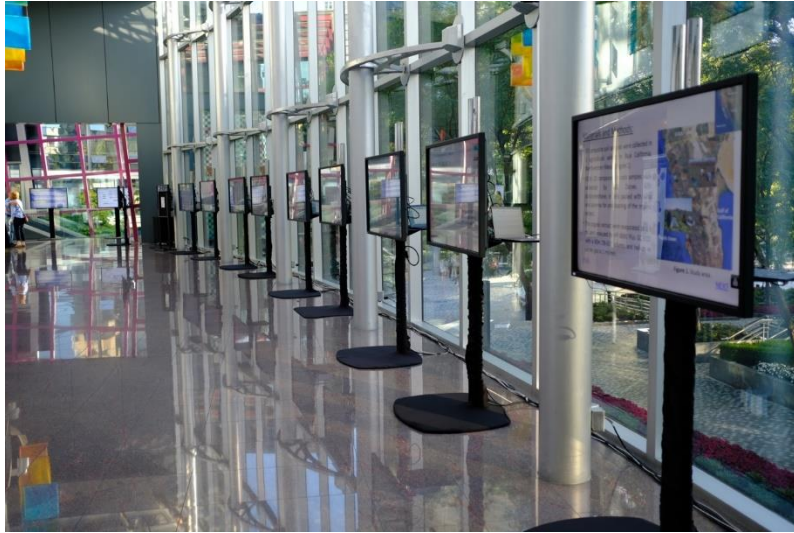
專題演講



專題演講



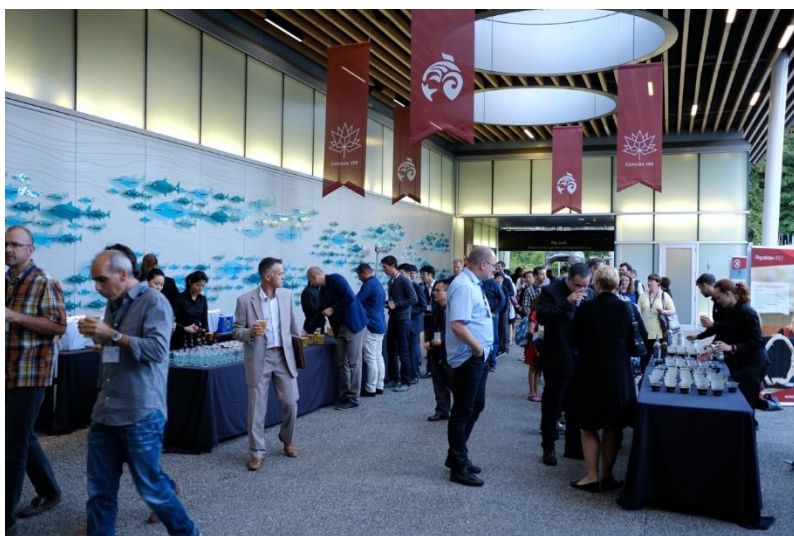
專題演講



海報區



海報區



研討會招待會

研討會議程

Dioxin 2017 Preliminary Program						
Day/ Time	August 20 Sunday	August 21 Monday	August 22 Tuesday	August 23 Wednesday	August 24 Thursday	August 25 Friday
8:30		<b>Plenary II</b>	<b>Plenary III</b>	<b>Plenary IV</b>	<b>Plenary V</b>	<b>Plenary VI</b>
8:45						
9:00						
9:15						
9:30						
9:45	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
10:00	<b>Registration</b>	Oral Sessions Concurrent	Oral Sessions Concurrent	Oral Sessions Concurrent	Oral Sessions Concurrent	Symposium Highlights by Students
10:15						
10:30						
10:45						
11:00						
11:15						
11:30		Student Awards				
11:45		Dioxin 2018				
12:00		Lunch & Exhibitions	Lunch & Exhibitions	<b>Optional Tours</b>	Lunch & Exhibitions	
12:15						
12:30						
12:45		Concurrent Oral Sessions	Concurrent Oral Sessions		Concurrent Oral Sessions	
13:00						
13:15						
13:30						
13:45						
14:00						
14:20	Poster II	Poster V	Poster IX			
14:30	Coffee Break	Coffee Break	Coffee Break			
14:50	Concurrent Oral Sessions	Concurrent Oral Sessions	Concurrent Oral Sessions		Concurrent Oral Sessions	
15:05						
15:15						
15:35						
15:45						
16:00						
16:25	Poster III	Poster VI				
16:30						
16:45						
17:00	<b>Opening Ceremony</b>	Poster Social	Poster Social			
17:15						
17:30						
17:45						
18:00	<b>Opening Plenary I</b>					
18:15						
18:30						
18:45						
19:00	<b>Informal Reception</b>	<b>Symposium Reception</b>			<b>Symposium Gala</b>	
19:15						
19:30						
19:45						
20:00						
20:45+						

## 第 3 章 研討會內容

本次研討會議舉行，每日均有邀請國外相關領域的著名學者，針對斯德哥爾摩公約以來的變化、戴奧辛對健康危害的機制、POPs 的環境法醫學等議題進行近年的發展趨勢與演講。各國研究學者並分別於不同場地，舉行口頭論文報告及壁報論文展示 2 種，其中口頭論文報告共計分為 63 類主題，10 場次的壁報論文分享會，共計 630 員各國相關領域的人餐與本次研討會議。

### 3.1 63 種議題

1. New methods of Analysis (Analytical)
2. Emerging Chemicals Measurements in Biota (Analytical)
3. Capacity Building in Developing Countries (Analytical)
4. New and alternate instrumental methods of analysis (Analytical)
5. Non-target Screening and Determination (Analytical)
6. Bioanalytical Approaches for POP Detection (Analytical)
7. Analysis, General (Analytical)
8. Physical and Chemical Properties and Modelling
9. POPs in the Great Lakes (Levels and trends)
10. POPs in the Arctic (Levels and trends)
11. Persistent Organic Pollutants (POPs) and Emerging Contaminants in Developing Countries (Levels and trends )

12. Emerging Contaminants: Lessons Learned from Past, Current Practices and Future Trends (Levels and trends)
13. Distribution, Transport and Fate of Organohalogenes in the Atmosphere (Levels and trends)
14. Assessing Halogenated POPs using Passive Samplers (Levels and trends)
15. Gas/Particle Partition of POPs in Air (Levels and trends)
16. PCBs in buildings with an emphasis on schools in US and Canada(Levels and trends )
17. Round-table/Discussion forum: Best-practices for Monitoring of POPs in Soils –Dos and Don ´ts, Mays and Musts (Levels and trends)
18. Spatial and Temporal Trends of POPs in Abiotic Compartments (Levels and trends)
19. Spatial and Temporal Trends of POPs in Biota (Levels and trends)
20. Pet Exposure to POPs (Levels and trends )
21. Environmental Transport and Fate, General(Levels and trends)
22. POPs, General (Levels and trends)
23. PCBs, General (Levels and trends)
24. Agent Orange in Vietnam (Human Exposure)
25. Exposure to POPs in Urban, Indoor and Workplace Environments (Human Exposure)
26. Human Exposure, General (Human Exposure)

27. POPs in Food and Feed (Human Exposure)
28. Ecotoxicology, General
29. Absorption, Distribution, Metabolism and Excretion (ADME) of Legacy and Emerging Persistent Organic Pollutants (POPS) in Animals (Metabolism and Toxicology)
30. Metabolomics and Systems Biology in POPs toxicity studies (Metabolism and Toxicology)
31. Neurotoxicity of Legacy and Emerging Persistent Organic Pollutants (POPs) (Metabolism and Toxicology)
32. Endocrine Disruptors, General (Metabolism and Toxicology)
33. Effects of Dioxin-Like Chemicals on Reproduction (Metabolism and Toxicology)
34. Molecular Biology of the Ah Receptor and Ah Receptor-Dependent Signaling (Metabolism and Toxicology)
35. Toxicology, General (Metabolism and Toxicology)
36. From Science to Decision Making (Policy)
37. Risk Assessment and Policies
38. POPs and Risk for Human Health
39. Risk Assessment and Risk Management, General
40. Risk Evaluation of Dioxin-like Chemicals (Metabolism and Toxicology)
41. Epidemiology - POPs, Endocrine Disruptors and Cancer (Epidemiology)

42. Anniston Follow up Study (Epidemiology)
43. POPs in longitudinal cohorts (Epidemiology)
44. Epidemiology - What have we learned? (Epidemiology)
45. Integrating Exposure, Toxicology and Epidemiology (Epidemiology)
46. Epidemiology , General (Epidemiology)
47. Remediation, Best Available techniques/Best Environmental Practices  
(Remediation)
48. Formation, Sources and Remediation (Remediation)
49. Are PFASs a New Concern for Wildlife & Humans? (Compound Specific -  
PFAS)
50. Legacy to emerging fluoroalkyl contaminants in air to biota in the global  
environment (Compound Specific - PFAS)
51. Total Fluorine Analysis and Total Oxidisable Precursor (TOP) Assay with  
Special Reference to PFAS and Their Alternatives (Compound Specific -  
PFAS)
52. Perfluoroalkyl Substances - general (Compound Specific - PFAS)
53. Short and Medium Chain Chlorinated Paraffins (Compound Specific - PCAs)
54. Brominated Flame Retardants (Compound Specific, BFRs)
55. Alternate Flame Retardants: Environmental Presence, Fate and  
Exposure(Compound Specific - FRs)
56. Halogenated Phenolic Compounds (Compound Specific, HPC)



57. Polychlorinated Naphthalenes (Compound Specific, PCN)
58. Polycyclic Compounds (Compound Specific)
59. Environmental litigation (Environmental Forensics)
60. Investigation planning, sample collection and management for environmental forensics (Environmental Forensics)
61. Development of comprehensive analytical techniques for complex mixture analysis (Environmental Forensics)
62. Higher level statistics analysis (Environmental Forensics)
63. Contaminated Sites and source tracking (Environmental Forensics)

## 3.2 專輯演講

本次會議共計六場次的主題演講，由各領域專家學者對近期的研究趨勢進行大方向的演講介紹，內容大意如下：

### 1. Persistent, bioaccumulative and toxic contaminants in marine mammals: a legacy concern for conservationists

Peter S. Ross

#### 海洋哺乳動物中持久性有機污染物的問題

講者：Peter S. Ross，加拿大 Coastal Ocean Research Institute。

內容：

在斯德哥爾摩公約後，國際意識到許多持久性、生物累積性及有毒化學物質的累積會影響到海洋的任何一個角落。在歐洲、北極和東北太平洋的海洋哺乳動物方面的工作揭示了持久性有機污染物藉生物鏈蓄積的性質，以及多氯聯苯對不同物種內分泌和免疫系統的影響。講者的研究指出令人不安的訊息，即溫哥華與西雅圖水域的殺人鯨就算到 21 世紀末，都無法遠離 PCB 相關的健康威脅。歸咎原因，市場上的數千萬種化學品導致了野生動植物的威脅，因此實驗室物種的短期實驗無法滿足風險評估者的數據需求。講者認為化學品進入市場之前，須採取更加預防性的監督管理辦法，更好地捕捉營養級別，壽命，流動性以及內分泌干擾與傳統的影響措施（生長，繁殖和死亡）之間的關係。

### 2. Dioxin and the AHR: The Beginnings and no end in site

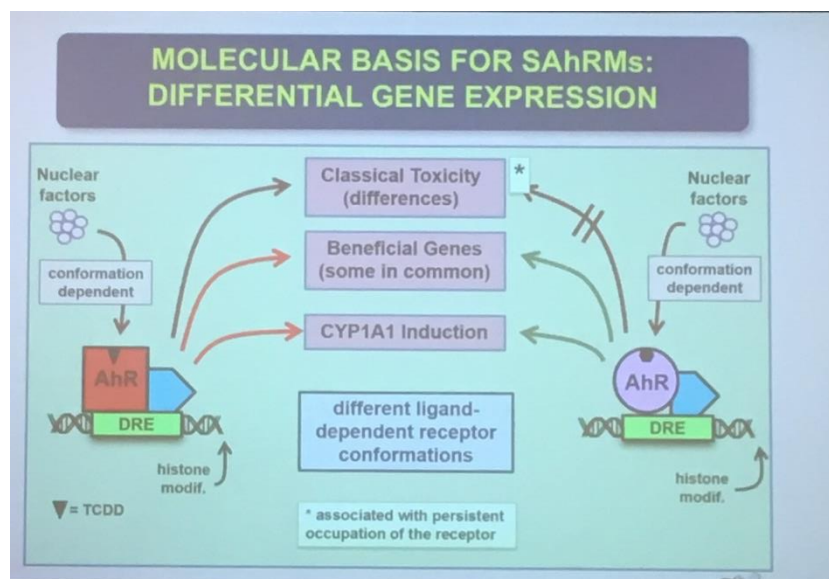
Stephen Safe

戴奧辛與 AhR

講者：Stephen Safe，美國 Texas A&M University

內容：

該講者的研究團隊研究與戴奧辛毒性有關的毒理機制，發現體內的一種芳香烴受體的蛋白質(AhR)與 TCDD 相關的 PCDD、PCDF 及 PCBs 的結合機制有關，在動物實驗中，使用基因剔除將 AhR 剔除的老鼠進行對照，未進行基因剔除的老鼠內有觀察到 AhR 與 TCDD 的結構化合物，且研究顯示 AhR 在癌症、腸病及免疫疾病等疾病方面有保護機制，顯示 AhR 與戴奧辛機制的重要性，相關研究正在持續中，以利了解戴奧辛的毒性及後續的管理。



### 3. Environmental Forensics of Persistent Organics Pollutants

Gwen O'Sullivan

POPs 的環境法醫學

講者：Gwen O'Sullivan，Mount Royal University

內容：

環境法醫學是一個快速增長的科學領域，其中包含跨學科知識，以評估污染物釋放的來源，年齡和時間。環境法醫學是對可能用於訴訟的多條信息線進行有條不紊的評估，以分配污染責任。環境法醫學研究範圍很複雜；最簡單的形式可能涉及基於化學標記物的存在或不存在來識別污染源。更複雜的案件可能涉及混合來源和環境風化，這需要高等的統計運算來釐清特徵。環境法醫學不僅涉及訴訟事宜，也可能適用於公開爭議的問題，以支持特定的索賠或立場。WHO 雖然將 dIPCB 分為 12 項 PCB，然而，在環境法醫學中，通常需要更多的同源物進行分離，以識別微生物降解，揮發和生物轉化等過程。分析技術的進步，包括單維和多維 TOF MS，使得前述的分析變得可能。從這種分析產生的數據量是巨大的，並且需要先進的多變量統計分析技術來辨別模式與來源，區分背景影響以及分攤貢獻/責任。

#### 4. Science and Policy of POPs through Passive Air Sampling

Tom Harner

持久性有機污染物通過被動空氣取樣的科學與政策

講者：Tom Harner，加拿大 Environmental and Climate Change

Canada(ECCC)

內容：

自 2000 年成立以來，聚氨酯泡沫（PUF）盤式被動式空氣採樣器大大提高了對 POPs 和新興化學品的產生，運輸和命運的認識。以簡單且成本效益良好的方式收集氣相與顆粒持久性有機污染物的能力，使得可以收集龐大的資料，並透過模式模擬瞭解區域和全球規模的傳輸情形。

在被動空氣採樣器和模式模擬的整合下，斯德哥爾摩公約的全球監測計畫也跟著開始展開。全球大氣被動採樣網路自 2005 年以來一直在全球七大洲的五十多個站點上運行，為持久性有機污染物提供了獨一無二的全球尺度圖。本次的研討會將持續推動這 17 年來的研究成果以及未來的運用。

## 5. The role of environmental chemicals in obesity

Juliette Legler

環境化學物質在肥胖中的作用

講者：Juliette Legler，英國 Brunel University London

內容：

全球肥胖發病率是這個時代最嚴重的公共衛生挑戰之一。越來越清楚的是，發展早期的環境因素，如化學物質的暴露，在肥胖的病因學中扮演重要的角色。近年來，講者利用綜合的毒理學和流行病學方法來研究環境化學物質在肥胖中的作用。研究顯示，產前接觸化學物質會影響肥胖發展過程，包括增加脂肪細胞的分化，能量代謝的改變以及兒童體重的升高。講者實驗室目前的研究重點是揭開表觀遺傳機制，通過這種機制，化學物質可能會影響體外和斑馬魚模型的代謝途徑和脂肪形成。預計通過此研究可發現，因受到化學暴露，造成肥胖症調控失調的基因機制，以便採用預防策略來減少肥胖症和全球衛生保健系統的相關病因。

## 6. Contamination and human exposure to micropollutants including dioxin-related compounds in informal recycling sites for e-waste and

end-of-life vehicles

Shin Takahashi

電子廢棄物和報廢車輛的戴奧辛污染問題

講者：Shin Takahashi，日本愛媛大學

內容：

電子廢棄物與報廢車輛（ELV）因內含許多可回收的元件與材料，在發展中國家或新興工業化國家的非正式回收站，多採用燃燒等原始的方式取得廢棄物中的金屬，造成了嚴重的有害物質的污染，如戴奧辛、氯化及溴化多環芳烴等。講者在越南北部和加納的電子廢物和 ELV 的非正式回收站進行了環境監測，以評估包括各種戴奧辛在內的微污染物的環境釋放情況，並評估其人體健康風險。並利用戴奧辛受體 - CALUX 體外生物測定，討論戴奧辛毒性的毒性鑑定和評價。此外，講者未來將對加納電子廢物焚燒場土壤中的戴奧辛和 Cl- / Br-PAHs 進行調查。

### 3.3 其他演講內容

#### 一、食物及動物相關

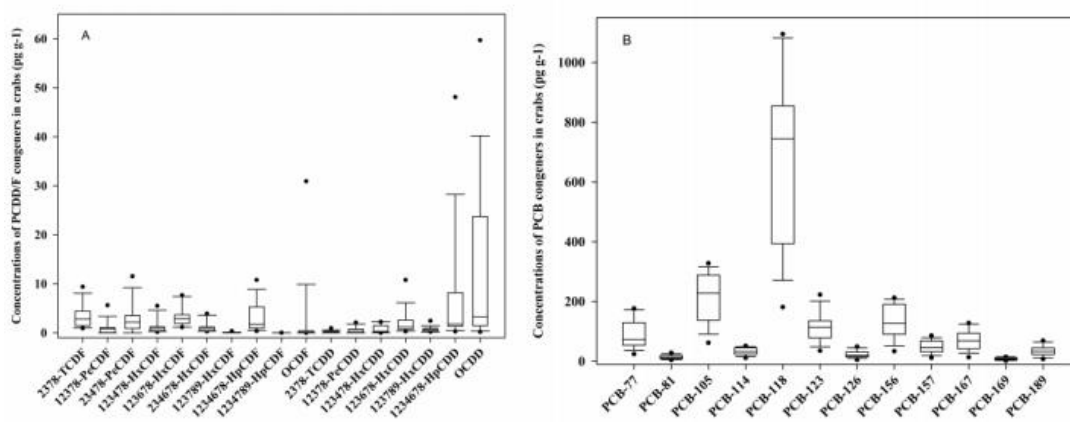
##### 1. Estimation of Polychlorinated dibenzo-p-dioxin, dibenzofuran, and biphenyl sources in Chinese mitten crabs

Ying Han , Wenbin Liu,

中國大閘蟹內戴奧辛研究

內容：

進行 32 個樣品之 PCDD/F+PCBs 分析，結果顯示蟹黃的 PCDD/F 濃度為 1.3-15 pg TEQ/g (平均 5.7 pg TEQ/g)，PCBs 為 1.5-8.7 ng/g (平均 5.2 ng/g)。如以每次每人攝取 36g 蟹黃計算，PCDD/F+PCBs 之攝取量為 3.4 pg TEQ/kg bw/d (範圍 0.78–9.1 pg TEQ/kg bw/d，中位數 2.6 pg TEQ/kg bw/d)，為歐盟規範的每週容許量 14 pg TEQ/kg bw/d 的 0.24 倍，範圍最高值時為 0.65 倍。正常的攝取情形應屬於安全，但如以大量攝取螃蟹，吃其他海鮮類時可能有 PCDD/F+PCBs 的風險。



##### 2. Decontamination of pigs exposed to an environmental source of PCB

Vincent Vaccher, Elodie Lesquin, Aline Brosseau, Anaïs Venisseau, Philippe Marchand,  
Bruno Le Bizec

### PCB 污染豬隻的去污染狀況

#### 內容

2016 年，法國國家監測計劃針對養豬場中的多氯聯苯污染進行調查。收集了代表潛在污染源的樣本(豬脂肪，飼料，材料，灰塵和土壤)，最終認為 PCB 之污染來源來自飼料儲罐油漆。該塗料量測到大量的 dl-PCB ( $>1\mu\text{g}\cdot\text{g}^{-1}$  基質)。該研究針對該區污染的豬隻進行了在無污染的乾淨環境下去污的豬隻與未去污的豬隻的對照比較。

### 3. Persistent organic pollutants in two species of white-blooded Antarctic fish

M Zennegg, A Strobel, P Schmid, H Segner, P Burkhardt-Holm

### 南極冰魚的 POPs 研究

#### 內容

針對兩種南極冰魚的 POPs 含量進行調查，總體而言，在本研究中測得的所有化合物中，多氯聯苯占主導地位，其次是 DDTs，PBDEs，HCB 和  $\gamma$ -HCH 與文獻資料相比，所量測到的 PCB 和 DDT 濃度高於九十年代。此外，全球範疇的氣候變化導致 POPs 的揮發，並且通過長距離大氣運輸，這些有毒污染物甚至可以抵達像南極洲和南極洲這樣的極端偏遠地區。同時，南極冰川和冰塊的加速融化可能增加儲存在冰內的持久性有機污染物的釋放，從而導致南大洋及其生物區域的逐漸污染。



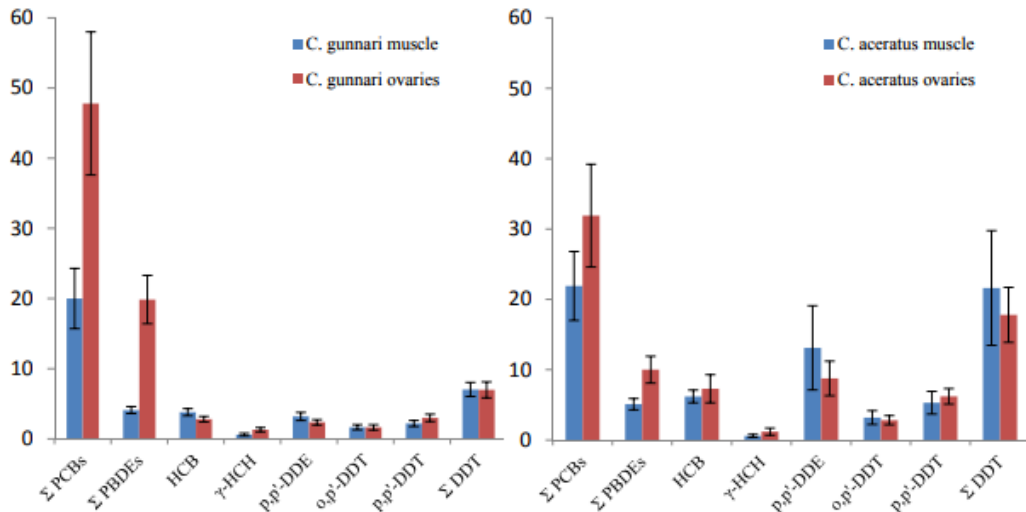


Figure 1: Mean concentrations ( $\pm$  sem) of  $\Sigma$  PCBs (28, 52, 101, 138, 153 and 180),  $\Sigma$  PBDEs (28, 47, 99, 100, 153, 183 and 197), HCB,  $\gamma$ -HCH, and  $\Sigma$  DDT (*p,p'*-DDE, *o,p'*-DDT and *p,p'*-DDT) in muscle and ovaries of the two icefish *C. gunnari* (n=11) and *C. aceratus* (n=10) in ng g<sup>-1</sup> lipid weight.

#### 4. What wild bird eggs tell us about persistent organic pollutants in South Africa?

Quinn LP, Swiegelaar CR, Polder A, Pieters R, Bouwman H

南非鳥蛋的 POPs 污染狀況

內容

一般認為，PFC 和 BFR 等新興管制的 POPs 濃度將高於傳統的 POPs，如多氯聯苯和有機氯農藥。來自南非中西部的野鳥蛋就是這種情況。

在這些地區，全氟化碳的濃度最高，其次是有機氯農藥，多氯聯苯，最低的濃度是溴化阻燃劑。但是，滴滴涕仍然用於控制瘧疾的地區並非如此。在這些地區，有機氯農藥通常比任何其他持久性有機污染物高出一個數量級。野生鳥蛋中持久性有機污染物測得的最高濃度是 OCP 20,000 ng / g wm，其次是 PFCs 2,900 ng / g wm，多氯聯苯 540 ng / g wm；BFR 為 220 ng / g wm，戴奧辛為 0.01 ng / g wm。BFR 的濃度受到野生鳥類與人類的關聯程度的強烈影響，以人類垃圾堆場為食或靠近人類垃

圾堆場的物種的濃度最高。

## 二、國內學者

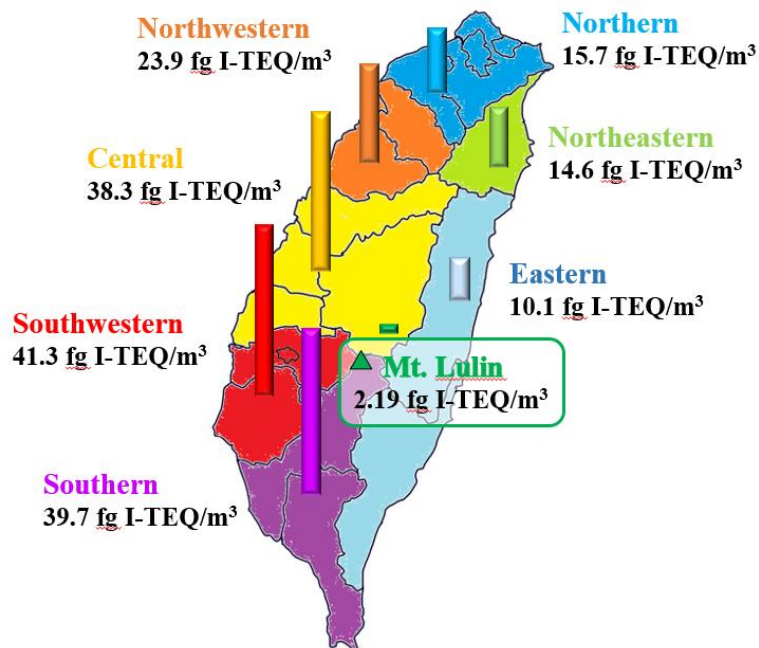
### 1. National and Continuous Dioxin Air Monitoring Network in Taiwan (2006-2016): Spatial, Temporal Variation and Emission Sources Apportionment via Positive Matrix Factorization

Yang YS, Yang HY, Huang WS, Hsu YC, Tsai HT, Chi KH

陽明大學紀凱獻教授的台灣大氣戴奧辛長期觀測及 PMF 來源分析

內容：

將 2006-2013 的全國戴奧辛空品資料依空品區劃分，利用歷年的稽查及定檢等檢測資料 1165 筆，以 PMF 方法進行污染源的貢獻比例分析，北部受到長程傳輸的影響，中部及高屏受到電弧爐及二級冶煉影響。



<i>Regions</i>	<i>Factor</i>	<i>Candidate source</i>	<i>Contribution (%)</i>
<b><i>Northern</i></b> <b><i>(n=248)</i></b>	A	Long-range transport	24.6
	B	Crematories	15.0
	C	vehicle	18.5
	D	MSWI	41.9
<b><i>Northwestern</i></b> <b><i>(n=130)</i></b>	A	Coal-fired power plant	32.0
	B	vehicle	10.3
	C	Sinter plant	10.8
	D	MSWI	24.6
	E	Long-range transport	22.4
<b><i>Central</i></b> <b><i>(n=223)</i></b>	A	EAF	47.8
	B	vehicle	12.7
	C	Coal-fired power plant	17.9
	D	SMS	21.6
<b><i>Southwestern</i></b> <b><i>(n=209)</i></b>	A	Biomass burning	26.7
	B	MSWI	21.3
	C	Secondary metal smelt	11.5
	D	Coal-fired power plant / EAF	29.4
	E	vehicle	11.2

<i>Regions</i>	<i>Factor</i>	<i>Candidate source</i>	<i>Contribution (%)</i>
<b><i>Southern</i></b> <b><i>(n=226)</i></b>	A	Sinter plant	16.8
	B	Secondary metal smelt	44.6
	C	EAF	31.6
	D	MSWI	7.3
<b><i>Northeastern</i></b> <b><i>(n=42)</i></b>	A	MSWI	35.6
	B	vehicle	25.4
	C	Long-range transport	39.0
<b><i>Eastern</i></b> <b><i>(n=87)</i></b>	A	Cement kilns	40.4
	B	vehicle	30.4
	C	Biomass burning	29.2

## 2. Characteristics of ambient PCDD/Fs measured in a tropical city during rainy season

Minh Man Trinh, Moo Been Chang

中央大學張木彬教授及發表於越南的戴奧辛監測結果

內容

於雨季時在胡志明市之商業區、工業區、鄉村區進行採樣，其 TSP

分別為  $37.25 \mu\text{g}/\text{m}^3$ ,  $47.75 \mu\text{g}/\text{m}^3$ ,  $20.03 \mu\text{g}/\text{m}^3$ 。TSP 濃度顯著低於亞洲國家測量的濃度。在採樣期間，胡志明市的高降雨量（採樣期間為 165 至 295 毫米）造成對周圍粒狀物的清除效應，可能是造成粒狀物含量偏低的原因。戴奧辛為  $2515 \text{ fg}/\text{m}^3$  ( $108.7 \text{ fg-WHO-TEQ}/\text{m}^3$ ),  $3943 \text{ fg}/\text{m}^3$  ( $200.9 \text{ fg-WHO-TEQ}/\text{m}^3$ ) and  $514.2 \text{ fg}/\text{m}^3$  ( $29.96 \text{ fg-WHO-TEQ}/\text{m}^3$ )，戴奧辛濃度符合日本空品標準  $600 \text{ fg-WHO-TEQ}/\text{m}^3$ ，但工業測站則超過了德國標準 ( $150 \text{ fg-WHO-TEQ}/\text{m}^3$ )。在雨季，氣固分佈結果顯示，在商業，工業和農村地區，固相 PCDD / Fs 分別佔 68.36%，73.65%和 50%。與其他研究相比，固相 PCDD / Fs 的比例低可歸因於強雨造成粒狀物的強烈清除。

### 3. Composition of $\text{PM}_{2.5}$ and Variation of Atmospheric PCDD/Fs in Northern Taiwan during Winter Monsoon and Local Pollution Events in 2015-2016

Wen Xuan Huang, Hsin Yu Yang, Yu Shiang Yang, Yi Na Li, Yuan Cheng Hsu, Charles C.-K. Chou, Kai Hsien Chi

台灣北部  $\text{PM}_{2.5}$  組成及 2015-2016 年冬季東北季風變化與本地污染事件

內容

該研究於富貴角等北部區域進行  $\text{PM}_{2.5}$  及 PCDD/Fs 採樣，並將風向分為長程傳輸事件 LRT (Long-Range Transport event) 與本地污染事件 LP(Local Pollution event)，結果顯示 LRT 時  $\text{PM}_{2.5}$ , CO, O<sub>3</sub> 都有升高的趨勢。PSCF 與 SRA 分析顯示，PCDD/Fs 在 LRT 時，中國中部占有 35.4% 之貢獻。台灣北部的空氣品質主要受當地人為排放影響，當高壓經常出

現時，將台灣西部的工業排放帶到北台灣，影響北台的空氣品質

另壁報論文內容包含本署環境檢驗所發表之「土壤中殘餘的含有機氯之農藥的調查」，以及國內中央大學發表之「戴奧辛與汞之土壤整治模擬實驗」、高雄第一科技大學之「塑化劑暴露對雄性大鼠精子功能的轉基因作用」等。

## 第 4 章 心得及建議

國外學者演講內容，除傳統的戴奧辛外，其他新興污染物(PFOS、PHAs 等)之研究也不在少數，顯示這類主題之發展，為國際焦點，另我國已有推動固定污染源戴奧辛管制工作，已將所有固定污染源排放戴奧辛均納入管制，與其他國家相比，在戴奧辛管制屬腳步快速且嚴格者，惟其他物種的研究與國外相比較少，可逐漸進行初步的研究。

本署持續推動有害空氣污染物管制，管制方式以排放標準及持續進行環境空氣監測為主，然戴奧辛之減量，另外涉及燃料使用、移動源政策等惟相關整體管理，應會同政府單位共同分工。

# 附錄

Sunday 20<sup>th</sup> August



Start	End	Description	Title	Location
10:00	16:30	Registration		3rd Floor
17:00	18:00	Opening Ceremony		Grand Ballroom
18:00	18:45	Plenary I	<b>Persistent, bioaccumulative and toxic contaminants in marine mammals: a troubling legacy concern for conservationists</b> <i>Peter S Ross</i>	Grand Ballroom
19:00	21:00	Welcome Reception	A welcome reception will be held in the Exhibit Hall at Sheraton Wall Centre following the opening ceremonies. Refreshments and hors d'ouvres will be served.	Exhibit Hall



Monday 21<sup>st</sup> August



Start	End		Title Presenter	Location
08:30	09:45	Plenary II	<p align="center"><b>Dioxin and The AhR: The Beginnings and No End In Site</b></p> <p align="center"><i>S Safe</i></p>	Grand Ballroom
09:15	09:45	Poster Session I	<p>P1-A An Analytical Method for Alternative Flame Retardants in Chairs and Car Seats to Evaluate Direct Dermal Exposure from Interior Consumer Products K Terao</p> <p>P10-E Tissue-specific bioaccumulation of halogenated methylbipyrroles and long-chain perfluorinated carboxylic acids in marine mammals stranded in northern Japan Yukiko Fujii</p> <p>P11-E Mass balance analysis of PFASs in rice (<i>Oryza sativa</i> subsp. Japonica) S Taniyasu</p> <p>P12-E Distribution of PFASs on leaching depth using rice paddy lysimeter H Eun</p> <p>P13-E Development of enzymatic membrane bioreactors for removal of persistent organohalogen compounds from wastewater F.I. Hai</p> <p>P14-E Organochlorine pesticides in agricultural soils of the main agricultural valleys of Baja California, Mexico N Ramírez-Álvarez</p> <p>P16-E Towards a Nested Exposure Model for organic contaminants (NEM) K Breivik</p> <p>P17-E Survey on Per- and Polyfluoroalkyl Substances in Aquatic Biota in Okinawa, Japan -Is N-ethyl perfluorooctane sulfonamidoethanol related to formation of PFOS in Fish?- Kitao Ryota</p> <p>P18-E Potential PFOS Precursor Treatment Options in Water M Beveridge</p> <p>P19-E Determination and distribution pattern of environmental persistent free radicals in haze-associated atmospheric particle matters using electron paramagnetic resonance spectroscopy Lili Yang</p> <p>P2-A Lipid Loading and Elution Profiles for an Automated Cleanup Method for Polychlorinated Biphenyls, Polybrominated Diphenyl Ethers, Dioxins and Furans Analyses Jeff Wiseman</p> <p>P20-E Identification of source-specific polycyclic aromatic compounds (PACs) in contaminated soils M Larsson</p> <p>P21-E Survey on Occurrences of Polyfluoroalkyl Phosphate Esters (PAPs) in Cosmetics and Wastewater Treatment Plants S Yukioka</p> <p>P23-H Simultaneous Analytical Method for Brominated and Phosphorus Flame Retardants in Human Sample T Nakao</p> <p>P24-H Coupling Structure Activity Relationship and a Multiplex Analytical Method to Assess Total Toxic Exposure EM Jazan</p> <p>P25-H GC-MS Identification of Phthalate and Alternative Plasticisers in Medical Devices Govindan Malarvannan</p> <p>P26-T Perfluorooctanoic Acid Uptake by Alfalfa (<i>Medicago sativa</i>) and subsequent Bioavailability from Feeding to Sprague-Dawley Rats S.J. Lupton</p> <p>P27-T Effects of 2, 2', 4, 4'-tetrabromodiphenyl ether on the path angle and social activity of zebrafish larvae Bin Zhang</p> <p>P28-R Bilateral Collaboration and Joint Management for the Environmental Remediation of Dioxin Contamination at Danang Airport and Other Agent Orange Programs MO Patterson</p>	Exhibit Hall

			<p>P29-R An Evaluation of Federal and State Perfluorooctanoic acid (PFOA) Drinking Water Standards in the US Andrew Monnot</p> <p>P3-A Organisation of an international interlaboratory study as a first step towards a harmonized approach to Analysis of Chlorinated Paraffins K Kraetschmer</p> <p>P30-R Management Status and Information System for Wastes containing PCBs in Korea Kyuyeon Kim</p> <p>P31-R Modified Sample Clean-up for Combined POPs Using Automated Multi-Column Fractionation and Analytical Optimization HR Shir Khan</p> <p>P4-A Occurrence of halogenated flame retardants in Belgian foodstuff G Poma</p> <p>P5-A New GC Inlet Liner Deactivation Demonstrates Excellent Response for Active Compounds Trent Sprenkle</p> <p>P6-A ppLFR-MUM: An Updated Multimedia Urban Model (MUM) used for Estimating Organophosphate Ester (OPE) Transport, Fate and Emissions in Toronto, Canada M.L. Diamond</p> <p>P7-A External Quality Assessment Schemes (AMAP and Dioxins/Furans) to validate POPs measurement in human serum and a novel approach by APGC-MS/MS to increase the sensitivity of these compounds. E Gaudreau</p> <p>P8-A Levels of Polybrominated Diethyl Ether (PBDEs) in some foods commonly consumed in Nigeria B.A Babalola</p>	
09:45	10:00	Coffee Break		Exhibit Hall
10:00	12:00	Session 1 - New and Alternate Instrumental Methods of Analysis	<p>10:00 - 10:20 M1-1 HIGH RESOLUTION ORBITAL TRAPPING MASS SPECTROMETRY MEASUREMENT OF PERSISTENT ORGANIC POLLUTANTS IN COW'S MILK DG Hayward</p> <p>10:20 - 10:40 M1-2 Quantification of Dioxins by GC-Orbitrap MS Paul D. Jones</p> <p>10:40 - 11:00 M1-3 Comparison of atmospheric pressure chemical ionisation and electron ionisation for the analysis of persistent organic pollutants GR Jones</p> <p>11:00 - 11:20 M1-4 A GCxGC-HR-TOFMS with Enhanced Sensitivity: Targeted and Non-Targeted Analysis of Highly Complex Environmental Samples V Artaev</p> <p>11:20 - 11:40 M1-5 Variable energy electron ionization enhances the sensitivity and selectivity of brominated flame retardant analysis by GC/MS and GC x GC TOF/MS Mohamed Abdallah</p> <p>11:40 - 12:00 M1-6 Development of a HRMS method to aid in identification of chlorinated and brominated contaminants A.C. IONAS</p>	Grand Ballroom AB
10:00	12:00	Session 2 - Legacy to Emerging Fluoroalkyl Contaminants in Air to Biota in the Global Environment	<p>10:00 - 10:20 M2-1 Side-Chain Fluorinated Polymer Surfactants in Aquatic Sediment and Biosolid-Augmented Agricultural Soil from the Great Lakes Basin of North America R.J. Letcher</p> <p>10:20 - 10:40 M2-2 Presence of emerging per- and polyfluoroalkyl substances (PFAS) in river and drinking water near a fluorochemical production plant in the Netherlands WA Gebbink</p> <p>10:40 - 11:00 M2-3 Monitoring of food in a region contaminated with PFAS R Malisch</p> <p>11:00 - 11:20 M2-4 The PFOA alternative GenX now detected in grass and leaves near the Teflon plant in the Netherlands S.H. Brandsma</p> <p>11:20 - 11:40 M2-5 Perfluorinated compounds in offshore fire-fighting foams – a source for marine contamination? R Suehring</p> <p>11:40 - 12:00 M2-6 State of the science and meta-analysis of crop uptake of per- and polyfluoroalkyl substances (PFAS) A.L. Perez</p>	Grand Ballroom CD

10:00	12:00	Session 3- Brominated Flame Retardants	<p>10:00 - 10:20 M3-1 EPIDEMIOLOGY OF EXPOSURE TO MIXTURES OF PBDES AND THYROID HORMONE DISRUPTION TF Webster</p> <p>10:20 - 10:40 M3-2 Hexabromocyclododecane (HBCD) found in e-waste is widely present in children's toys Lee Bell</p> <p>10:40 - 11:00 M3-3 Flame Retardants in Furniture: Policies and Implications in North America AE Lindeman</p> <p>11:00 - 11:20 M3-4 Measuring Exposure to Brominated Flame Retardants using Silicone Wristbands S. Hammel</p> <p>11:20 - 11:40 M3-5 Occurrence of HBCDDs, bromophenols, tetrabromobisphenol A and tetrabromobisphenol S in milk, eggs, fish, offal and animal fat produced in Ireland in 2014 C Tlustos</p> <p>11:40 - 12:00 M3-6 Simultaneous and Reliable Determination of PCDD/F, PCB, PBDE and PBDD/F Thorsten Bernsmann</p>	Junior Ballroom AB
10:00	12:00	Session 4- Risk Assessment and Risk Management	<p>10:00 - 10:20 M4-1 Recommendations for further work on per- and polyfluorinated substances (PFASs) D Borg</p> <p>10:20 - 10:40 M4-2 Ecological and health risk assessment of persistent organic pollutants in Taihu Lake basin, China Dong Wang</p> <p>10:40 - 11:00 M4-3 SAFR®: Integrating exposure with hazard in a new assessment approach for responsible fire safety solutions. Joel Tenney</p> <p>11:20 - 11:40 M4-5 Identifying Human Populations with High Exposure Susceptibility to Polychlorinated Biphenyls Based on Source Proximity, Global Transport and Dietary Habits F. Wania</p> <p>11:40 - 12:00 M4-6 Risk tools for ready-to-use modeling of PFAS transfer from contaminated feed into foods of animal origin J Numata</p>	Junior Ballroom C
10:00	12:00	Session 5- Distribution, Transport and Fate of Organohalogen in the Atmosphere	<p>10:00 - 10:20 M5-1 AMBIENT AIR MONITORING PROGRAM (2013-2015) MONTGOMERY COUNTY, MARYLAND SOLID WASTE RESOURCE RECOVERY FACILITY</p> <p>10:20 - 10:40 M5-2 NATIONAL AND CONTINUOUS DIOXIN AIR MONITORING NETWORK IN TAIWAN (2006-2016): SPATIAL, TEMPORAL VARIATION AND EMISSION SOURCES APPORTIONMENT VIA POSITIVE MATRIX FACTORIZATION</p> <p>10:40 - 11:00 M5-3 Hexachlorobutadiene (HCB) in Ambient Air : analytical method development and trends at Supersite of Japan</p> <p>11:00 - 11:20 M5-4 Emissions of Persistent Organic Pollutants from Forest and Savannah Fires</p> <p>11:20 - 11:40 M5-5 Halogenated Flame Retardants Water-Soluble Ions in Airborne Particles of the Pearl River Delta in Southern China: Levels, Distribution, and Sources</p> <p>11:40 - 12:00 M5-6 Composition of PM2.5 and Variation of Atmospheric PCDD/Fs in Northern Taiwan during Winter Monsoon and Local Pollution Events in 2015-2016</p>	Junior Ballroom D
10:00	12:00	Session 6- Absorption, Distribution, Metabolism and Excretion (ADME) of Legacy to Emerging Persistent Organic Pollutants	<p>10:00 - 10:20 M6-1 Cypermethrin residues and diastereoselectivity in commercial and home-produced chicken eggs JPM Torres</p> <p>10:20 - 10:40 M6-2 Combined effect of sea ice retreat and pollutants on lipid metabolism in polar bears S Tartu</p> <p>10:40 - 11:00 M6-3 Biotransformation of flame retardant 1,2-Dibromo-4-(1,2-dibromoethyl)cyclohexane (TBCEH) in vitro by Human Liver Microsomes K-H Nguyen</p> <p>11:00 - 11:20 M6-4 2,4,6-Tribromophenol disposition and kinetics in female Sprague Dawley Rats Gabriel Knudsen</p> <p>11:20 - 11:40 M6-5 Bioavailability of HBCD/TBB/TBPH from dust and oil vehicles in Sprague-Dawley rats H Hakk</p>	Parkville

			11:40 - 12:00 M6-6 Validity of serum concentration in exposure assessment to environmental pollutants – a case study of perfluoroalkyl acids in Finnish children Jani Koponen	
12:00	13:00	Lunch & Exhibitions	Grand Ballroom Foyer Junior Ballroom Foyer	
13:00	14:20	Session 1- New and Alternate Instrumental Methods of Analysis	13:00 - 13:20 M1-7 High throughput GC-HRMS acquisition methods for the analysis of PCDD/Fs and PCBs in biological matrices C Calaprice 13:20 - 13:40 M1-8 Integration of polybrominated diphenyl ethers (PBDE) and other brominated compounds into the automated sample preparation for dioxines and PCBs. MH von Essen 13:40 - 14:00 M1-9 A Study of All 209 PCB Isomers using GC-APCI-MS/MS at Various Collision Energies: Correlations with EI Data and Toxicity J Hart 14:00 - 14:20 M1-10 Evaluation of a High Throughput, No DCM or Capital Equipment Sample Clean Up for POPs Analysis R. Addink	Grand Ballroom AB
13:00	14:20	Session 2- Are PFASs a New Concern for Wildlife & Humans?	13:00 - 13:20 M2-7 Time trends in Perfluoroalkyl and Polyfluoroalkyl substances (PFASs) in California women: declining serum levels, 2011-2015 Susan Hurley 13:20 - 13:40 M2-8 Per- and polyfluoroalkyl substances in human milk from Swedish mothers: individual and geographical differences and temporal trends, 1972-2015 E Nyberg 13:40 - 14:00 M2-9 Circulating levels of perfluoroalkyl substances (PFASs) and carotid artery intima-media thickness - a longitudinal study over 10 years. M Lind	Grand Ballroom CD
13:00	14:20	Session 3 - Brominated Flame Retardants	13:00 - 13:20 M3-7 Particle-bound PBDEs in a Computer Repair Service: PM1, PM10, and settled dust PB Kurt-Karakus 13:20 - 13:40 M3-8 Polybrominated Diphenyl Ethers in End-of-life Electric Home Appliances Collected in Japan in 2016 N Kajiwara 13:40 - 14:00 M3-9 THE THERMOCHEMICAL FORMATION OF BROMINATED AROMATIC COMPOUNDS FROM TETRABROMOBISPHENOL A AT E-WASTE OPEN BURNING SITES Yusuke Kojima 14:00 - 14:20 M3-10 DETERMINATION OF THE ABSORPTION PATHWAYS AND DEPOSITION MECHANISM OF BROMINATED FLAME RETARDANTS (BFRS) TO WHEAT LEAVES Hongwen Sun	Junior Ballroom AB
13:00	14:20	Session 4- POPs in Food and Feed	13:00 - 13:20 M4-7 Persistent organic pollutants exposure from fish consumption is an important risk factor for type 2 diabetes among First Nations in Canada L Marushka 13:20 - 13:40 M4-8 Dietary Exposure Assessment of Chinese Population to Legacy and Novel Brominated Flame Retardants: Results of a Chinese Total Diet Study and National Human Milk survey ZX Shi 13:40 - 14:00 M4-9 Brominated flame retardants in eggs – data from Kazakhstan and Thailand R Weber 14:00 - 14:20 M4-10 The Norwegian POPs in Food-Study: 19 Years of a World-Wide Interlaboratory Study N. M. Bruun Bremnes	Junior Ballroom C
13:00	14:20	Session 5- Toxicology	13:00 - 13:20 M5-7 Dermal contact with household textiles is a significant exposure pathway to brominated flame retardants Mohamed Abdallah 13:20 - 13:40 M5-8 Excessive Activation of AhR Signaling Reduces Dendritic Growth in the Developing Mouse Brain E Kimura 13:40 - 14:00 M5-9 PCB126 disrupts epidermal growth factor internalization and receptor phosphorylation MC Cave 14:00 - 14:20 M5-10 Comparison of EDCs Risk Perception Between The General Public and Experts Using Psychological Effect Variables in Korea YJ LEE	Junior Ballroom D

13:00	14:00	Session 6- Spatial and Temporal Trends of POPs in Biota	13:00 - 13:20 M6-7 Dioxin and PCB concentrations in Baltic salmon have decreased remarkably during the 2000s' P Ruokojärvi 13:20 - 13:40 M6-8 PCDD/F levels in different tissues from dugongs (Dugong dugon) inhabiting nearshore areas in Queensland S Vijayasathy 13:40 - 14:00 M6-9 Thermal Treatment of Dioxins – At Small and Large Scale G Heron	Parksville
14:20	14:50	Poster Session II	P31-A Determination of Novel Brominated and Phosphorus Flame Retardants in Flame-Retarded Curtains Y Miyake P32-A Characterisation of chlorinated paraffin profiles in sediment and biota by LC-ESI(-)-HRMS and semi-automatic post-acquisition data treatment L Schinkel P33-A Atmospheric Concentrations of some Stockholm Convention Persistent Organic Pollutants in West Asia B Gevao P34-A Organochlorine Pesticides Extraction of air and soil samples using Accelerated Solvent Extractor M Wright P35-A Brominated and Phosphate Flame Retardant Analysis in Television Enclosures E Schreder P36-A Comprehensive Range of Clean-up Methods for Biological Matrices, from High to Low Fat Content C Calaprice P37-A Recovery of Perfluorochemicals from Glass and Painted Metal Surfaces william Mills P39-A Characterization of the Rtx-Dioxin <sub>2</sub> for PCB Analysis by Kovats and Lee Retention Indices C. Stultz P40-A New Reference Materials from the National Institute of Standards and Technology Supporting Environmental Measurement J Kucklick P41-E ROLE OF ADIPOSE TISSUE RESPONSIBLE FOR ECHOLOCATION IN THE BIOACCUMULATION PROCESS OF LIPOPHILIC COMPOUNDS IN HARBOUR PORPOISES L Weijs P42-E Vapour Pressures and Octanol-Air Partition Coefficients of Ultraviolet-Filters, Novel Brominated Flame Retardants (N-BFRs) and Organophosphate Esters (OPEs) J.O Okeme P43-E Enhanced Removal of Perfluorinated Alkylated Substances (PFASs) from Aqueous Solution by Mesoporous Graphene Nanosponge J.J. Jiang P44-E SPATIAL AND TEMPORAL VARIATIONS OF POLYCYCLIC AROMATIC HYDROCARBONS AROUND A TYPICAL MEDICAL WASTE INCINERATOR O.A Adesina P45-E Environmental occurrence and distribution of organic UV stabilizers in sediments of the Bohai and Yellow Seas Christina Apel P46-E LONG-TERM MONITORING ATMOSPHERIC DEPOSITION OF PCDD/Fs IN AN INDUSTRIAL AREA Chunhsun Lin P47-E Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) concentrations in the South Korean agricultural environment Su-Myeong Hong P48-E Ambient air PCDD/Fs and PCBs determination according to UNI EN 1948-1-3-4: uncertainty and instrumental control limits for preliminary evaluation parameters such as flow velocity, water vapor, oxygen and carbon dioxide concentrations MG BONELLI P49-E PCNs Congeners in Ambient Air from Technical PCN and Unintentional Formation T Takasuga P50-E Study of the operating factors influencing the removal of As, Cr, Cu, PCP and PCDD/F from attrition sludge using an alkaline leaching process G Mercier P-52H Determination of concentrations of Dioxins and Polychlorinated Biphenyls in canned mackerel ( <i>S. japonicus</i> ) from Peruvian industry and evaluation of their	Exhibit Hall

			<p>safety status Alfonso Vargas H.</p> <p>P53-H Atmospheric pressure ionisation for gas chromatography mass spectrometry: New perspectives for the determination of persistent organic pollutants (POPs) in human serum P Dumas</p> <p>P140-R Short-Chain Chlorinated Paraffins (SCCPs), a Toxic Industrial Chemical Included for Global Prohibition, Contaminate Children's Toys P.K. Miller</p> <p>P141-R Human health risks related to the consumption of foodstuffs of plant and animal origin produced on a site polluted by chemical munitions of the First World War B Le Bizec</p> <p>P142-R PCDD/Fs in Waste Incineration Fly Ash L Bell</p> <p>P57-S Catalytic decomposition of polychlorinated biphenyls by activated carbon-supported bimetallic catalysts Yifei Sun</p> <p>P58-S Biodegradation of Biphenyl and 2-Chlorobiphenyl by Isolated Bacterium from Mine Soil I.H. Nam</p> <p>P59-T Uptake of perfluorooctanoic acid into human intestinal Caco-2 cells by organic anion transporting polypeptide O Kimura</p> <p>P60-T TCDD and TBBPA disrupted on adipocyte and/or osteoblast differentiation in human mesenchymal stem cells Hideki Kakutani</p>	
14:30	15:05	Coffee Break		Exhibit Hall
15:05	16:25	Session 1- Advances in Trace Analysis	<p>15:05 - 15:25 M1-11 Target, Suspect and Non-Target Screening of Dioxin-Like Compounds in Sediment and Fish Using A Sensitive High-Resolution Time-of-flight Mass Spectrometer Peter Haglund</p> <p>15:25 - 15:45 M1-12 Polychlorinated dibenzo-p-dioxins, dibenzofurans and polychlorinated biphenyls in soil from informal electronic waste units and nearby open dumpsites of India: CALUX Bioassay screening, Concentrations, Homologous profiling and Toxicity Equivalents PAROMITA CHAKRABORTY</p> <p>15:45 - 16:05 M1-13 Influence of dissolved organic matter on the extraction efficiency of flame retardants from surface waters J Gustavsson</p> <p>16:05 - 16:25 M1-14 Comparison of International Quality Assurance and Quality Control Standards for High Resolution Mass Spectrometry Dioxin Analysis DI Thal</p>	Grand Ballroom AB
15:05	16:25	Session 2- Pet Exposure to POPs	<p>15:05 - 15:25 M2-11 Cats' exposure to thyroidogenic compounds associated to dust Jm Weiss</p> <p>15:25 - 15:45 M2-12 CAT EXPOSURE TO POPs AND OTHER UNTARGETED CHEMICALS: LEVELS, TRENDS, AND HYPERTHYROIDISM June-Soo Park</p> <p>15:45 - 16:05 M2-13 in vivo exposure to PCBs in cats: Analysis of metabolic capacities and effects on the thyroid hormone homeostasis Hazuki Mizukawa</p> <p>16:05 - 16:25 M2-14 Tissue Distribution of polychlorinated biphenyls and their metabolites in dog and cat Kohki Takaguchi</p>	Grand Ballroom CD
15:05	16:25	Session 3- Brominated Flame Retardants	<p>15:05 - 15:25 M3-11 TOXIC SPECIES FROM OXIDATION OF TETRABROMOBIPHENOL A B Dlugogorski</p> <p>15:25 - 15:45 M3-12 Trends of BFRs in the UK marine environment J.L. Barber</p> <p>15:45 - 16:05 M3-13 Analysis of halogenated phosphorus flame retardants in insulating foam using pyrolysis and high resolution gas chromatography DE Alonso</p> <p>16:05 - 16:25 M3-14 Spatial Distributions and Contamination Patterns of Brominated Flame Retardants in Soil of the Industrial City of Ulsan, South Korea J-W Jeon</p>	Junior Ballroom AB

15:05	16:25	Session 4- POPs in Food and Feed	<p>15:05 - 15:25 M4-11 PBDE concentrations in cattle fat and meat following exposure to biosolid amended pasture lands DFK Rawn</p> <p>15:25 - 15:45 M4-12 Data base of PCDD/F and PCB congener patterns for identification of sources for contamination of feed and food Rainer Malisch</p> <p>15:45 - 16:05 M4-13 Estimation of Polychlorinated dibenzo-p-dioxin, dibenzofuran, and biphenyl sources in Chinese mitten crabs Ying Han</p> <p>16:05 - 16:25 M4-14 Decontamination of pigs exposed to an environmental source of PCB Philippe Marchand</p>	Junior Ballroom C
15:05	16:25	Session 5- Gas/Particle Partition of POPs in Air	<p>15:05 - 15:25 M5-11 Long-term Monitoring of Atmospheric PCDD/Fs at Mount Lulin during Spring Season: PCDD/F Source Apportionment through A Simultaneous Measurement in Southeast Asia (2008-2016) Yu Hsuan Yang</p> <p>15:25 - 15:45 M5-12 PAHs in Chinese atmosphere: Concentration, source and gas-particle partitioning Wan-Li Ma</p> <p>16:05 - 16:25 M5-14 EVALUATION OF GAS-PARTICLE PARTITIONING OF POLYBROMINATED DIPHENYL ETHERS (PBDEs) IN GLOBAL AIR BY AVAILABLE MODELS Li-Na Qiao</p>	Junior Ballroom D
15:05	16:25	Session 6- Spatial and Temporal Trends of POPs in Biota	<p>15:05 - 15:25 M6-11 Spatial Distribution and Accumulation of Brominated Flame Retardants in the European Eel in Flanders, Belgium Govindan Malarvannan</p> <p>15:25 - 15:45 M6-12 Temporal trends of legacy persistent organic pollutants (POPs) in the Eastern Beaufort Sea beluga whales M Noel</p> <p>15:45 - 16:05 M6-13 Polybrominated Diphenyl Ethers (PBDEs) and Hexabromocyclododecane (HBCD) in marine and freshwater biota samples from the German Environmental Specimen Bank N Lohmann</p> <p>16:05 - 16:25 M6-14 Bioaccumulation of PCBs, OCPs and PBDEs in marine mammals from West Antarctica R Lohmann</p>	Parksville
16:30	17:00	Poster Session III	<p>P61-E PBTK modelling to reveal the toxicokinetics of dioxins in dugongs (Dugong dugon) L Weijs</p> <p>P62-E Occurrence and Distribution of Organophosphate Flame Retardants (OPFRs) in Soil and Outdoor Settled Dust from A Multi-waste Recycling Area in China Yu Wang</p> <p>P63-E QUANTIFICATION OF TOTAL ORGANOHALOGENS (TOX) IN ENVIRONMENTAL SOLID SAMPLES BY USING COMBUSTION-ION CHROMATOGRAPHY K Mukai</p> <p>P65-E Temporal trends of brominated flame retardants and organochlorines in melon-headed whales stranded along the Japanese coastal waters: utilization of samples and data stored in es-BANK and ChemTHEATRE T Kunisue</p> <p>P66-E PRELIMINARY STUDIES ON TEMPORAL VARIATIONS OF ANTIBIOTICS IN SEWAGE TREATMENT PLANTS IN SOUTH INDIA Yerabham Praveenkumarreddy</p> <p>P67-E THE INFLUENCE OF HEXABROMOCYCLODODECANE PRODUCTION PLANT ON SURROUNDING ENVIRONMENT IN AIR AND SOIL Jing Guo</p> <p>P68-E Progress in Environmental Behaviors and Toxicity of Perfluoroalkyl Substances (PFASs) Alternatives Jiayin Dai</p> <p>P69-E Burial of obsolete persistent organic pollutants A Aleksandryan</p> <p>P72-E POPs levels in Norwegian deep-sea fish caught from coastal waters to the open sea H Hove</p> <p>P73-E Contamination Status of Dioxin in the sediment of Indus River and Coastal Environment of Pakistan Nuzhat Khan</p> <p>P74-S FORMATION OF CHLORINATED AROMATIC COMPOUNDS VIA PRIMARY COMBUSTION OF CARBON NANOMATERIALS WITH SALT Takashi Fujimori</p> <p>P75-S De novo formation of PCDD/Fs in the drying zone on sintering belt feed: Influence of the temperature, atmosphere varied and particle diameter Xu</p>	Exhibit Hall

			<p>Shuaixi</p> <p>P76-H Serum Levels of PBDEs, PCB and DDE in Middle-aged and Older California Women: Temporal Trends, 2011-2015 P Reynolds</p> <p>P77-H Determination of Human Exposure Sources for BPA by Using Questionnaire Survey JY YANG</p> <p>P78-H Relationship between serum PCB levels and dietary habit data from brief-type self-administered diet history questionnaire in primipara participants from C-MACH cohort, Japan Chisato Mori</p> <p>P79-H Estimation of Dietary Intake of Dechlorane Flame Retardants in Japan, FY 2016 Tsuguhide Hori</p> <p>P80-R Research, communication, and action: PFAS in food contact materials TA Bruton</p> <p>P81-R Development of Canadian Soil Quality Guidelines for PFOS and PFOA D Longpré</p> <p>P82-R Study on Optimum Treatment Conditions for Chlorinated Flame Retardant and Organochlorine Pesticides Using Thermal Method Youngsam Yoon</p> <p>P83-A HUMAN HEALTH RISK ASSESSMENT OF DIOXIN FROM SOIL CONTAMINATION IN A LUOI DISTRICT IN MIDDLE REGION OF VIETNAM Terry Grim</p> <p>P84-A The new method for analysis of selected organophosphorus flame retardants (OPFRs) in indoor dust Jana Pulkrabova</p> <p>P85-A Comparison of polybrominated diphenyl ethers (PBDEs) and polychlorinated biphenyls (PCBs) in the serum of hypothyroid and euthyroid dogs Grace Lau</p> <p>P86-A Can sheep wool be used as biomarker for dioxin pollution? KJAM Bouman</p> <p>P87-A Serum microRNA biomarker identification in a residential cohort with elevated polychlorinated biphenyl exposures Matthew Cave</p> <p>P89-T Effect of oral or nasal exposure of TCDD on antigen-specific immunoglobulin production without adjuvants Tomohiro Yuzuriha</p> <p>P90-T Hexafluoropropylene Oxide Trimer Acid (HFPO-TA) Might not be a Suitable Alternative to Perfluorooctanoic Acid (PFOA) N Sheng</p>	
17:00	18:00	Poster Social	Cash Bar	Exhibit Hall
19:30	23:00	Dioxin 2017 Reception	The Dioxin 2017 Official Reception will be held at the Vancouver Aquarium located in Stanley ( <a href="http://www.vanaqua.org/">http://www.vanaqua.org/</a> ) between 7:30 and 11:00pm. Buses will depart from Sheraton Wall Centre starting at 7:00pm and circulate between the Aquarium and Sheraton Wall Centre throughout the evening. Dress code is casual. Refreshments, canapes and finger foods will be served.	Vancouver Aquarium



Tuesday 22<sup>nd</sup> August



Start	End		Title Presenter	Location
8:30	9:15	Plenary III	<p align="center"><b>Environmental Forensics of Persistent Organics Pollutants</b></p> <p align="center"><i>G O'Sullivan</i></p>	Grand Ballroom
9:15	9:45	Poster Session IV	<p>P91-A Mass Balance of Per- and Polyfluoroalkyl Substances and Total Fluorine in Food Packaging L Schultes</p> <p>P92-A GC×GC-HR-TOFMS for screening of organohalogenated compounds in cat hair M. Brits</p> <p>P93-A INVESTIGATION OF UNIDENTIFIED ORGANOCHLORINE COMPOUNDS IN SOIL AFTER OPEN BURNING OF E-WASTE USING TD/PY-GC/MS C Nishimura</p> <p>P94-A A New Method for the Analysis of 30 Per- and Polyfluoroalkyl Substances in Maternal Serum SM Crispo Smith</p> <p>P95-A Comparing Ionic Liquid and Polysiloxane Stationary Phase Selectivity for the Analysis of Polycyclic Aromatic Hydrocarbons L. M. Sidisky</p> <p>P96-A APPLICATION OF A SOLVENT-CUT LARGE-VOLUME INJECTION SYSTEM USING DEANS SWITCH-TYPE SILFLOW IN A DIOXIN ANALYSIS OF HUMAN BLOOD D Yasutake</p> <p>P97-A Determination of polychlorinated biphenyls in fish using a polychlorinated biphenyl clean-up system followed by gas chromatography tandem mass spectrometry Tomoaki Tsutsumi</p> <p>P98-A Breakthrough During Air Sampling with Polyurethane Foam: What Do Trap2/Trap1 Ratios Mean? F. Bidleman</p> <p>P99-A Waste Dumps as a Source of Dioxins and Furans A Aleksandryan</p> <p>P101-E EFFECT OF SEA WEEDS ON THE SEA FISH OLUFUNMILAYO REBECCA AJAYI</p> <p>P102-E BFR occurrence in road dust and its relationship with traffic density Zhiguo Cao</p> <p>P103-E HUMAN HEALTH RISK ASSESSMENT OF ORGANOCHLORINE PESTICIDES IN SOME FOODS GROWN IN NIGERIA A Oyeyiola</p> <p>P104-E Polycyclic Aromatic Hydrocarbons (PAHs) and Polychlorinated Naphthalenes (PCNs) in Sediment of Hyogo Prefecture, Japan. Yuki Haga</p> <p>P105-E Occurrence of persistent organic compounds in the surface water from the lower stretch of the River Ganga in India Paromita Chakraborty</p> <p>P106-E Organochlorine pesticides monitoring in São Paulo City (Brazil) using passive air sampler as part of the Global Monitoring Plan MY Tominaga</p> <p>P107-E Air-seawater gas exchange fluxes of Organophosphate esters in the North Atlantic and Arctic Jing Li</p> <p>P109-E Feature signal extraction from long-term changes in persistent organic pollutants over the Arctic J Ma</p> <p>P110-E THE DISTRIBUTION OF PCDD/Fs IN WATER, SEDIEMENT, BIOLOGY SAMPLES AROUND BIEN HOA AGENT ORANGE HOTSPOT Van Hai Chu</p> <p>P111-H Levels of phthalate metabolites and bisphenol A in urine samples from Czech mothers and newborns K Urbancova</p> <p>P112-H Persistent Organic Pollutants in Groundwater: Exposure profiles of PAHs and OCPs at an agricultural site of a north Indian terai region Amit Masih</p> <p>P113-H Anthropogenic and Natural Polybrominated Diphenyl Ethers and Polychlorinated Biphenyls in Fish Oil Capsules from Different Countries. FBM Torres</p>	Exhibit Hall

			<p>P114-R A Probabilistic Evaluation of the 2016 U.S. EPA Health Advisory for Perfluorooctanoic Acid A Monnot</p> <p>P115-R A History of PFAS: Communication and Strategy to Manage their Use A Blum</p> <p>P116-S Spatial heterogeneity and factors driving interspecies differences in the exposure to PFASs in Antarctic, subantarctic and southern cool-temperate seabird communities B Jiménez</p> <p>P117-S Probing the TiO<sub>2</sub> Nanoparticles-induced Photocatalytic Halogenation of Dissolved Organic Matter by Using Ultrahigh Resolution Mass Spectrometry Jingfu Liu</p> <p>P118-T Identification for the biotransformation of BDE209 by in vivo toxicokinetic analysis in Felis catus K Tanaka</p> <p>P119-T CHARACTERISTICS OF CONTAMINATION FOR DDT IN THE AIR AND SOIL IN REPUBLIC OF KOREA Min Jee Kim</p>	
9:45	10:00	Coffee Break		Exhibit hall
10:00	12:00	Session 1- New Methods of Analysis	<p>10:00 - 10:20 T1-1 Improvements in Detection of Analytes in Environmental Matrices Using GCxGC and Mass Spectrometry F Dorman</p> <p>10:20 - 10:40 T1-2 Automating Non-targeted Screening for Emerging Contaminants in Great Lakes Trout B Crimmins</p> <p>10:40 - 11:00 T1-3 Streamlined workflows for environmental analyses by GCxGC Matthew Edwards</p> <p>11:00 - 11:20 T1-4 The advantages of comprehensive screening techniques in environmental forensic investigations involving POPs D Megson</p> <p>11:20 - 11:40 T1-5 Comprehensive targeted and non-targeted analysis of various indoor dust samples using LC-HRMS with Ion Mobility L Mullin</p> <p>11:40 - 12:00 T1-6 Comprehensive Analysis of the Great Lakes Top Predator Fish for Novel Halogenated Organic Contaminants using GCxGC- HRTOF S Fernando</p>	Grand Ballroom AB
10:00	12:00	Session 2- Perfluoroalkyl Substances I - Sponsored by Wellington	<p>10:00 - 10:40 T2-1,2 Implications of the Recently-Discovered PFASs in AFFF-Impacted Groundwater JA Field</p> <p>10:40 - 11:00 T2-3 Identification of Poly- and Perfluoroalkyl Substances Transformation Products in Aqueous Film-Forming Foam Impacted Wastewater M. Wang</p> <p>11:00 - 11:20 T2-4 First report on the environmental friendliness of OBS, an alternative to PFOS in fire-fighting foams and oil production agents in China Yixiang Bao</p> <p>11:20 - 11:40 T2-5 Distribution of per- and polyfluoroalkyl substances (PFASs) in aqueous and terrestrial environment near contamination sources in Sweden A Koch</p> <p>11:40 - 12:00 T2-6 Evaluation of persulfate oxidation liquid chromatography tandem mass spectrometry for ultra-trace analysis of polyfluoroalkyl substances in water J. Liu</p>	Grand Ballroom CD
10:00	12:00	Session 3- Environmental Litigation	<p>10:20 - 10:40 T3-2 Emerging Trends in Unregulated Contaminant Litigation: PFCs A Kanner</p> <p>10:40 - 11:00 T3-3 Conflicts of Interest Issues in Multi-Party Disputes Urs Broderick Furrer</p> <p>11:00 - 11:20 T3-4 Forensic Eco-social Epidemiology of Premenopausal Breast Cancer in Female Customs Inspectors at the Ambassador Bridge M Gilbertson</p> <p>11:20 - 11:40 T3-5 Exploring PCDD/F Data Manipulation using Principal Components Analyses M.J. Wade</p> <p>11:40 - 12:00 T3-6 consequences of fire fighting foam contamination A Kärman</p>	Junior Ballroom AB

10:00	12:00	Session 4- Formation, Sources and Remediation	10:00 - 10:20 T4-1 Levels, profiles and distribution of brominated dioxins and furans from cement kilns co-processing municipal solid wastes Guorui Liu 10:20 - 10:40 T4-2 Sediment to water flux of persistent organic pollutants from contaminated fiber banks in the Baltic Sea A-K Dahlberg 10:40 - 11:00 T4-3 The effect of CB-209, CN-75 and BDE-209 Chemical Structure to Their Degradation Mechanisms over Fe <sub>3</sub> O <sub>4</sub> Micro/Nano Material Guijin Su 11:00 - 11:20 T4-4 CONTRIBUTION OF FIREWORKS AND OPEN BURNING IN SPANISH POPULAR CELEBRATIONS TO CHLORINATED AND BROMINATED POPs IN AIR J Muñoz-Arnanz 11:40 - 12:00 T4-6 INVESTIGATION AND REMEDIATION OF MULTIPLE PFAS SOURCE ZONES AT AN AIRPORT TO SAFEGUARD A WATER SUPPLY I. Ross	Junior Ballroom C
10:00	12:00	Session 5- Environmental Transport and Fate of POPs	10:00 - 10:20 T5-1 Dioxin degradation and metal biovolatilization at a former wood treating site Leslie Hardy 10:20 - 10:40 T5-2 Understanding the fate of semi-volatile organic pesticides in a glacier-fed lake using a multimedia chemical fate model KJ Hageman 10:40 - 11:00 T5-3 Organic and inorganic persistent pollutants monitoring: emission source identification M G Bonelli 11:00 - 11:20 T5-4 Release of Airborne Polychlorinated Biphenyls from New Bedford Harbor Results in Elevated Concentrations in the Surrounding Air A Martinez 11:20 - 11:40 T5-5 Contamination Profile of Perfluorinated Compounds (PFCs) in Ambient Water Surrounding a Major Producer in Central China Mehvish Mumtaz 11:40 - 12:00 T5-6 CONTRIBUTIONS OF DIOXINS AND FURANS TO THE URBAN SEDIMENT SIGNATURE: THE ROLE OF ATMOSPHERIC PARTICLES R Loyola	Junior Ballroom D
10:00	12:00	Session 6- From Science to Decision Making	10:00 - 10:20 T6-1 Science and policy developments for controlling chlorinated and brominated dioxins Shinichi Sakai 10:20 - 10:40 T6-2 Assessment of dioxin-like activity in food – implications for policy and regulation D N Mortimer 10:40 - 11:00 T6-3 Developing an Estuarine Planning Support System: An integrated tool to managing contaminated sediments in coastal and estuarine environments J Lonsdale 11:00 - 11:20 T6-4 Flame Retardants in Electronics Enclosures: Using Scientific Research to Prevent Unnecessary Health Risks AE Lindeman 11:20 - 11:40 T6-5 Application of the Theory of Sampling (TOS) on Unintentional produced POPs A Arkenbout 11:40 - 12:00 T6-6 The Class Concept: Improved Policy and Purchasing for Organohalogens A Blum	Parksville
12:00	13:00	Lunch & Exhibitions	Grand Ballroom Foyer Junior Ballroom Foyer	
13:00	14:20	Session 1- New Methods of Analysis	13:00 - 13:20 T1-7 Passive-sampler based Partitioning, Fluxes and Bioaccumulation of PBDEs in an Urban River R Lohmann 13:20 - 13:40 T1-8 Applying novel analytical approaches for the risk management and monitoring of water systems: Coupling passive sampling with non-target analytical tools Sarit Kaserzon 13:40 - 14:00 T1-9 Levels, Temporal trends of PCDDs/PCDFs at IPTD area using passive air sampler and correlation with active air sampling between 2012-2017 Trinh Khac Sau 14:00 - 14:20 T1-10 Evidence for High Concentrations and Maternal Transfer of Substituted Diphenylamines in European Eels Analyzed by GCxGC-TOF and GC-FTICR-MS R Suehring	Grand Ballroom AB

13:00	14:20	Session 2- Perfluoroalkyl Substances I	13:00 - 13:20 T2-7 Leaching of chemicals from the durable water repellence layer of textiles with aging J de Boer 13:40 - 14:00 T2-9 OCCURRENCE AND DISTRIBUTION OF PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFASs) IN MULTI-ENVIRONMENTAL MATRICES AROUND TWO FLUOROCHEMICAL MANUFACTURING PARKS IN FUXIN, CHINA Zhen Zhao 14:00 - 14:20 T2-10 Seasonal trends of per- and polyfluoroalkyl substances in river water - impact of hydrological conditions and contamination source types M. A. Nguyen	Grand Ballroom CD
13:00	14:20	Session 3- Contaminated Sites and Source Tracking	13:00 - 13:20 T3-7 Reconstruction of Historical 2,3,7,8-Tetrachlorodibenzodioxin Discharges from a Former Chemical Manufacturing Plant to the Lower Passaic River R. Parette 13:20 - 13:40 T3-8 245TCP – Perspectives on PCDD/Fs from a review of industrial processes and historical analysis, and fast forward to opportunities for the future. P Richards 13:40 - 14:00 T3-9 Analysis of PCB Congener Profiles in Tree Bark from Sauget, Illinois Glenn Johnson	Junior Ballroom AB
13:00	14:20	Session 4- Human Exposure to POPs	13:00 - 13:20 T4-7 BFR contamination in UK kitchen utensils: Implications for human exposure via transfer to cooking oil and direct dermal contact S Harrad 13:20 - 13:40 T4-8 Quantifying the Impact of Weight Changes on the Individual and Population Level on POP Concentrations in Humans F. Wania 13:40 - 14:00 T4-9 POLYBROMINATED DIPHENYL ETHERS, POLYCHLORINATED BIPHENYLS AND PERSISTENT PESTICIDES IN 7 AND 9 YEAR OLD CHILDREN AND THEIR MOTHERS IN THE CHAMACOS COHORT Andreas Sjodin 14:00 - 14:20 T4-10 Biomonitoring of dioxins and other chemicals in Japan — Summary of nation-wide survey during 2011–2016 T Isobe	Junior Ballroom C
13:00	14:20	Session 5- Environmental Transport and Fate of POPs	13:00 - 13:20 T5-7 Flame retardants accumulation in the paired egg and plasmas of bald eagle Marta Venier 13:20 - 13:40 T5-9 Transesterification can occur in natural and engineering aquatic environments: Taking parabens as an example Lei Wang 13:40 - 14:00 T5-10 Quantification of glassware-water partition constants and their impact on humic acid-water partition constants for super-hydrophobic organic contaminants V J Schacht	Junior Ballroom D
13:00	14:20	Session 6- POPs in Longitudinal Cohorts	13:00 - 13:20 T6-7 Hypertension and Persistent Organic Pollutants in the Anniston Community Health Survey Follow-up M Pavuk 13:20 - 13:40 T6-8 Total dioxin toxic equivalency is associated with altered serologic biomarkers of hepatic lipid metabolism, inflammation, fibrosis, and function in ACHS-II participants with suspected liver disease M Cave 13:40 - 14:00 T6-9 Positive associations between serum levels of dioxin-like pollutants and the cardiometabolic disease risk biomarker TMAO in residents of Anniston, Alabama MC Petriello 14:00 - 14:20 T6-10 PCB exposure and DNA methylation in the Anniston Community Health Survey D.A. Bell	Parksville

14:20	14:50	Poster Session V	<p>P121-A ORGANOPHOSPHATE FLAME RETARDANTS IN THE CANADIAN ARCTIC Liisa M Jantunen</p> <p>P122-A A Novel Cleanup Procedure for Determining Mono- to Deca-BDE in Lipophilic Matrices AA Shelepchikov</p> <p>P123-A Agent Orange in Viet Nam: Lessons Learned G Bruce</p> <p>P124-A Results of an inter-laboratory polyfluorinated alkyl substances (PFAS) study based on real world samples Michael Wilken</p> <p>P125-A OCCURRENCE OF SELECTED PESTICIDES IN CANADIAN HOUSE DUST Cariton Kubwabo</p> <p>P126-A Study on the Treatment of Micro-Polluted Source Water by Ozone/Ceramic Membrane Combined Process Yishuai Pan</p> <p>P127-A Toxicity Identification Evaluation of Dioxin-Related Compounds in Dust from End-of-Life Vehicle Recycling Sites in Northern Vietnam S Takahashi</p> <p>P128-E (Re)Emerging Halogenated Flame Retardants in Predator and Prey Fish From the Laurentian Great Lakes: Age-Dependent Accumulation and Trophic Transfer R.J. Letcher</p> <p>P129-E Organophosphate flame retardants and plasticizers in the atmosphere of Bohai and Yellow Seas Jing Li</p> <p>P130-E Development of an LC-MS/MS Analytical Method for Pesticides Takahiro NISHINO</p> <p>P131-E Can well-managed municipal solid waste incinerator be an environmental threat anymore?--a case study based on four consecutive year monitoring in Beijing L Qi</p> <p>P131-E Persistent Organic Pollutants (POPs) and emergent compounds (EC) in the marine food web of Central Chile: What is the influence of emergent pollutants such as Microplastics? K Pozo</p> <p>P133-E Dioxins in Lake Ontario: Is the Niagara River Watershed Still a Source of Contamination 50 Years later? D.A. Burniston</p> <p>P134-E Differences in the contamination by organohalogen compounds between coastal and oceanic populations of Sula leucogaster FBM Torres</p> <p>P135-E Historical changes in pulpmill-related dioxin contamination in coastal marine ecosystems of British Columbia, 1989 to 2015. ME Davies</p> <p>P136-E Structural basis of CB118 metabolism by bacterial cytochrome P450 monooxygenase and its mutants with perfluorocarboxylic acids E Goto</p> <p>P137-H Children's exposure to brominated flame retardants in indoor microenvironments Olga-Ioanna Kalantzi</p> <p>P138-H Comparison of Brominated and Phosphorus Flame Retardants (FR) in Human Breast Milk Samples of Japan Based FR Demands S Ohta</p> <p>P139-H Longitudinal Patterns of Early Life Exposure to PBDEs Whitney Cowell</p> <p>P140-R Short-Chain Chlorinated Paraffins (SCCPs), a Toxic Industrial Chemical Included for Global Prohibition, Contaminate Children's Toys P.K. Miller</p> <p>P141-R Human health risks related to the consumption of foodstuffs of plant and animal origin produced on a site polluted by chemical munitions of the First World War B Le Bizec</p> <p>P142-R PCDD/Fs in Waste Incineration Fly Ash L Bell</p> <p>P143-S Occurrence and potential sources of brominated/chlorinated dibenzo-p-dioxins in mussels from the Seto Inland Sea, Japan Akitoshi Goto</p> <p>P144-S Distribution and composition of brominated/chlorinated dioxins and diphenyl ethers in surface soil from Agbogbloshie, Ghana NM Tue</p> <p>P145-S Brominated catechols and guaiacols as possible sources of dihydroxylated PBDEs and hydroxylated dioxins in bivalves from Asia-Pacific Koichi Haraguchi</p>	Exhibit Hall
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14:30	15:05		Coffee Break	Exhibit Hall
15:05	16:25	Session 1 - New Methods of Analysis	<p>15:05 - 15:25 T1-11 A Quick, High Throughput, Low Solvent Extraction and DCM-Free Sample Clean Up for Same Day POPs Analysis - R Addnik</p> <p>15:25 - 15:45 T1-12 Thermal desorption GC/MS analysis method for PCBs in organic pigments 2 - T Nakano</p> <p>15:45 - 16:05 T1-13 An Analytical Method for Polycyclic Aromatic Hydrocarbons and their Derivatives in Fish Oil Derived from Grilled Fish M Masuda</p> <p>16:05 - 16:25 T1-14 Development and Application of a Simplified in vivo Test for Estimating Biotransformation Rate Constants of Organic Chemicals in Fish M DiMauro</p>	Grand Ballroom AB
15:05	16:25	Session 2- PCBs in Schools and Other Indoor Sources	<p>15:05 - 15:25 T2-11 Use of PCBs at World War II Manufacturing Sites WJ Shields</p> <p>15:25 - 15:45 T2-12 Comparison of Passive and Active Air Sampling (PAAS) Methods for PCBs – A Pilot Study in New York City Schools G Hunt</p> <p>15:45 - 16:05 T2-13 Airborne PCBs and OH-PCBs inside and outside urban and rural U.S. schools RF Marek</p> <p>16:05 - 16:25 T2-14 Current Approaches for Evaluating Potential Health Risks from Polychlorinated Biphenyls in Indoor School Air GM Lehmann</p>	Grand Ballroom CD
15:05	16:25	Session 3- Agent Orange in Vietnam	<p>15:05 - 15:25 T3-11 The Role of Scientific Studies in Addressing the Legacy of Agent Orange in Vietnam CR Bailey</p> <p>15:25 - 15:45 T3-12 Identification of Potential Dioxin Hotspots in Laos, with Comparisons to Vietnam S Hammond</p> <p>15:45 - 16:05 T3-13 DIOXIN CONCENTRATIONS IN FISH AND RESULTANT HUMAN HEALTH RISK IN BIEN HOA, VIET NAM T Boivin</p> <p>16:05 - 16:25 T3-14 Full-Scale Thermal Treatment of Agent Orange Dioxins at Danang Airport, Vietnam K Sorenson</p>	Junior Ballroom AB
15:05	16:25	Session 4- Human Exposure to POPs	<p>15:25 - 15:45 T4-12 Influence of the circulating lipids component and options for assessing the link between internal exposure to POPs and health: a compared approach applied to endometriosis German Cano-Sancho</p> <p>15:45 - 16:05 T4-13 INTEGRATED EXPOSURE, TOXICOLOGY AND EPIDEMIOLOGY STUDIES: ASSOCIATIONS OF DOSING AMOUNTS, INTERNAL DOSES, LIFE STAGE, AND SEX FOR NEUROTOXIC AND ENDOCRINE EFFECT CATEGORIES T. Muir</p> <p>16:05 - 16:25 T4-14 Urtrasonographic Examination (After59Years)of Yusho Victims Who Are Left Behind Reiko Takeda</p>	Junior Ballroom C
15:05	16:25	Session 5- Emerging Contaminants: Lessons Learned from Past, Current	<p>15:05 - 15:25 T5-11 How the Study of Dioxins led to Understanding a Key Regulatory Protein, the Ah Receptor L Birnbaum</p> <p>15:25 - 15:45 T5-12 The PFAS Story: Lessons from the Past for Environmental Chemistry C. A. Ng</p> <p>15:45 - 16:05 T5-13 Screening of Global Chemical Inventories for Substances with</p>	Junior Ballroom D

		Practices and Future Trends	Arctic Accumulation Potential D.C.G. Muir 16:05 - 16:25 T5-14 Hazardous compounds released from textiles L Lundin	
15:05	16:25	Session 6- Environmental Transport and Fate of POPs	15:05 - 15:25 T6-11 Peripubertal Serum Organochlorine Concentrations and Longitudinal Growth to Young Adulthood among Russian Boys J Burns 15:25 - 15:45 T6-12 Gene-Dioxin Interactions and Birthweight in the Seveso Second Generation Health Study J Ames 15:45 - 16:05 T6-13 DDT and PBDE exposure and obesity in CHAMACOS women M Warner 16:05 - 16:25 T6-14 Serum Polychlorinated Biphenyls and Leukocyte Telomere Length in a Highly Exposed Population: The Anniston Community Health Survey. LS Birnbaum	Parksville
16:30	17:00	Poster Session VI	P150-A Application of LC-Orbitrap HRMS with positive/negative ion-switching for analysis of Pharmaceutical and Personal Care Products (PPCPs) K-H Nguyen P151-A Examination of Commercial Samples of Perfluoroethylcyclohexane Sulfonate: Another Source of PFOS Isomers N Riddell P152-A Simultaneous determination of PCDD/Fs, Dioxin-like PCBs and Indicator PCBs in Food YoungWoon Kang P153-A Stakeholder Engagement and Capacity Building Training in Dioxin Remediation_Dioxin 2017_Short abstract form J Mason P154-A Development of the analytical method of for persistent organic pollutants (POPs) in serum using gas chromatography - negative ion chemical ionization mass spectrometry Akifumi Eguchi P155-A Automated, Low Background, Solid Phase Extraction of Perfluorinated Compounds, Pharmaceuticals, and Personal Care Products in Water Samples PM Germansderfer P156-A Participation in 2016 Inter-laboratory Study on Fish Tissue Reference Materials E Sandell P157-A Passive Sampling with GC-APCI-QToF for Target and Non-target Analyses of Halogenated Organic Contaminants in Wastewater and Natural Water X Zhang P158-A PCDD/F formation from 2,4,6- trichlorophenol added model fly ash Ishrat Mubeen P159-E The concentration of OCPs and PCBs in Oriental White Stork(Ciconia boyciana)Tissue Lin Zhu P160-E Identification and Evaluation of New Chlorinated Paraffin Classes in Environmental Matrices Lirong Gao P161-E The Investigation of the Organochlorine Pesticides Residues in Soil of Taiwan Yuan Cheng Hsu P162-E Distributions and Risk Assessment of Cyclic Volatile Methylsiloxanes in Surface Water Collected from Tokyo Bay Watershed in Japan Yuichi Horii P163-E Use of Passive Samplers to Monitor PCBs in the Effluent Water from a Waste Water Treatment Plant C. Brimacombe P165-E The occurrence of OCPs, PCBs, and PAHs in the soil, air, and particle deposition of provincial and metropolitan Naples areas, Italy: Implications for potential risk and environmental cycling Benedetto De Vivo P166-H Occurrence of organophosphate flame retardants in food and dietary intake estimation by the Belgian adult population G Poma P167-H Internal exposure of the U.K. population to Persistent Organic Pollutants D Drage P168-H A 5-year longitudinal follow up trend in levels of POP plasma concentrations extracted using a 96-well plate method J Stubleski	Exhibit Hall

		<p>P169-H Biomonitoring of Halogenated Organics and Metals in Residents of Rural Northern Vietnam A Schechter</p> <p>P169-R The bioaccessibility of polychlorinated biphenyls (PCBs) and polychlorinated dibenzo-p-dioxins/furans (PCDD/Fs) in cooked plant and animal origin foods Haitao Shen</p> <p>P170-R Evaluation of Treatment Possibility for Waste Containing Brominated Flame Retardants by Using Thermal Method Eunhye Kwon</p> <p>P171-R Evaluation of Treatment Possibility for Waste Containing Organic Chlorine-Based Pesticides by Using Thermal Method Jih wan son</p> <p>P172-S PCBs in Bottles Water and Water Storage Containers Including Teflon K Hope</p> <p>P173-S DIOXIN RESIDUE LEVEL IN DONG SON COMMUNE, A LUOI DISTRICT, IN MIDDLE REGION OF VIETNAM Nguyen Hung Minh</p> <p>P174-S Mechanochemical treatment of fly ash and de novo testing of milled fly ash Y Peng</p> <p>P175-T TRANSGENERATIONAL EFFECTS OF DI-(2-ETHYLHEXYL) PHTHALATE (DEHP) EXPOSURE ON SPERM FUNCTIONS IN MALE RATS Ping-Chi Hsu</p> <p>P176-T Tetrabromobisphenol A and 2,4,6-Tribromophenol Alter P-glycoprotein Activity in Rat Brain Microvessels G Knudsen</p>	
17:00	18:00	<p><b>Poster Social</b></p> <p><b>Sponsored by Waters</b></p>	Exhibit Hall



Wednesday 23<sup>rd</sup> August



Start	End		Title Presenter	Location
8:30	9:15	Plenary IV	<p align="center"><b>Science and Policy of POPs through Passive Air Sampling</b></p> <p align="center"><i>Tom Harner</i></p>	Grand Ballroom
9:15	9:45	Poster Session VII	<p>P178-A Rapid analysis of phthalate metabolites in human urine using a liquid chromatography-tandem mass spectrometer Xu Zhang</p> <p>P179-A DecaBDE might be associated with inhibition of thyroid hormone levels in serum of Japanese cats Kei Nomiyama</p> <p>P180-A Thermal desorption GC/MS analysis method for analysis of POPs in solid sample Hiroshi Takakuwa</p> <p>P181-A Analyte Loss in PFAS Analysis – Evidence from Labelled Internal Standard and Spiked non-Labelled PFAS Compound Recoveries and Interlaboratory Split Samples SF Gormley</p> <p>P182-A Novel method for simultaneous determination of perfluoroalkyl acids, parabens and cotinine from a low volume human serum sample P Ruokojärvi</p> <p>P183-A Poly- and Perfluoroalkyl Substances (PFAS) in AFFF-Impacted Groundwater Using Targeted and Non-Target Screening by High Resolution Mass Spectrometry with SWATH® Acquisition C Butt</p> <p>P184-A Fast and Reproducible Pesticide Residue Analysis in Minutes TG Hall</p> <p>P185-A INTERFLAB 2: Results of an interlaboratory comparison of novel halogenated flame retardants in test mixtures and indoor dust L Melymuk</p> <p>P188-E Sources of dietary contaminant exposure and relationships with pathogen prevalence in Atlantic walruses (<i>Odobenus rosmarus rosmarus</i>) from Svalbard, Norway SE Scotter</p> <p>P189-E Spatial Distribution of Polychlorinated Biphenyls in Air Considering Three Areas from the Metropolitan Region of São Paulo, Brazil JV de Assunção</p> <p>P190-E Regional Characteristics and Temporal Trends of Methylsiloxanes in the Atmospheric Environment, Saitama, Japan –Simultaneous Analysis for 20 Compounds– Yuichi Horii</p> <p>P191-E Characterization of polychlorinated biphenyls (PCBs) in indoor dusts from electricity power stations in Lagos, Nigeria M Abdallah</p> <p>P192-E A major latex-like protein is a determinative factor for contamination of persistent organic pollutants in Cucurbitaceae family H Inui</p> <p>P193-E Review of the worldwide concentrations of medium-chain chlorinated paraffins (MCCP) in environmental samples and biota Juliane Glüge</p> <p>P194-E Crucial steps for crop contamination by persistent organic pollutants in Cucurbitaceae family M Suwa</p> <p>P196-H Associations between changes in serum levels of perfluoroalkyl substances (PFASs) and changes in serum lipids over 10-years in a longitudinal cohort study Linda Dunder</p> <p>P197-H The cohort study on relation of dioxin levels in breast milk with steroid hormone concentrations from three to seven-year-old Vietnamese children T Kido</p> <p>P199-H The long-term consequences of herbicides and defoliant used in Vietnam during the war time Nguyen Thi Ngoc Phuong</p> <p>P200-H Exposure of Polybrominated Diphenyl Ethers, Polychlorinated</p>	Exhibit Hall

			<p>Biphenyls, and Pesticides in the Anniston Community Health Survey Follow-up L Birnbaum</p> <p>P201-R Brominated flame retardants at the farm scale: outputs of the French project "BRAVIPORC" (2013–2016) Alexis Léon</p> <p>P202-S Occurrences of Perfluoroalkyl Substances and Their Total Oxidisable Precursors Assay in Aquatic Biota in Thailand, Vietnam and Japan Y Suzuki</p> <p>P203-S Contamination Status of Dioxin in the sediment of Indus River and Coastal Environment of Pakistan Nuzhat Khan</p> <p>P205-T Protein and metabolite responses in rainbow trout (<i>Oncorhynchus mykiss</i>) exposed to TBBPA-DBPE DBD Simmons</p> <p>P206-T Source Apportionment of Hazardous Composition and In Vitro Cytotoxicity Test of Fine Particulate Matter (PM2.5) at Different Area in Taiwan Wen Xuan Huang</p>	
9:45	10:00		Coffee Break	Exhibit Hall
10:00	12:00	Session 1- Non-target Screening and Determination	<p>10:00 - 10:20 W1-1 Non-target and suspect screening of organic chemicals in indoor dust from five countries P. Leonards</p> <p>10:20 - 10:40 W1-2 Using hair for biomonitoring studies: analytical challenges to be addressed Jana Hajslova</p> <p>10:40 - 11:00 W1-3 Characterization of pyrogenic polycyclic aromatic hydrocarbons and other organic compounds generated in an uncontrolled tire landfill fire L. Ramos</p> <p>11:00 - 11:20 W1-4 Screening halogenated contaminants in the marine environment based on high resolution mass spectrometry profiling Alexis Léon</p> <p>11:20 - 11:40 W1-5 Characterization of POPs in California Condors using Comprehensive Two-Dimensional Gas Chromatography (GCxGC) with High Resolution Time of Flight Mass Spectrometry and Novel Spectral Analysis Tools DE Alonso</p> <p>11:40 - 12:00 W1-6 High resolution accurate mass LC/MS, chemometrics and statistical analysis for the identification of emerging organic contaminants of significance in Water M Kim</p>	Grand ballroom AB
10:00	12:00	Session 2- Perfluoroalkyl Substances II Sponsored by Wellington Laboratories	<p>10:00 - 10:40 W2-1,2 The Importance of Aqueous Film Forming Foam (AFFF)-derived Poly- and Perfluoroalkyl substances (PFASs) as Drinking Water Contaminants Chris Higgins</p> <p>10:40 - 11:00 W2-3 Analytical assessment of perfluoroalkyl and polyfluoroalkyl surfactants in firefighting foam impacted soils J. Liu</p> <p>11:00 - 11:20 W2-4 Influence of a commercial sorbent on the leaching behaviour and bioavailability of selected perfluoroalkyl acids (PFAAs) from soil impacted by AFFF J Braeunig</p> <p>11:20 - 11:40 W2-5 Evaluation of the Removal Efficiency of Per- and Polyfluoroalkyl Substances in Drinking Water L Ahrens</p> <p>11:40 - 12:00 W2-6 New Proposal of International Standard of Poly and Per-Fluorinated Alkyl Substances (PFASs) Measurements in Water Samples S Taniyasu</p>	Grand Ballroom CD

10:00	12:00	Session 3- Remediation, Best Available Techniques/Best Environmental Practices I	10:00 - 10:20 W3-1 Regulated Brominated Flame Retardants in Irish Waste Plastics: Obstacles to the Circular Economy D Drage 10:20 - 10:40 W3-2 Catalytic degradation of Polybrominated Diphenyl Ethers (PBDEs) in the effluent gas during a novel thermal desorption process Long Zhao 10:40 - 11:00 W3-3 Evaluation of Treatment Possibility for Waste Containing Chlorine-Based Flame Retardant by Using Thermal Method Younsam Yoon 11:00 - 11:20 W3-4 Strategies for the mechanochemical destruction of POP stockpiles and POP contaminated wastes Giovanni Cagnetta 11:20 - 11:40 W3-5 Validation of a PCDD /Fs long-term emission sampling system at a large sinter plant for assessment of compliance to permitted Emission Limit Values V Esposito	Junior Ballroom AB
10:00	12:00	Session 4- General – Environmental Levels of POPs	10:00 - 10:20 W4-1 Dechlorane Plus in Surface Soil of North China: Levels, Isomer Profiles, and Spatial Distribution Jin Ma 10:20 - 10:40 W4-2 Polychlorinated hydroxybornanes - metabolites of toxaphene in livers of polar bears (Ursus maritimus) W Vetter 10:40 - 11:00 W4--3 Environmental impact of biomass and polyethylene waste co-firing: emissions of particulate matter, PCDD/Fs and DL-PCBs S Mosca 11:00 - 11:20 W4-4 Chlorinated persistent organic pollutants in blood serum of New Zealand adults, 2011-2013 J Coakley 11:20 - 11:40 W4-5 UNDERSTANDING FATE AND TRANSPORT OF PFAS TO DEVELOP EFFECTIVE CONCEPTUAL SITE MODELS I. Ross 11:40 - 12:00 W4-6 BAT AND BEP IMPLEMENTATION TO REDUCE PCDD/PCDFs EMISSIONS IN ESEA COUNTRIES: TECHNOLOGY SELECTION AND MONITORING RESULTS Carmela Centeno	Junior Ballroom C
10:00	12:00	Session 5- Persistent Organic Pollutants (POPs) and Emerging Contaminants in Developing Countries I	10:00 - 10:20 W5-1 Persistent Organic Pollutants in Core Sediments of Indian Sundarban Mangrove Wetland (a UNESCO World Heritage Site) Santoshkumar Sarkar 10:20 - 10:40 W5-2 HISTORIC PCB RECORDS IN A SEDIMENT CORE FROM AN ESTUARINE WETLAND IN THE RIO DE LA PLATA, ARGENTINA J.C. Colombo 10:40 - 11:00 W5-3 POPs in Mytilus californianus from coast and islands off Baja California, Mexico. J. Vinicio Macías-Zamora 11:00 - 11:20 W5-4 Legacy Organochlorine Pesticides and Methylmercury in Amazon Catfish (ageneiosus brevifilis): Risk Assessment for Riverside People FBM Torres 11:20 - 11:40 W5-5 Organochlorine Pesticides (OCPs) in commercial fish from Guanabara Bay of Rio de Janeiro State, Brazil JPM Torres 11:40 - 12:00 W5-6 What wild bird eggs tell us about persistent organic pollutants in South Africa? CR Swiegelaar	Junior Ballroom D

10:00	12:00	Session 6- Neurotoxicity of Legacy and Emerging Persistent Organic Pollutants	<p>10:00 - 10:20 W6-1 Extended Structure–Activity Relationship of PCBs Evaluates and Supports Modeling Predictions and Identifies Picomolar Potency Towards Ryanodine Receptors Isaac Pessah</p> <p>10:20 - 10:40 W6-2 Neurotoxicity of Legacy and Emerging Persistent Organic Chemicals: A Proteomic Approach to Understand Adverse Outcome Pathways PRS Kodavanti</p> <p>10:40 - 11:00 W6-3 Altered neocortical circuitry in mice exposed perinatally to polybrominated diphenyl ethers MC Curras-Collazo</p> <p>11:00 - 11:20 W6-4 Silent Developmental Neurotoxicity and mTOR Signaling A. Suvorov</p> <p>11:20 - 11:40 W6-5 Comparative developmental and neurotoxicity of Replacement Organophosphate Flame Retardants with Polybrominated Diphenyl Ethers using in vitro and complementary models Mamta Behl</p> <p>11:40 - 12:00 W6-6 Integrative approach to developmental neurotoxicity induced by low-dose perinatal exposure to industrial chemicals C Tohyama</p>	Parksville
13:00	16:30	Vancouver City Tour	<p>Delegates who have booked a tour will gather in the lobby of the Sheraton Wall Centre (North Tower) at 12:45 pm.</p> <p>Tour will leave promptly at 1:00pm.</p>	Hotel Lobby

Thursday 24<sup>th</sup> August



Start	End		Title Presenter	Location
8:30	9:15	Plenary V	<p align="center"><b>The role of environmental chemicals in obesity</b></p> <p align="center"><i>J Legler</i></p>	Grand Ballroom
9:15	9:45	Poster Session VIII	<p>P207-A MAXIMIZED PRODUCTIVITY FOR DIOXIN, PCBs and PBDE ANALYSIS USING DUALDATA MODE WITH MAGNETIC SECTOR GC-HRMS H Mehlmann</p> <p>P208-A Temporal Trends of Per- and Polyfluoroalkyl Substances in Baltic Cod L Schultes</p> <p>P209-A Short- and medium-chain chlorinated paraffins-The blank issue A Borgen</p> <p>P210-A New methodologies for the analysis of halogenated persistent organic pollutants using GC-Q-Orbitrap N. Cortés-Francisco</p> <p>P211-A Development and validation of GC×GC–MS/MS method for the determination of PCDD/Fs and dl-PCBs in human serum jingguang li</p> <p>P212-A A Greener, Faster and Highly Automated Sample Cleanup Approach For Dioxin and POPs Analysis Li Shen</p> <p>P214-A Study on Dioxin Concentration Characteristics in Residential, Commercial and Industrial Areas Bong Ho Yun</p> <p>P215-E Maternal transfer and body distribution of legacy and emerging brominated flame retardants in finless porpoises (<i>Neophocaena phocaenoides</i>) collected from Korean coastal waters Bit-Na Gu</p> <p>P216-E Levels and profiles of legacy and emerging PFRs in car dust from Greece A Covaci</p> <p>P217-E Combination of Total organofluorine analysis (TOF) and total oxidizable precursor (TOP) assay for unidentified PFAS Leo W.Y. Yeung</p> <p>P218-E Source Analysis of Dioxins in River Water using Non-negative Matrix Factorization Nobutoshi Ohtsuka</p> <p>P219-E Levels and compositions of Perfluorinated chemicals in muscle tissues of Antarctic toothfish (<i>Dissostichus mawsoni</i>) Inseok Lee</p> <p>P220-E Levels of PFOS and the other perfluorinated organic compounds in Polish inland waters and Baltic Sea coastal waters I Wójcik</p> <p>P221-E Atmospheric Occurrence of PAHs in Antarctica using XAD-2 resin based Passive Air Samplers J.-H. Kang</p> <p>P222-E Levels of heavy metals and their possible health risks from consumption of fish and fishery products in Korea, 2010 to 2016 Sungyong Kim</p> <p>P223-E The impact of the different fertilization on the soil contamination by organic pollutants Jana Pulkrabova</p> <p>P224-E Assessment of Polychlorinated Biphenyls (PCBs) in some foods commonly consumed in Nigeria A A Adeyi</p> <p>P225-E Quantitative Assessment of the Transport of PCBs Emitted from Chicago’s PCB Inventory to Lake Michigan A Martinez</p> <p>P226-H Dietary exposure to polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans and polychlorinated biphenyls of the French population: Results of the French infant Total Diet Study B Le Bizec</p>	Exhibit Hall

			<p>P227-H ASSESSEMENT OF DIOXIN IN SELECTED FOOD ITEMS AND MOTHER MILK FROM COMMUNITIES NEAR AGENT ORANGE HOT SPOT IN DA NANG AIRBASE AND SUGGESTION TO REDUCE THE DIOXIN EXPOSURE TN Tam</p> <p>P228-H Ultrasonographic Examinations (After 59 Years )of Yusho Victims Who Are Left Behind Reiko Takeda</p> <p>P229-R An Evaluation of Underlying Assumptions and Decisions In Deriving TCDD's Reference Dose: Scientifically Supportable Alternative RfD Values R.A. Budinsky</p> <p>P230-R Hazardous chemicals in packaging materials: A downside of recycling? M Abdallah</p> <p>P231-S Modeling the Formation of 2,3,7,8-Tetrachlorodibenzodioxin in the Historical Manufacture of 2,4,5-Trichlorophenol R. Parette</p> <p>P232-S Oxidative degradation of polybrominated diphenyl ethers over LiTiOx micro/nano material Q Li</p> <p>P233-S Suppression of PCDD/F during municipal solid waste incineration by S-N-containing compounds Xiaoqing Lin</p> <p>P234-T Perfluorooctanesulfonate (PFOS) activates mast cell-mediated allergic reaction YJ Lee</p> <p>P235-T Potential PCB toxicity to wild bird embryos CR Swiegelaar</p>	
9:45	10:00	Coffee Break		Exhibit Hall
10:00	12:00	Session 1- Ecotoxicology	<p>10:00 - 10:20 R1-1 Interactions of climate change and contaminants on the endocrinology and behaviour of seabirds at their southern range limits in the Canadian Arctic K Fernie</p> <p>10:20 - 10:40 R1-2 Early-life exposure to a current-use flame retardant in Japanese quail: Effects on the thyroid system, growth, metabolic rate, and behaviour MF Guigueno</p> <p>10:40 - 11:00 R1-3 The importance of age when studying persistent organic pollutants in white-tailed eagle nestlings M. E Løseth</p> <p>11:00 - 11:20 R1-4 Plasma proteomics provides a retrospective glimpse into the recovery of fish health in Jackfish Bay, Lake Superior DBD Simmons</p> <p>11:20 - 11:40 R1-5 The biological effects of the anti-sea lice chemotherapeutant Salmosan on the Pacific spot prawn, <i>Pandalus platyceros</i> K Mill</p> <p>11:40 - 12:00 R1-6 Aquatic toxicity of 2,4,6-Tribromophenol C Koch</p>	Grand Ballroom AB
10:00	12:00	Session 2- Total Fluorine Analysis and Total Oxidisable Precursor (TOP) Assay with Special Reference to PFAS and Their Alternatives	<p>10:00 - 10:20 R2-1 Mass balance analysis of organofluorine in sewage samples from Swedish Wastewater treatment plants Leo W.Y. Yeung</p> <p>10:20 - 10:40 R2-2 Validation and Application of a Standards-Enhanced Total Oxidizable Precursor Assay B Chandramouli</p> <p>10:40 - 11:00 R2-3 Closing the PFAS Mass Balance: The Total Oxidizable Precursor (TOP) Assay K Buechler</p> <p>11:00 - 11:20 R2-4 Non-Target Analysis of Ambient Air Using Cryogenic Air Sampler N Yamashita</p> <p>11:20 - 11:40 R2-5 Detection of ultra-short chain perfluoroalkyl substances in Swedish environmental waters IE Jogsten</p> <p>11:40 - 12:00 R2-6 Novel PFAS Alternatives PFECAs and PFESAs: Environmental Occurrence in Worldwide Surface Water Y Pan</p>	Grand Ballroom CD

10:00	12:00	Session 3- Remediation, Best Available techniques/Best Environmental Practices II	<p>10:00 - 10:20 R3-1 Exploratory study on removal of perfluorinated and polyfluorinated alkyl substances from stormwater in rain garden utilizing activated carbon produced from sewage sludge LY Li</p> <p>10:20 - 10:40 R3-2 Perfluorooctanoic acid (PFOA) degradation in sewage sludge using microwave assisted persulfate oxidation H Hamid</p> <p>10:40 - 11:00 R3-3 Source Apportionment of Atmospheric Polycyclic Aromatic Hydrocarbons (PAHs) in PM2.5 at Different Area in Taiwan Hsin Yu Yang</p> <p>11:00 - 11:20 R3-4 In Situ Chemical Oxidation for Remediation of PFASs in Groundwater Thomas Bruton</p> <p>11:20 - 11:40 R3-5 HUMAN HEALTH RISK ASSESSMENT OF DIOXIN FROM SOIL CONTAMINATION IN A LUOI DISTRICT IN MIDLE REGION OF VIETNAM Terry Grim</p> <p>11:40 - 12:00 R3-6 Combined Use of Soil Washing and Incineration for Remediation of Dioxin Contaminated Soils in Southern Vietnam Mitsuo Mouri</p>	Junio Ballroom AB
10:00	12:00	Session 4- Metabolomics and Systems Biology in POPs Toxicity Studies	<p>10:00 - 10:20 R4-1 Use of a proteomics chip to discover mechanisms of actions for different polychlorinated biphenyls in humans L Lind</p> <p>10:20 - 10:40 R4-2 Non-Targeted Metabolomic Profiling to Study Possible Metabolic Effects of PFASs in a Population-based Study S Salihovic</p> <p>10:40 - 11:00 R4-3 Metabolome analyses reveal a distinctive metabolomic signature in mice ancestrally exposed to TBT Daniel Zalko</p> <p>11:00 - 11:20 R4-4 Developmental neurotoxic effects of pesticides, MeHg, and PFHxS combining behavior studies in mice with metabolomic pathway analysis P Leonards</p> <p>11:20 - 11:40 R4-5 Deciphering metabolic modulations induced by pollutants using computational biology and omics approaches Fabien Jourdan</p> <p>11:40 - 12:00 R4-6 A Multi-omic Approach to the Analysis of Organism Responses to Great Lakes Sediment, Effluent and Surface Waters Containing Persistent Organic Pollutants B Chandramouli</p>	Junior Ballroom C
10:00	12:00	Session 5- Persistent Organic Pollutants (POPs) and Emerging Contaminants in Developing Countries II	<p>10:00 - 10:20 R5-1 PBDEs STATUS OF SOUTHERN GROUND-HORNBILL (BUCORVUS LEADBEATERI) AND WATTLED CRANE (BUGERANUS CARUNCULATUS) IN SOUTH AFRICA P Daso</p> <p>10:40 - 11:00 R5-3 Characteristics of ambient PCDD/Fs measured in a tropical city during rainy season Nguyen Duy Dat</p> <p>11:00 - 11:20 R5-4 Air and soil levels of pesticides in an agricultural community in Chile S. Cortés</p> <p>11:20 - 11:40 R5-5 A First Report of Perfluoroalkyl Substances (PFASs) In A Large West Flowing River In Southern India K Balakrishna</p> <p>11:40 - 12:00 R5-6 New and emerging POPs in the Group of Latin America and Caribbean (GRULAC) Region C Rauert</p>	Junior Ballroom D

10:00	12:00	Session 6- Spatial and Temporal Trends of POPs in Abiotic Compartment	10:00 - 10:20 R6-1 Spatial and Temporal Trends of POPs in Abiotic Compartments: An Overview Bommana Loganathan 10:20 - 10:40 R6-2 Methodology for Comprehensive Non-Target Screening and Time Trend Analysis of Sewage Sludge C Veenaas 11:00 - 11:20 R6-4 VERTICAL DISTRIBUTION OF DIOXIN AND FURANS (PCDD/F) IN COLIUMO BAY SEDIMENTS, BIO BIO REGION. CENTRAL CHILE. Marco Salamanca 11:20 - 11:40 R6-5 Distribution and profiles of polybrominated diphenyl ethers (PBDEs), hexabromocyclododecanes (HBCDs) and non-PBDE brominated flame retardants in sediment from Ulsan and Onsan Bay in Korea Hyun-Kyung Lee 11:40 - 12:00 R6-6 Poly- and Perfluoroalkyl Substances (PFASs) in Seawater and Plankton from the Northwest Atlantic Margin X Zhang	Parksville
12:00	13:00	Lunch & Exhibitions		Grand Ballroom Foyer Junior Ballroom Foyer
13:00	14:20	Session 1- Alternate Flame Retardants: Environmental Presence, Fate and Exposure	13:00 - 13:20 R1-7 Urinary biomonitoring of organophosphate flame retardants in Japanese children and correlations with house dust concentrations A Covaci 13:20 - 13:40 R1-8 Assessing Children's Exposure to Emerging Flame Retardants in North Carolina A. L. Phillips 13:40 - 14:00 R1-9 Screening of organic flame retardants in Swedish rivers J Gustavsson	Grand Ballroom AB
13:00	14:20	Session 2- Short and Medium Chain Chlorinated Paraffins	13:00 - 13:20 R2-7 Global emission estimates for short-chain chlorinated paraffins based on their reported production and use volumes Juliane Glüge 13:20 - 13:40 R2-8 Baking ovens are a relevant source of medium-chain chlorinated paraffins (MCCPs) in household kitchens W Vetter 13:40 - 14:00 R2-9 The CP/CO problem: Three methods to resolve severe mass interferences of chlorinated paraffins (CPs) and chlorinated olefins (COs) L Schinkel 14:00 - 14:20 R2-10 Detection and Quantification of Chlorinated Paraffins in Food Samples using GC-Orbitrap Mass Spectrometry K Kraetschmer	Grand Ballroom CD
13:00	14:20	Session 3- Polycyclic Compounds	13:00 - 13:20 R3-7 Multiple lines of evidence for PAH fingerprinting and source apportionment of crude oil spills C. Sandau 13:20 - 13:40 R3-8 PAHs depositions in the environment of a waste incinerator A Arkenbout 13:40 - 14:00 R3-9 Concentration, distribution and gas/particle partitioning of atmospheric PAHs in rural, urban and industrial sites of northern Taiwan Nguyen-Duy Dat 14:00 - 14:20 R3-10 METHOD DEVELOPMENT FOR QUANTITATION OF POLYCYCLIC AROMATIC HYDROCARBONS AND THEIR ALKYLATED CONGENERS IN ORGANIC TISSUE BY TWO-DIMENSIONAL GAS CHROMATOGRAPHY HIGH RESOLUTION TIME OF FLIGHT MASS SPECTROMETRY I Idowu	Junior Ballroom AB



13:00	14:20	Session 4- POPs in the Arctic	<p>13:00 - 13:20 R4-7 Highlights from the new AMAP Assessment report on Chemicals of Emerging Arctic Concern C.A. de Wit</p> <p>13:20 - 13:40 R4-8 Atmospheric Transport and Deposition of Bromoanisoles Along a Temperate to Arctic Gradient T.F. Bidleman</p> <p>13:40 - 14:00 R4-9 Persistent organic pollutants in two species of white-blooded Antarctic fish M Zennegg</p> <p>14:00 - 14:20 R4-10 Persistent Organic Pollutants and Chemicals of Emerging Concern in Canadian Arctic Air H. Hung</p>	Junior Ballroom C
13:00	14:20	Session 5- Persistent Organic Pollutants (POPs) and Emerging Contaminants in Developing Countries II	<p>13:00 - 13:20 R5-7 SPATIAL AND TEMPORAL VARIATIONS IN THE ATMOSPHERIC CONCENTRATIONS OF POLYCHLORINATED BIPHENYLS IN KUWAIT. B Gevao</p> <p>13:20 - 13:40 R5-8 ENVIRONMENTAL BURDENS FOR NEW POPS AND THEIR ALTERNATIVES IN THE GRULAC REGION K Pozo</p> <p>13:40 - 14:00 R5-9 TRICLOSAN DETECTION IN WATER USING nZnO IMMOBILIZED ONTO CARBON ELECTRODE WITH MULTIWALLED CARBON NANOTUBE OJ Okonkwo</p> <p>14:00 - 14:20 R5-10 ESTIMATED QUANTITIES OF POLYCHLORINATED DIBENZO-P-DIOXINS AND POLYCHLORINATED DIBENZOFURANS RELEASES IN GHANA S Adu-Kumi</p>	Grand Ballroom AB
13:00	14:20	Session 6- Exposure to POPs in Urban, Indoor and Workplace Environments	<p>13:00 - 13:20 R6-7 Human exposure to legacy and emerging halogenated flame retardants via inhalation and dust ingestion in a Norwegian cohort Joo Hui Tay</p> <p>13:20 - 13:40 R6-8 Assessment of PCB levels in serum from Iowa, USA construction workers RF Marek</p> <p>13:40 - 14:00 R6-9 Indoor contamination in a former PCB-manufacturing region of Slovakia L Melymuk</p> <p>14:00 - 14:20 R6-10 Indoor Sources of and Human Exposure to Brominated Flame Retardants (BFRs), Organophosphate Esters (OPEs), and Phthalate Esters (PAEs) C Yang</p>	Parksville
14:20	14:50	Poster Session IX	<p>P236-A Detection of wood preservatives in soil using AIQS target screening method from debris storage areas of the 2016 Kumamoto Earthquake, Japan Daisuke Ueno</p> <p>P237-A ASSESSMENT OF THE AUTOMATED CLEAN-UP SYSTEM DEXTech + FOR DETERMINATION OF PBDEs ALONG WITH PCDD/Fs AND PCBs IN ENVIRONMENTAL SAMPLES J Muñoz-Arnanz</p> <p>P238-A Screening for Dioxin-Like Compounds in Sediment Using Modified QuEChERS and a GC-TOF Mass Spectrometer with Atmospheric Pressure Chemical Ionization L Haimovici</p> <p>P239-A Determination of short chain chlorinated paraffins (SCCPs) in commercial chlorinated paraffins (CPs) products using comprehensive two-dimensional gas chromatography coupled with tandem mass spectrometry Yun Zou</p> <p>P240-A Atmospheric Concentrations of Synthetic Musks in Canada F Wong</p> <p>P242-A Characterizing Additional Compounds When Evaluating Source Contribution of PCBs Rock Vitale</p> <p>P243-E Bioaccumulation of persistent halogenated organic pollutants in insects: Metamorphosis significantly alters pollutant pattern in a common way for different insects Xiao-Jun Luo</p> <p>P244-E ANALYSIS ON GLOBAL DISTRIBUTION AND ENVIRONMENTAL IMPACTS OF DBDPE IN ELECTRICAL AND ELECTRONIC PRODUCTS FROM</p>	Exhibit Hall

			<p>CNIHA K.H Shen</p> <p>P245-E Size-resolved gas-particle partitioning for polybrominated diphenyl ethers Pengtuan Hu</p> <p>P246-E Development of sediment certified reference material for PCDD/Fs analysis G Zhao</p> <p>P247-E PCDD, PCDF and PCB monitoring in São Paulo City (Brazil) using passive air sampler as part of the Global Monitoring Plan MY Tominaga</p> <p>P248-E Pre-Feasibility Study on Environmental Photolysis of p,p'-DDT and ?-HCH N Hanari</p> <p>P250-E Preliminary Assessment of New POPs in the Air of Sao Paulo City, Brazil JV De Assuncao</p> <p>P251-E Passive sampling of POPs in the Black Sea K Okonski</p> <p>P252-E Levels of PFOS and the other perfluorinated organic compounds in Polish inland waters and Baltic Sea coastal waters I Wójcik</p> <p>P253-H Maternal Perinatal Serum PFASs and Daughter's Breast Cancer Barbara Cohn</p> <p>P254-H Time Trend and Spatial Distribution of Polybrominated Biphenyl Ethers and Polychlorinated Biphenyls in Human Milk from China under the Stockholm Convention Jingguang Li</p> <p>P255-H The long-term consequences of herbicides and defoliants used in Vietnam during the war time Tran Ngoc Tam</p> <p>P256-R Evaluation of Treatment Possibility for Waste Containing Perfluorinated Compounds by Using Thermal Method Jisu Bae</p> <p>P257-R Analysis of BFRs and dioxins and dioxin-like PCBs on a dual column GC-MS/MS system Masato Takakura</p> <p>P259-S Thermal Treatment Experiments of Solid Waste Containing Decabromodiphenyl Ether-treated Fabric using a Pilot-scale Incinerator N Kajiwara</p> <p>P260-T SIGNALING PATHWAYS ASSOCIATED WITH PFC-INDUCED APOPTOSIS OF NEURONAL CELLS JH YANG</p> <p>P261-T Characteristics of PCB congeners accumulated in Yusho patients and estimation of their cytochrome P450-dependent metabolism by in silico docking simulation S Hirakawa</p> <p>P262-T ENUMERATION OF THE CONSTITUTIONAL ISOMERS OF SUBSTITUTED POLYCYCLIC AROMATIC COMPOUNDS W Johnson</p> <p>P263-T First Steps Towards Characterization of Halogenated Alkene Flame Retardants D.C.G. Muir</p> <p>P264-T Application of bioinformatics as a tool for understanding the remediation of persistent organic pollutants Z Basharat</p>	
14:50	15:05	Coffee Break		Exhibit Hall

15:05	15:35	Poster Session X	<p>P265-A Selective extraction of estrogens in water samples using a nano grafted membrane with molecular imprinted polymer P. Fernandez</p> <p>P266-A Development of Cherry tomato Analytical Reference Material For Proficiency test of Pesticide Residue Analysis Su-Myeong Hong</p> <p>P267-A Domestic cats as sentinels for PFAS exposure JL Reiner</p> <p>P268-A Method Development of a 2-Dimensional Liquid Chromatography High Resolution Mass Spectrometry Method for The Analysis of Organophosphorus Flame Retardants in Water Samples L Mullin</p> <p>P269-A Extended Abstract - Simultaneous determination of 10 types of per- and polyfluoroalkyl substances with wide range of pKa values in human serum without pretreatment Ke Gao</p> <p>P270-A Eco-toxicological evaluation of 4-nonylphenol diastereomers with delayed luminescence in the green alga <i>Pseudokirchneriella subcapitata</i> Koji Arizono</p> <p>P271-A High Accurate Analysis of Organochlorine Pesticides and Polychlorinated Biphenyls Using Triple Quadrupole GC-MS/MS R Kitano</p> <p>P272-E Organohalogen contaminants in common loons (<i>Gavia immer</i>) breeding in western Alberta, Canada T.M. Brown</p> <p>P273-E Simultaneous Removal of PCDD/Fs, PCP and Mercury from Contaminated Sediment via Pyrolysis Moo-Been Chang</p> <p>P273-E Alternative Flame Retardants in House Dust Collected from Residential Houses and Kindergartens in Japan M Furukawa</p> <p>P274-E Quantitative Analysis of HBCD Diastereomers in Technical HBCD Mixtures using UPLC-MS/MS Song-Yee Baik</p> <p>P275-E Trends of selected POP concentrations in Japanese air: a panel data analysis Nguyen Thanh Dien</p> <p>P276-E Neutral and Ionic Per- and Polyfluoroalkyl Substances (PFASs) in the Atmosphere: Occurrence and Distribution Associated with Particulate Matter Yiming Yao</p> <p>P277-E Distribution and transport of perfluoroalkyl and polyfluoroalkyl substances in the lower atmosphere and surface waters of the Chinese Bohai Sea, Yellow Sea, and Yangtze River Estuary Zhen Zhao</p> <p>P278-E Distribution and levels of polybrominated diethyl ethers (PBDEs) in sediment and biota of Lagos Lagoon, Nigeria Adebola A Adeyi</p> <p>P282-R Developing a standardized assessment protocol for potentially polluting wrecks J Lonsdale</p> <p>P284-R Relative potency of polychlorinated naphthalene (PCN) to 2,3,7,8-TCDD in in vitro reporter gene assay with rat hepatoma cell line Go Suzuki</p> <p>P285-S Effects of activated carbon injection on emission characteristics and relationship between PCDD/Fs and chlorobenzenes from a municipal solid waste incinerator in China TJ Wang</p> <p>P286-S OCCURRENCE OF PAHs IN AIR SURROUNDING A COAL-FIRED THERMAL POWER PLANT IN SOUTH-WEST COAST OF INDIA Minal Gune</p> <p>P287-T Decabromodiphenyl Ether (BDE-209) and Ultrasonic Vocalization in rat pups H Wada</p> <p>P288-T Identification of compounds in WAF extract to induce DNA damage to flat fish according to polarity and Kow. Hyojin Lee</p>	Exhibit Hall
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15:35	16:55	Session 1- Capacity Building in Developing Countries	<p>15:35 - 15:55 R1-11 Bi-ennial Global Interlaboratory Assessment on Persistent Organic Pollutants – Third Round 2016/2017, Dioxin-like POPs and Perfluorinated Alkyl Substances H. Fiedler</p> <p>15:55 - 16:15 R1-12 Bi-ennial Global Interlaboratory Assessment on Persistent Organic Pollutants – Third Round 2016/2017, Organochlorine Pesticides, PCBs and Brominated Flame Retardants J de Boer</p> <p>16:15 - 16:35 R1-13 From e-Waste Smelting Processes to the Implementation of CALUX Bioassay E. M. Coyanis</p>	Grand Ballroom AB
15:35	16:55	Session 2- Short and Medium Chain Chlorinated Paraffins	<p>15:35 - 15:55 R2-11 Medium-chain and long-chain chlorinated paraffin products predominate in Swedish coastal sediment cores over the past 50 years C.A. de Wit</p> <p>15:55 - 16:15 R2-12 Interlaboratory Study On The Analysis of Short Chain Chlorinated Paraffins L.M. van Mourik</p> <p>16:15 - 16:35 R2-13 Short-Chain Chlorinated Paraffins (SCCPs), a Toxic Industrial Chemical Included for Global Prohibition, Contaminate Children’s Toys P.K. Miller</p> <p>16:35 - 16:55 R2-14 Characterization of placental transfer of short- and medium-chain chlorinated paraffins in paired maternal and cord serum Lin Qiao</p>	Grand Ballroom CD
15:35	16:55	Session 3- Polycyclic Compounds	<p>15:35 - 15:55 R3-11 Determination of polycyclic aromatic hydrocarbons in surface water using a simplified liquid-liquid micro-extraction and pseudo-MRM GC/MS/MS M Kim</p> <p>15:55 - 16:15 R3-12 Congener-Specific Characterization of Polychlorinated Naphthalenes in Soil surrounding a Secondary Copper Metallurgical Facility: Indication Multiple Sources Hu Jicheng</p> <p>16:15 - 16:35 R3-13 Occurrences and Characteristics of Chlorinated and Brominated Polycyclic Aromatic Hydrocarbons in Stack Gas of Waste Incinerators Rong Jin</p> <p>16:35 - 16:55 R3-14 Atmospheric Polycyclic Aromatic Hydrocarbons (PAHs) in the Capital City of Seoul, South Korea: Spatial Distribution, Seasonal Variation, and Source Identification S-J Kim</p>	Junior Ballroom AB
15:35	16:55	Session 4 - POPs in the Arctic	<p>15:35 - 15:55 R4-11 Metabolomic and transcriptomic consequences of elevated PCB exposure in ringed seals (<i>Pusa hispida</i>) in Labrador T.M. Brown</p> <p>15:55 - 16:15 R4-12 Perfluoroalkyl acids in Arctic Caribou and Reindeer M Gamberg</p> <p>16:15 - 16:35 R4-13 Brominated flame retardants in air at Toolik Lake, Arctic KJ Hageman</p> <p>16:35 - 16:55 R4-14 Climatic Influence on temporal trends of polychlorinated biphenyls (PCBs) and organochlorine pesticides in landlocked char from lakes in the Canadian High Arctic Derek Muir</p>	Junior Ballroom C

15:35	16:55	Session 5- Persistent Organic Pollutants (POPs) and Emerging Contaminants in Developing Countries II	15:35 - 15:55 R5-11 Assessing Human Exposure to PM10-Bound Polycyclic Aromatic Hydrocarbons During Fireworks Displays Siwatt Pongpiachan 15:55 - 16:15 R5-12 Organohalogen pollutants in surface particulates from workshop floors of four major e-waste recycling sites in China and implications for emission lists yanhong zeng 16:15 - 16:35 R5-13 Airborne PAHs and PCBs along a coastal, urban-industrial gradient in Rio de la Plata Estuary, Argentina J.C. Colombo 16:35 - 16:55 R5-14 Atmospheric levels of polybrominated diphenyl ethers (PBDEs) and hexabromocyclododecane (HBCDDs) in Gauteng Province, South Africa using passive air samplers. ZJ Katima	Junior Ballroom D
15:35	16:55	Session 6- Exposure to POPs in Urban, Indoor and Workplace Environments	15:35 - 15:55 R6-11 Organophosphate Esters Levels in House Dust samples from Canada, Egypt and Turkey PB Kurt-Karakus 15:55 - 16:15 R6-12 Preliminary assessment of occupational exposure to flame retardants in Canadian e-waste recycling facility ML Diamond 16:15 - 16:35 R6-13 Elucidating Levels and Pathways of Human Exposure in Ireland to POP-BFRs and PFOS (ELEVATE) N Wemken 16:35 - 16:55 R6-14 Emission rates of HBCD isomers from EPS and XPS insulation foams H Kuramochi	Parksville
18:30	19:00	Cocktail Reception	Cash Bar	Grand Ballroom Foyer
19:00	23:00	Conference Banquet Dinner and Dance	Conference Banquet Dinner and Dance (\$125.00). Dinner will be served at 7:00 pm. Music will be provided by Dr. Strangelove (a 6-piece dance band) starting at 9:00pm. The dance portion of this event is open to all delegates after 9:00pm.	Grand Ballroom

Friday 25<sup>th</sup> August



Start	End		Title Presenter	Location
8:30	9:15	Plenary Session VI	Contamination and human exposure to micropollutants including dioxin-related compounds in informal recycling sites for e-waste and end-of-life vehicles <i>S Takahashi</i>	Grand Ballroom
9:15	9:45	Coffee Break		Grand Ballroom Foyer
9:45	11:00	Symposium Highlights by Students		Grand Ballroom
11:00	11:30	Otto Hutzinger Student Awards		Grand Ballroom
11:30		Dioxin 2018		Grand Ballroom

## DIOXIN 2017 - FULL LIST OF CONFERENCE PRESENTATIONS

NOTE, PRESENTATIONS TAKING PLACE IN THE EXHIBIT HALL ARE POSTER PRESENTATIONS.

ID	Pre_Num	Date	Time	Session	Room	Title	Presenter	Affiliation	Authors
12948	PL-1	08/20/2017	18:00 - 18:45	Plenary I	Grand Ballroom	Persistent, bioaccumulative and toxic contaminants in marine mammals: a troubling legacy concern for conservationists	PS Ross	Ocean Wise Conservation Association, Vancouver BC, Canada	
10230	PL-2	08/21/2017	08:30 - 09:15	Plenary II	Grand Ballroom	Dioxin and The AhR: The Beginnings and No End In Site	S Safe	Texas A&M University, College Station, TX, United States	
9863	P1-A	08/21/2017	09:15 - 09:45	Analysis of emerging and legacy	Exhibit Hall	An Analytical Method for Alternative Flame Retardants in Chairs and Car Seats to Evaluate Direct Dermal Exposure from Interior Consumer Products	K Terao	University of Shizuoka, Shizuoka, Japan	Dr. Q Wang, Dr. M Tokumura, Dr. Y Miyake, Prof. T Amagai, Dr. K Tatsu
9902	P10-E	08/21/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Tissue-specific bioaccumulation of halogenated methylbipyrroles and long-chain perfluorinated carboxylic acids in marine mammals stranded in northern Japan	Yukiko Fujii	Daichi University of Pharmacy, Fukuoka, Japan	Dr. Yoshihisa Kato, Dr. Osamu Kimura, Dr. Tetsuya Endo, Dr. Chiho Ohta, Dr. Nobuyuki Koga, Dr. Kouji Harada, Dr. Akio Koizumi, Dr. Koichi Haraguchi
9842	P11-E	08/21/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Mass balance analysis of PFASs in rice ( <i>Oryza sativa</i> subsp. Japonica)	S Taniyasu	National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, Japan	Dr. E Yamazaki, Prof. K Noborio, Prof. J Falandysz, Dr. N Yamashita
10107	P12-E	08/21/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Distribution of PFASs on leaching depth using rice paddy lysimeter	H Eun	Institute for Agro-Environmental Sciences, National Agriculture and Food Research Organization (NARO), Tsukuba, Ibaraki Pref., Japan	Dr. E Yamazaki, Mr. Y Pan, Dr. S Taniyasu, Prof. K Noborio, Dr. N Yamashita
10121	P13-E	08/21/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Development of enzymatic membrane bioreactors for removal of persistent organohalogen compounds from wastewater	F.I. Hai	Strategic Water Infrastructure Lab, School of Civil, Mining and Environmental Engineering, University of Wollongong, Wollongong, NSW, Australia	Mr. M.B. Asif, Prof. W.E. Price, Prof. L.D. Nghiem
12946	P14-E	08/21/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Organochlorine pesticides in agricultural soils of the main agricultural valleys of Baja California, Mexico	N Ramírez-Álvarez	Instituto de Investigaciones Oceanológicas, Ensenada, B.C., Mexico	Dr. V Macías-Zamora, Dr. JL Sánchez-Osorio, Dr. FA Hernández-Guzmán, Dr. A Álvarez-Aguilar
9960	P16-E	08/21/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Towards a Nested Exposure Model for organic contaminants (NEM)	K Breivik	NILU – Norwegian Institute for Air Research, Kjeller, Norway   University of Oslo, Oslo, Norway	Prof. M MacLeod, Prof. F Wania, Dr. S Eckhardt
10062	P17-E	08/21/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Survey on Per- and Polyfluoroalkyl Substances in Aquatic Biota in Okinawa, Japan -Is N-ethyl perfluorooctane sulfonamidoethanol related to formation of PFOS in Fish?-	Kitao Ryota	Graduate school of Engineering, Kyoto university, Yoshida Honmachi, Sakyo-ku, Kyoto, Japan	Dr. Suzuki Yuji, Prof. Tanaka Shuhei, Prof. Fujii Shigeo, Mr. Yukioka Satoru, Mr. Nabetani Yoshiki, Mr. Yokota Toru
9856	P18-E	08/21/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Potential PFOS Precursor Treatment Options in Water	M Beveridge	University of British Columbia, Department of Civil Engineering, Vancouver, BC, Canada	Dr. L Li
9642	P19-E	08/21/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Determination and distribution pattern of environmental persistent free radicals in haze-associated atmospheric particle matters using electron paramagnetic resonance spectroscopy	Lili Yang	State Key Laboratory of Environmental Chemistry and Ecotoxicology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing, China	Dr. Guorui Liu, Dr. Minghui Zheng
9798	P2-A	08/21/2017	09:15 - 09:45	Analysis of emerging and legacy	Exhibit Hall	Lipid Loading and Elution Profiles for an Automated Cleanup Method for Polychlorinated Biphenyls, Polybrominated Diphenyl Ethers, Dioxins and Furans Analyses	Jeff Wiseman	J2 Scientific, Columbia, MO, United States	Mr. Mike Tanner, Mrs. Jennifer Salmons
10205	P20-E	08/21/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Identification of source-specific polycyclic aromatic compounds (PACs) in contaminated soils	M Larsson	MTM Research Center, Örebro University, Örebro, Sweden	Miss M Lam, Prof. M Engwall

9883	P21-E	08/21/2017	09:15 - 09:45	Environmental levels, transport and exposure	Exhibit Hall	Survey on Occurrences of Polyfluoroalkyl Phosphate Esters (PAPs) in Cosmetics and Wastewater Treatment Plants	S Yukioka	Kyoto University, Graduate School of Global Environmental Studies, Kyoto city, Kyoto, Japan	Dr. S Tanaka, Dr. Y Suzuki, Mr. C Zeng, Mr. R Kitao, Mr. M Nakada, Prof. S Fujii
9869	P23-H	08/21/2017	09:15 - 09:45	Human exposure and epidemiology	Exhibit Hall	Simultaneous Analytical Method for Brominated and Phosphorus Flame Retardants in Human Sample	T Nakao	Setsunan University, Hirakata, Japan	Dr. H Kakutani, Mr. T Yuzuriha, Prof. S Ohta
12631	P24-H	08/21/2017	09:15 - 09:45	Human exposure and epidemiology	Exhibit Hall	Coupling Structure Activity Relationship and a Multiplex Analytical Method to Assess Total Toxic Exposure	EM Jazan	Tufts University, Medford, MA, United States	Mrs. CJ Collins, Dr. KD Pennell
9908	P25-H	08/21/2017	09:15 - 09:45	Human exposure and epidemiology	Exhibit Hall	GC-MS Identification of Phthalate and Alternative Plasticisers in Medical Devices	Govindan Malarvannan	Toxicological Centre, University of Antwerp , Universiteitsplein 1, Wilrijk, Belgium	Dr. Matthias Onghena, Dr. Sören Verstraete, Dr. Esther van Puffelen, Dr. An Jacobs, Dr. Ilse Vanhorebeek, Dr. Sascha Verbruggen, Dr. Koen Joosten, Dr. Greet Van den Berghe, Dr. Philippe
9955	P26-T	08/21/2017	09:15 - 09:45	Toxicology	Exhibit Hall	Perfluorooctanoic Acid Uptake by Alfalfa (Medicago sativa) and subsequent Bioavailability from Feeding to Sprague-Dawley Rats	S.J. Lupton	Red River Valley Agricultural Research Center, United States Department of Agriculture-Agricultural Research Service, Fargo, ND, United States	Dr. H. Hakk
9720	P27-T	08/21/2017	09:15 - 09:45	Toxicology	Exhibit Hall	Effects of 2, 2', 4, 4'-tetrabromodiphenyl ether on the path angle and social activity of zebrafish larvae	Bin Zhang	College of Environmental Science and Engineering, Tongji University, Shanghai, China	Dr. Ruijie Pan, Dr. Ting Xu, Dr. Jing Zhao, Dr. Daqiang Yin
10044	P28-R	08/21/2017	09:15 - 09:45	Regulation, policy, risk assessment	Exhibit Hall	Bilateral Collaboration and Joint Management for the Environmental Remediation of Dioxin Contamination at Danang Airport and Other Agent Orange Programs	MO Patterson	United States Agency for International Development, Hanoi, Viet Nam	Mr. PM Nguyen, Dr. A Sayers-Fay, Mr. PQ Vu, Mr. TT Hieu
10146	P29-R	08/21/2017	09:15 - 09:45	Regulation, policy, risk assessment	Exhibit Hall	An Evaluation of Federal and State Perfluorooctanoic acid (PFOA) Drinking Water Standards in the US	Andrew Monnot	Cardno-ChemRisk, San Francisco, CA, United States	Mr. Eric Miller, Ms. Lindsey Garnick, Mr. Evan Beckett, Dr. Angela Perez, Mr. Paul Scott, Ms. Rachel Zisook
9740	P3-A	08/21/2017	09:15 - 09:45	Analysis of emerging and legacy pollutants	Exhibit Hall	Organisation of an international interlaboratory study as a first step towards a harmonized approach to Analysis of Chlorinated Paraffins	K Kraetschmer	European Union Reference Laboratory for Dioxins and PCBs in Feed and Food, Freiburg, Baden-Wuerttemberg, Germany	Dr. A Schaechtele, Dr. R Malisch
9731	P30-R	08/21/2017	09:15 - 09:45	Regulation, policy, risk assessment	Exhibit Hall	Management Status and Information System for Wastes containing PCBs in Korea	Kyuyeon Kim	NIER, Incheon, Korea, Republic of	Mr. Heesung Moon, Dr. Taewan Jeon, Dr. Sunkyong Shin, Dr. Youngsam Yoon
9827	P31-R	08/21/2017	09:15 - 09:45	Regulation, policy, risk assessment	Exhibit Hall	Modified Sample Clean-up for Combined POPs Using Automated Multi-Column Fractionation and Analytical Optimization	HR Shir Khan	Toxic Report, Watertown MA 02472, United States	Dr. PM Germansderfer, Dr. R Addink, Mr. TG Hall
9818	P4-A	08/21/2017	09:15 - 09:45	Analysis of emerging and legacy pollutants	Exhibit Hall	Occurrence of halogenated flame retardants in Belgian foodstuff	G Poma	Toxicological Center, University of Antwerp, Universiteitsplein 1, 2610 Wilrijk, Belgium	Dr. SV Malysheva, Dr. S Gosciny, Dr. S Voorspoels , Dr. G Malarvannan, Dr. G Jacobs ,
9980	P5-A	08/21/2017	09:15 - 09:45	Analysis of emerging and legacy pollutants	Exhibit Hall	New GC Inlet Liner Deactivation Demonstrates Excellent Response for Active Compounds	Trent Sprenkle	Restek Corporation, Bellefonte, PA, United States	Mr. Linx Wacalaski, Mr. Corby Hilliard, Dr. Brian Jones
10133	P6-A	08/21/2017	09:15 - 09:45	Analysis of emerging and legacy pollutants	Exhibit Hall	ppLFR-MUM: An Updated Multimedia Urban Model (MUM) used for Estimating Organophosphate Ester (OPE) Transport, Fate and Emissions in Toronto, Canada	M.L. Diamond	Department of Earth Sciences, University of Toronto, Toronto, ON, Canada   Department of Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, Canada   School of the Environment, University of Toronto, Toronto, ON,	Mr. T.M. Rodgers, Mr. J. Truong, Dr. L.M. Jantunen, Dr. P.A. Helm
10069	P7-A	08/21/2017	09:15 - 09:45	Analysis of emerging and legacy pollutants	Exhibit Hall	External Quality Assessment Schemes (AMAP and Dioxins/Furans) to validate POPs measurement in human serum and a novel approach by APGC-MS/MS to increase the sensitivity of these compounds.	E Gaudreau	Laboratoire du Centre de Toxicologie du Québec (CTQ), Institut national de santé publique du Québec (INSPQ), Quebec, Qc, Canada	Mr. P Dumas, Mr. R Bérubé, Mr. A LeBlanc, Mr. D Bisson, Mr. N Fleury



9986	P8-A	08/21/2017	09:15 - 09:45	Analysis of emerging and legacy	Exhibit Hall	Levels of Polybrominated Diethyl Ether (PBDEs) in some foods commonly consumed in Nigeria	B.A Babalola	Department of Chemistry, University of Ibadan, Ibadan, Oyo, Nigeria   Basel Convention Coordinating Centre for Training and Technology Transfer for African Region, University of Ibadan, Ibadan, Oyo,	Dr. A.A Adeyi, Prof. O Osibanjo
9790	M1-1	08/21/2017	10:00 - 10:20	New and Alternate Instrumental	Grand Ballroom AB	HIGH RESOLUTION ORBITAL TRAPPING MASS SPECTROMETRY MEASUREMENT OF PERSISTENT ORGANIC POLLUTANTS IN COW's MILK	DG Hayward	US Food and Drug Administration, College Park/Maryland, United States	Mr. JC Archer
9678	M2-1	08/21/2017	10:00 - 10:20	Legacy to Emerging Fluoroalkyl C	Grand Ballroom CD	Side-Chain Fluorinated Polymer Surfactants in Aquatic Sediment and Biosolid-Augmented Agricultural Soil from the Great Lakes Basin of North America	R.J. Letcher	Wildlife and Landscape Science Directorate, Science and Technology Branch, Environment and Climate Change Canada, National Wildlife Research Centre, Carleton University, Ottawa, Ontario, Canada	Dr. S.G. Chu
9636	M3-1	08/21/2017	10:00 - 10:20	Brominated Flame Retardants	Junior Ballroom AB	EPIDEMIOLOGY OF EXPOSURE TO MIXTURES OF PBDES AND THYROID HORMONE DISRUPTION	TF Webster	Boston University School of Public Health, Boston, MA, USA	
9886	M4-1	08/21/2017	10:00 - 10:20	Risk Assessment and Risk Manag	Junior Ballroom C	Recommendations for further work on per- and polyfluorinated substances (PFASs)	D Borg	Swedish Chemicals Agency, Stockholm, Sweden	Ms. J Ivarsson, Mr. J Forsberg, Mr. S Fischer, Dr. B-O Lund, Mrs. A Andersson, Mr. G Moore
9665	M5-1	08/21/2017	10:00 - 10:20	Distribution, Transport and Fate	Junior Ballroom D	AMBIENT AIR MONITORING PROGRAM (2013-2015) MONTGOMERY COUNTY, MARYLAND SOLID WASTE RESOURCE RECOVERY FACILITY	G Hunt	TRC Environmental Corporation, Lowell MA, United States	Mr. W Davidson
9695	M6-1	08/21/2017	10:00 - 10:20	Absorption, Distribution, Metab	Parksville	Cypermethrin residues and diastereoselectivity in commercial and home-produced chicken eggs	JPM Torres	Biophysics Institute - Rio de Janeiro Federal University, Rio de Janeiro, Brazil	Mr. CET Parente, Miss J Lestayo, Mr. YS Guida, Dr. CE Azevedo-Silva, Prof. RO Meire, Prof. O
10010	M1-2	08/21/2017	10:20 - 10:40	New and Alternate Instrumental	Grand Ballroom AB	Quantification of Dioxins by GC-Orbitrap MS	Paul D. Jones	University of Saskatchewan, Saskatoon, SK, Canada	Prof. John P. Giesy
9737	M2-2	08/21/2017	10:20 - 10:40	Legacy to Emerging Fluoroalkyl C	Grand Ballroom CD	Presence of emerging per- and polyfluoroalkyl substances (PFAS) in river and drinking water near a fluorochemical production plant in the Netherlands	WA Gebbink	RIKILT, Wageningen University & Research, Wageningen, Netherlands	Mrs. L van Asseldonk, Dr. SPJ van Leeuwen
9997	M3-2	08/21/2017	10:20 - 10:40	Brominated Flame Retardants	Junior Ballroom AB	Hexabromocyclododecane (HBCD) found in e-waste is widely present in children's toys	Lee Bell	IPEN, Berkeley, United States	Mrs. Jitka Strakova, Dr. Joe DiGangi, Dr. Jana Pulkrabova, Mr. Tomas Gramblicka
10235	M4-2	08/21/2017	10:20 - 10:40	Risk Assessment and Risk Manag	Junior Ballroom C	Ecological and health risk assessment of persistent organic pollutants in Taihu Lake basin, China	Dong Wang	Nanjing University, Nanjing, China	Prof. Yuankun Wang, Prof. Vijay P. Singh, Miss Jieyu Zhu, Miss Lili Jiang, Mr. Debiao Zeng, Mr. Dengfeng Liu
9872	M5-2	08/21/2017	10:20 - 10:40	Distribution, Transport and Fate	Junior Ballroom D	NATIONAL AND CONTINUOUS DIOXIN AIR MONITORING NETWORK IN TAIWAN (2006-2016): SPATIAL, TEMPORAL VARIATION AND EMISSION SOURCES APPORTIONMENT VIA POSITIVE MATRIX FACTORIZATION	Yu Hsuan Yang	Institute of Environmental and Occupational Health Sciences, National Yang Ming University, Taipei 112, Taiwan	Miss Hsin Yu Yang, Miss Wen Xuan Huang, Mr. Yuan Jeng Hsu, Mr. Hung Te Tsai, Prof. Kai Hsien Chi
9655	M6-2	08/21/2017	10:20 - 10:40	Absorption, Distribution, Metab	Parksville	Combined effect of sea ice retreat and pollutants on lipid metabolism in polar bears	S Tartu	Norwegian polar institute, Tromsø, Norway	Dr. S Bourgeon, Dr. J Aars, Dr. M Andersen, Dr. Bm Jenssen, Mr. V Torget, Dr. A Polder, Dr. A Goksøyr, Dr. R Lille-Langøy, Dr. Jm Welker, Dr.
10180	M1-3	08/21/2017	10:40 - 11:00	New and Alternate Instrumental	Grand Ballroom AB	Comparison of atmospheric pressure chemical ionisation and electron ionisation for the analysis of persistent organic pollutants	GR Jones	Waters Corp, Wilmslow, Great Britain	Dr. D Douce
9785	M2-3	08/21/2017	10:40 - 11:00	Legacy to Emerging Fluoroalkyl C	Grand Ballroom CD	Monitoring of food in a region contaminated with PFAS	R Malisch	State Institute for Chemical and Veterinary Analyses of Food, Freiburg, Germany	Dr. T Radykewicz, Ms. M Schmitt, Ms. K Thoma, Mr. J Hansert, Mr. R Lippold
10011	M3-3	08/21/2017	10:40 - 11:00	Brominated Flame Retardants	Junior Ballroom AB	Flame Retardants in Furniture: Policies and Implications in North America	AE Lindeman	Green Science Policy Institute, Berkeley, CA, USA	Dr. V Babrauskas, Dr. D Lucas, Dr. S Petty, Dr. A Blum
9647	M4-3	08/21/2017	10:40 - 11:00	Risk Assessment and Risk Manag	Junior Ballroom C	SAFR®: Integrating exposure with hazard in a new assessment approach for responsible fire safety solutions.	Joel Tenney	ICL-IP America, 769 Old Saw Mill River Rd. Tarrytown, NY, United States	Dr. Smadar Admon, Mr. Marc Leifer, Dr. Ella Rapaport, Dr. Yakov Rachmilevich, Dr. Jeffrey Stowell, Dr. Mazal Wegner, Mr. Tami Weiss-

10223	M5-3	08/21/2017	10:40 - 11:00	Distribution, Transport and Fate	Junior Ballroom D	Hexachlorobutadiene (HCBD) in Ambient Air : analytical method development and trends at Supersite of Japan	T Takasuga	Shimadzu Techno Research, Kyoto, Japan	Dr. T Nakano, Dr. Y Shibata
9956	M6-3	08/21/2017	10:40 - 11:00	Absorption, Distribution, Metabolism	Parksville	Biotransformation of flame retardant 1,2-Dibromo-4-(1,2-dibromoethyl)cyclohexane (TBECH) in vitro by Human Liver Microsomes	K-H Nguyen	University of Birmingham, Birmingham, Great Britain	Dr. M Abdallah, Mr. L I Peters, Mr. A P Ganci, Prof. S Harrad
9683	M1-4	08/21/2017	11:00 - 11:20	New and Alternate Instrumental	Grand Ballroom AB	A GCxGC-HR-TOFMS with Enhanced Sensitivity: Targeted and Non-Targeted Analysis of Highly Complex Environmental Samples	V Artaev	LECO Corporation, S. Joseph, MI, USA	Dr. A Lebedev
10058	M2-4	08/21/2017	11:00 - 11:20	Legacy to Emerging Fluoroalkyl Compounds	Grand Ballroom CD	The PFOA alternative GenX now detected in grass and leaves near the Teflon plant in the Netherlands	S.H. Brandsma	Vrije Universiteit, Dept. Environment and Health, Amsterdam, Netherlands	Mr. J.C. Koekkoek, Mr. M.J.M. van Velzen, Prof. J. de Boer
9952	M3-4	08/21/2017	11:00 - 11:20	Brominated Flame Retardants	Junior Ballroom AB	Measuring Exposure to Brominated Flame Retardants using Silicone Wristbands	S. Hammel	Duke University, Durham, NC, United States	Dr. K Hoffman, Dr. H. Stapleton
9854	M5-4	08/21/2017	11:00 - 11:20	Distribution, Transport and Fate	Junior Ballroom D	Emissions of Persistent Organic Pollutants from Forest and Savannah Fires	Xianyu Wang	Queensland Alliance for Environmental Health Sciences, The University of Queensland, Brisbane, QLD, Australia	Dr. Phong Thai, Dr. C.P. (Mick) Meyer, Dr. Fabienne Reisen, Dr. Marc Mallet, Dr. Maximilien Desservettaz, Dr. Darryl Hawker, Dr. Melita Keywood, Dr. Branka Miljevic, Dr. Clare Paton-Walsh, Dr. Michael Gallen, Dr. David
10186	M6-4	08/21/2017	11:00 - 11:20	Absorption, Distribution, Metabolism	Parksville	2,4,6-Tribromophenol disposition and kinetics in female Sprague Dawley Rats	Gabriel Knudsen	National Cancer Institute at NIEHS, Research Triangle Park, NC, United States	Ms. Samantha Hall, Ms. Alicia Richards, Dr. Linda Birnbaum
10094	M1-5	08/21/2017	11:20 - 11:40	New and Alternate Instrumental	Grand Ballroom AB	Variable energy electron ionization enhances the sensitivity and selectivity of brominated flame retardant analysis by GC/MS and GC x GC TOF/MS	Mohamed Abdallah	University of Birmingham, Birmingham, Great Britain	Dr. Fang Tao, Prof. Stuart Harrad, Mr. Aristide Ganci
10082	M2-5	08/21/2017	11:20 - 11:40	Legacy to Emerging Fluoroalkyl Compounds	Grand Ballroom CD	Perfluorinated compounds in offshore fire-fighting foams – a source for marine contamination?	R Suehring	Cefas, Lowestoft, Great Britain	Dr. C Phillips, Dr. R Rowles, Mr. I Abdoellakhan
9920	M3-5	08/21/2017	11:20 - 11:40	Brominated Flame Retardants	Junior Ballroom AB	Occurrence of HBCDDs, bromophenols, tetrabromobisphenol A and tetrabromobisphenol S in milk, eggs, fish, offal and animal fat produced in Ireland in 2014	C Tlustos	Food Safety Authority of Ireland, Dublin, Ireland	Dr. M Driffield, Dr. M Garcia Lopez
9924	M4-5	08/21/2017	11:20 - 11:40	Risk Assessment and Risk Management	Junior Ballroom C	Identifying Human Populations with High Exposure Susceptibility to Polychlorinated Biphenyls Based on Source Proximity, Global Transport and Dietary Habits	F. Wania	University of Toronto Scarborough, Toronto, Canada	Dr. E. Undeman, Dr. T.N. Brown, Dr. M.S. McLachlan
10075	M5-5	08/21/2017	11:20 - 11:40	Distribution, Transport and Fate	Junior Ballroom D	Halogenated Flame Retardants Water-Soluble Ions in Airborne Particles of the Pearl River Delta in Southern China: Levels, Distribution, and Sources	Shejun Chen	Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, Guangzhou, China	Dr. Nan Ding, Dr. Tao Wang, Dr. Ting Wang, Dr. Bixian Mai
10025	M6-5	08/21/2017	11:20 - 11:40	Absorption, Distribution, Metabolism	Parksville	Bioavailability of HBCD/TBB/TBPH from dust and oil vehicles in Sprague-Dawley rats	H Hakk	Red River Valley Agricultural Research Center, Fargo, ND, United States	Dr. S Lupton, Dr. A Singh
10184	M1-6	08/21/2017	11:40 - 12:00	New and Alternate Instrumental	Grand Ballroom AB	Development of a HRMS method to aid in identification of chlorinated and brominated contaminants	A.C. IONAS	Research Centre for Toxic Compounds in the Environment (RECETOX), Masaryk University, Kamenice 753/5, 625 00 Brno, Czech Republic	Miss A. Miralles-Marco, Dr. G.P. Codling, Dr. S. Vojta, Dr. L. Melymuk, Prof. J. Klánová
10129	M2-6	08/21/2017	11:40 - 12:00	Legacy to Emerging Fluoroalkyl Compounds	Grand Ballroom CD	State of the science and meta-analysis of crop uptake of per- and polyfluoroalkyl substances (PFAS)	A.L. Perez	Cardno ChemRisk, Portland, OR, USA	Ms. C. Poteete, Ms. F. Louie, Dr. L. Garner, Mr. P. Scott, Ms. R. Zisook, Dr. A. Monnot
10143	M3-6	08/21/2017	11:40 - 12:00	Brominated Flame Retardants	Junior Ballroom AB	Simultaneous and Reliable Determination of PCDD/F, PCB, PBDE and PBDD/F	Thorsten Bernsmann	Chemical and Veterinary Analytical Institute Münsterland-Emscher-Lippe (CVUA-MEL), Münster,	Dr. Michael Albrecht, Prof. Peter Fürst

9951	M4-6	08/21/2017	11:40 - 12:00	Risk Assessment and Risk Manag	Junior Ballroom C	Risk tools for ready-to-use modeling of PFAS transfer from contaminated feed into foods of animal origin	J Numata	BfR–German Federal Institute for Risk Assessment, Berlin, Germany	Mr. H Siemen, Dr. H Schafft, Dr. C Mueller-Graf, Dr. M Greiner, Dr. M Lahrssen-Wiederholt
10093	M5-6	08/21/2017	11:40 - 12:00	Distribution, Transport and Fate	Junior Ballroom D	Composition of PM2.5 and Variation of Atmospheric PCDD/Fs in Northern Taiwan during Winter Monsoon and Local Pollution Events in 2015-2016	Wen Xuan Huang	Institute of Environmental and Occupational Health Sciences, National Yang Ming University, Taipei, 112, Taiwan	Miss Hsin Yu Yang, Miss Yu Shiang Yang, Miss Yi Na Li, Mr. Yuan Cheng Hsu, Dr. Charles C.-K. Chou, Prof. Kai Hsien Chi
10117	M6-6	08/21/2017	11:40 - 12:00	Absorption, Distribution, Metabo	Parksville	Validity of serum concentration in exposure assessment to environmental pollutants – a case study of perfluoroalkyl acids in Finnish children	Jani Koponen	National Institute for Health and Welfare, Kuopio, Finland	Miss Kerstin Winkens, Miss Riikka Airaksinen, Dr. Urs Berger, Dr. Robin Vestergren, Prof. Ian Cousins, Dr. Anne Karvonen, Prof. Juha
9975	M1-7	08/21/2017	13:00 - 13:20	New and Alternate Instrumental	Grand Ballroom AB	High throughput GC-HRMS acquisition methods for the analysis of PCDD/Fs and PCBs in biological matrices	C Calaprice	University of Birmingham, Birmingham, United Kingdom   University of Liège, Liège, Belgium	Dr. J-F Focant
12368	M2-7	08/21/2017	13:00 - 13:20	Are PFASs a New Concern for Wi	Grand Ballroom CD	Time trends in Perfluoroalkyl and Polyfluoroalkyl substances (PFASs) in California women: declining serum levels, 2011-2015	Susan Hurley	Cancer Prevention Institute of California, Berkeley, CA, USA	Ms. Debbie Goldberg, Dr. Miaomiao Wang, Dr. June-Soo Park, Dr. Myrto Petreas, Dr. David Nelson, Dr. Peggy Reynolds
9931	M3-7	08/21/2017	13:00 - 13:20	Brominated Flame Retardants	Junior Ballroom AB	Particle-bound PBDEs in a Computer Repair Service: PM1, PM10, and settled dust	PB Kurt-Karakus	Bursa Technical University, Bursa, Turkey	Dr. M Genisoglu, Dr. E Gungormus, Dr. A Sofuoglu, Dr. A Birgul, Dr. SC Saofuoglu
9687	M4-7	08/21/2017	13:00 - 13:20	POPs in Food and Feed	Junior Ballroom C	Persistent organic pollutants exposure from fish consumption is an important risk factor for type 2 diabetes among First Nations in Canada	L Marushka	Biology Department, University of Ottawa, Ottawa, Ontario, Canada	Dr. X Hu, Dr. M Batal, Dr. W David, Dr. H Schwartz, Mrs. A Ing, Mrs. K Fediuk, Dr. D Sharp, Dr. A Black, Dr. C Tikhonov, Dr. L Chan
9828	M5-7	08/21/2017	13:00 - 13:20	Toxicology	Junior Ballroom D	Dermal contact with household textiles is a significant exposure pathway to brominated flame retardants	Mohamed Abdallah	University of Birmingham, Birmingham, Great Britain	Prof. Stuart Harrad
9752	M6-7	08/21/2017	13:00 - 13:20	Spatial and Temporal Trends of P	Parksville	Dioxin and PCB concentrations in Baltic salmon have decreased remarkably during the 2000s'	P Ruokojärvi	National Institute for Health and Welfare, Kuopio, Finland	Ms. R Airaksinen, Dr. M Keinänen, Prof. H Kiviranta, Mr. J Koponen, Dr. J Mannio, Dr. T Myllylä, Dr. J Nieminen, Dr. J Raitaniemi, Dr. P Rantakokko, Dr. E-R Venäläinen, Dr. PJ
9917	M1-8	08/21/2017	13:20 - 13:40	New and Alternate Instrumental	Grand Ballroom AB	Integration of polybrominated diphenyl ethers (PBDE) and other brominated compounds into the automated sample preparation for dioxines and PCBs.	MH von Essen	LCTech GmbH, D-84419 Obertaufkirchen, Germany	Dr. M Albrecht, Mr. M Baumann, Dr. T Bernsmann
9734	M2-8	08/21/2017	13:20 - 13:40	Are PFASs a New Concern for Wi	Grand Ballroom CD	Per- and polyfluoroalkyl substances in human milk from Swedish mothers: individual and geographical differences and temporal trends, 1972-2015	E Nyberg	Department of Environmental Research and Monitoring, Swedish Museum of Natural History, Stockholm, Sweden	Dr. R Awad, Dr. JP Benskin, Dr. A Bignert, Dr. S Danielsson, Dr. C Ek, Dr. G Sallsten
9909	M3-8	08/21/2017	13:20 - 13:40	Brominated Flame Retardants	Junior Ballroom AB	Polybrominated Diphenyl Ethers in End-of-life Electric Home Appliances Collected in Japan in 2016	N Kajiwara	National Institute for Environmental Studies (NIES), Tsukuba, Japan	Dr. H Matsukami
9712	M4-8	08/21/2017	13:20 - 13:40	POPs in Food and Feed	Junior Ballroom C	Dietary Exposure Assessment of Chinese Population to Legacy and Novel Brominated Flame Retardants: Results of a Chinese Total Diet Study and National Human Milk survey	ZX Shi	Capital Medical University, Beijing, China	Prof. PL Huang, Prof. YN Wu, Dr. JG Li
9717	M5-8	08/21/2017	13:20 - 13:40	Toxicology	Junior Ballroom D	Excessive Activation of AhR Signaling Reduces Dendritic Growth in the Developing Mouse Brain	E Kimura	Laboratory of Environmental Health Sciences, Center for Disease Biology and Integrative Medicine, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan   Center for Health and Environmental Risk Research, National Institute for	Ms. Y Ding, Dr. C Tohyama

9881	M6-8	08/21/2017	13:20 - 13:40	Spatial and Temporal Trends of P	Parksville	PCDD/F levels in different tissues from dugongs (Dugong dugon) inhabiting nearshore areas in Queensland	S Vijayasaraty	Queensland Alliance for Environmental health sciences (QAEHS), The University of Queensland, Brisbane, Queensland, Australia	Dr. L Weijs, Dr. M Gallen, Dr. C Gaus
10132	M1-9	08/21/2017	13:40 - 14:00	New and Alternate Instrumental	Grand Ballroom AB	A Study of All 209 PCB Isomers using GC-APCI-MS/MS at Various Collision Energies: Correlations with EI Data and Toxicity	J Hart	Sheffield Hallam University, Sheffield, Great Britain	Mr. GR Jones, Dr. M Clench
9690	M2-9	08/21/2017	13:40 - 14:00	Are PFASs a New Concern for Wi	Grand Ballroom CD	Circulating levels of perfluoroalkyl substances (PFASs) and carotid artery intima-media thickness - a longitudinal study over 10 years.	M Lind	Department of Medical Sciences, Occupational and Environmental Medicine, Uppsala University, Uppsala, Sweden	Dr. S Salihovic, Miss J Stubleski, Prof. L Lind
9771	M3-9	08/21/2017	13:40 - 14:00	Brominated Flame Retardants	Junior Ballroom AB	THE THERMOCHEMICAL FORMATION OF BROMINATED AROMATIC COMPOUNDS FROM TETRABROMOBISPHENOL A AT E-WASTE OPEN BURNING SITES	Yusuke Kojima	Department of Environmental Engineering, Graduate School of Engineering, Kyoto University, Kyoto, Kyoto, Japan	Dr. Takashi Fujimori, Mr. Kenji Shiota, Dr. Toshiaki Ina, Dr. Kazuyuki Oshita, Prof. Takaoka Masaki
9773	M4-9	08/21/2017	13:40 - 14:00	POPs in Food and Feed	Junior Ballroom C	Brominated flame retardants in eggs – data from Kazakhstan and Thailand	R Weber	POPs Environmental Consulting, Schwaebisch Gmuend, Germany	Mr. J Petrlik, Dr. L Bell, Mr. D Kalmykov
9735	M5-9	08/21/2017	13:40 - 14:00	Toxicology	Junior Ballroom D	PCB126 disrupts epidermal growth factor internalization and receptor phosphorylation	MC Cave	University of Louisville Division of Gastroenterology and Nutrition, Louisville, Kentucky, United States	Mr. JE Hardesty, Mr. H Shi, Mr. J Jin, Mr. HB Clair, Dr. KC Falkner, Dr. RA Prough
10182	M1-10	08/21/2017	14:00 - 14:20	New and Alternate Instrumental	Grand Ballroom AB	Evaluation of a High Throughput, No DCM or Capital Equipment Sample Clean Up for POPs Analysis	R Addink	Toxic Report, Watertown MA 02472, United States	Mr. R Juma
9948	M2-10	08/21/2017	14:00 - 14:20	Are PFASs a New Concern for Wi	Grand Ballroom CD	Plasma levels of Poly- and Perfluoroalkyl Substances (PFASs) in two Antarctic long-lived seabirds: effects of gender and age	O Chastel	CEBC-CNRS, Villers en Bois, France	Dr. S Tartu, Dr. G Munoz, Dr. H Weimerskirch, Dr. H Budzinski, Dr. P Labadie
9807	M3-10	08/21/2017	14:00 - 14:20	Brominated Flame Retardants	Junior Ballroom AB	DETERMINATION OF THE ABSORPTION PATHWAYS AND DEPOSITION MECHANISM OF BROMINATED FLAME RETARDANTS (BFRS) TO WHEAT LEAVES	Hongwen Sun	MOE Key Laboratory of Pollution Processes and Environmental Criteria, College of Environmental Science and Engineering, Nankai University, Tianjin, China	Dr. Hongkai Zhu
9780	M4-10	08/21/2017	14:00 - 14:20	POPs in Food and Feed	Junior Ballroom C	The Norwegian POPs in Food-Study: 19 Years of a World-Wide Interlaboratory Study	N. M. Bruun Bremnes	Norwegian Institute of Public Health , Oslo, Norway	Dr. L. Småstuen Haug, Dr. C. Thomsen
9868	M5-10	08/21/2017	14:00 - 14:20	Toxicology	Junior Ballroom D	Comparison of EDCs Risk Perception Between The General Public and Experts Using Psychological Effect Variables in Korea	YJ LEE	The Institute for Environmental Research, Yonsei University College of Medicine, Seodaemun-gu, Seoul, Korea, Republic of	Mr. SH KIM, Ms. BR WI, Mr. SH HONG, Dr. YW LIM
12942	P-52H	08/21/2017	14:20 - 14:50	Human exposure and epidemiolo	Exhibit Hall	Determination of concentrations of Dioxins and Polychlorinated Biphenyls in canned mackerel (S. japonicus) from Peruvian industry and evaluation of their safety status	Alfonso Vargas H.	National Fisheries Health Agency (SANIPES), Surquillo, Lima/Lima, Peru	Prof. Ignacio Hinojosa B.
9865	P31-A	08/21/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	Determination of Novel Brominated and Phosphorus Flame Retardants in Flame-Retarded Curtains	Y Miyake	University of Shizuoka, Shizuoka, Japan	Mr. H Nakayama, Prof. T Amagai, Ms. S Ogo, Dr. K Kume, Dr. T Kobayashi, Dr. S Takasu, Dr. K Ogawa, Prof. K Kannan
9900	P32-A	08/21/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	Characterisation of chlorinated paraffin profiles in sediment and biota by LC-ESI(-)-HRMS and semi-automatic post-acquisition data treatment	L Schinkel	Empa, Dübendorf, Switzerland   ETH, Zürich, Switzerland	Dr. R Cariou, Dr. Y Guittton, Ms. É Lesquin, Mr. A Léon, -- C Munsch, -- C Tixier, -- P Labadie, Prof. H Budzinski, -- E Bichon, -- P Marchand, Dr. G
9921	P33-A	08/21/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	Atmospheric Concentrations of some Stockholm Convention Persistent Organic Pollutants in West Asia	B Gevao	Kuwait Institute for Scientific Research, P. O. Box 24885, Safat, Kuwait	Dr. T Harner, Dr. J Schuster, Dr. K Martinez-Guijarro
10024	P34-A	08/21/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	Organochlorine Pesticides Extraction of air and soil samples using Accelerated Solvent Extractor	M Wright	Pacific Rim Labs Inc, Surrey, British Columbia, Canada	Mr. D Hope, Mr. J del Pozo, Mr. T Duy, Mr. D Hoa-Gau
12745	P35-A	08/21/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	Brominated and Phosphate Flame Retardant Analysis in Television Enclosures	E Schreder	Toxic-Free Future, Seattle, WA, USA	Ms. S Hammel, Ms. N Uding, Ms. C Peele, Dr. H Stapleton

10201	P36-A	08/21/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	Comprehensive Range of Clean-up Methods for Biological Matrices, from High to Low Fat Content	C Calaprice	University of Birmingham, Birmingham B15 2TT, United Kingdom   University of Liège, Liège, Belgium	Dr. J-F Focant
10218	P37-A	08/21/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	Recovery of Perfluorochemiclas from Glass and Painted Metal Surfaces	william Mills	Northern Illinois University, DeKalb, IL, United States	Dr. thomas holsen, Dr. bernard crimmin
9911	P39-A	08/21/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	Characterization of the Rtx-Dioxin2 for PCB Analysis by Kovats and Lee Retention Indices	C. Stultz	Pennsylvania State University, State College, PA, United States	-- J. Cochran, Dr. F. Dorman
10144	P40-A	08/21/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	New Reference Materials from the National Institute of Standards and Technology Supporting Environmental Measurement	J Kucklick	NIST, Charleston, South Carolina, United States	Dr. J Reiner, Dr. S Long, Dr. S Christopher, Dr. A Boggs, Mr. K Huncik, Ms. S Vander Pol, Dr. R Day, Ms. D Ellisor, Ms. J Trevillian, Ms. A Moors,
9684	P41-E	08/21/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	ROLE OF ADIPOSE TISSUE RESPONSIBLE FOR ECHOLOCATION IN THE BIOACCUMULATION PROCESS OF LIPOPHILIC COMPOUNDS IN HARBOUR PORPOISES	L Weijs	Queensland Alliance for Environmental Health Sciences - The University of Queensland, Coopers Plains, Queensland, Australia	Ms. I Schaap, Prof. L Gross, Prof. A Covaci, Prof. T Jauniaux, Prof. R Blust, Prof. M van den Berg
10139	P42-E	08/21/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Vapour Pressures and Octanol-Air Partition Coefficients of Ultraviolet-Filters, Novel Brominated Flame Retardants (N-BFRs) and Organophosphate Esters (OPEs)	J.O Okeme	University of Toronto , Toronto, ON, Canada	Mr. T.M Rodgers, Prof. J.M Parnis, Prof. M.L Diamond, Dr. L.M Jantunen
10164	P43-E	08/21/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Enhanced Removal of Perfluorinated Alkylated Substances (PFASs) from Aqueous Solution by Mesoporous Graphene Nanosponge	J.J. Jiang	Department of Environmental Engineering, Chung Yuan Christian University, Taoyuan, Taiwan	Miss J.A. Santos, Prof. S.H. Hu
10260	P44-E	08/21/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	SPATIAL AND TEMPORAL VARIATIONS OF POLYCYCLIC AROMATIC HYDROCARBONS AROUND A TYPICAL MEDICAL WASTE INCINERATOR	O.A Adesina	Afe-Babalola University, Ado-Ekiti, Ekiti State, Nigeria	Prof. J Sonibare, Dr. P.N Diagboya
9627	P45-E	08/21/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Environmental occurrence and distribution of organic UV stabilizers in sediments of the Bohai and Yellow Seas	Christina Apel	Helmholtz-Zentrum Geesthacht, Geesthacht, Germany	Dr. Jianhui Tang, Dr. Ralf Ebinghaus
10157	P46-E	08/21/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	LONG-TERM MONITORING ATMOSPHERIC DEPOSITION OF PCDD/Fs IN AN INDUSTRIAL AREA	Chunhsun Lin	China Steel Corporation, Kaohsiung, Taiwan	Dr. Mingsheng Hsu
10074	P47-E	08/21/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) concentrations in the South Korean agricultural environment	Su-Myeong Hong	Chemical Safety Division, National Institute of Agricultural Sciences, Rural Development Administration, Wanju , Korea, Republic of	Dr. Geun-Hyoung Choi, Ms. Song-Hee Ryu, Dr. Byung-Jun Park, Dr. Jin-Hyo Kim
10224	P48-E	08/21/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Ambient air PCDD/Fs and PCBs determination according to UNI EN 1948-1-3-4: uncertainty and instrumental control limits for preliminary evaluation parameters such as flow velocity, water vapor, oxygen and carbon dioxide concentrations	MG BONELLI	University of Rome "La Sapienza", Rome, Italy	Mr. G CROCE, Mr. F MANNELLI, Dr. A MANNI, Mr. M BALDASSINI, Mr. S BIANCHI, Mr. S BONDIELLI, Mr. M CARMIGNANI, Mr. E DELL'UNTO, Mr. A DI BAIA, Mr. E GALEOTTA, Mr. R GAMBUTI, Mr. M LAZZARI, Mr. M FERRI, Mr. D MACHETTI, Mr. T MANCIOCCHI, Mr. F MALENTACCA, Mr. S NINCI, Mr. C PORTA, Mr. D
10222	P49-E	08/21/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	PCNs Congeners in Ambient Air from Technical PCN and Unintentional Formation	T Takasuga	Shimadzu Techno-Research, Kyoto, Japan	Prof. T Nakano, Dr. Y Shibata
9663	P50-E	08/21/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Study of the operating factors influencing the removal of As, Cr, Cu, PCP and PCDD/F from attrition sludge using an alkaline leaching process	G Mercier	INRS-Eau, Terre et Environnement, Québec, Québec, Canada	Dr. L Coudert, Dr. L H Tran, Dr. K Guemiza, Dr. J-F Blais, Dr. G Mercier
10015	P53-H	08/21/2017	14:20 - 14:50	Human exposure and epidemiolo	Exhibit Hall	Atmospheric pressure ionisation for gas chromatography mass spectrometry: New perspectives for the determination of persistent organic pollutants (POPs) in human serum	P Dumas	Laboratoire du Centre de Toxicologie du Québec (CTQ), Institut National de Santé Publique du Québec (INSPQ), , Quebec City, QC, Canada	Mrs. L Bellemare, Mr. R Bérubé, Mr. N Fleury, Dr. P Ayotte

10036	P54-R	08/21/2017	14:20 - 14:50	Regulation, policy, risk assessment	Exhibit Hall	Development, Alternatives Assessment and Value-in-Use of Short-Chain Fluorotelomer-based Products for Textiles, AFFF, Carpets and Other End-Uses	Stephen Korzeniowski	FluoroCouncil, Washington, DC, United States   BeachEdge Consulting, Media, PA, United States	Ms. Jessica Bowman
12337	P55-R	08/21/2017	14:20 - 14:50	Regulation, policy, risk assessment	Exhibit Hall	Study on Evaluation Method of Environmental Impact of Chemical Accident	Jihwan Son	NIER, Incheon, Korea, Republic of	Dr. Youngsam Yoon
9682	P56-R	08/21/2017	14:20 - 14:50	Regulation, policy, risk assessment	Exhibit Hall	Violation of Brazilian chicken meat in China: laboratory point of view	Leandro Noronha	SGS Environ, Rio de Janeiro, Brazil	Mr. Guilherme Azevedo, Mr. Mendes Henrique
10122	P57-S	08/21/2017	14:20 - 14:50	Sources, formation and transformation	Exhibit Hall	Catalytic decomposition of polychlorinated biphenyls by activated carbon-supported bimetallic catalysts	Yifei Sun	Beihang University, Beijing, China	Miss Yawen Liu, Mr. Fei Tao, Prof. Xungang Diao
9745	P58-S	08/21/2017	14:20 - 14:50	Sources, formation and transformation	Exhibit Hall	Biodegradation of Biphenyl and 2-Chlorobiphenyl by Isolated Bacterium from Mine Soil	I.H. Nam	Korea Institute of Geoscience and Mineral Resources (KIGAM), Daejeon, Korea, Republic of	Dr. J.G. Kim, Dr. C.M. Chon
9754	P59-T	08/21/2017	14:20 - 14:50	Toxicology	Exhibit Hall	Uptake of perfluorooctanoic acid into human intestinal Caco-2 cells by organic anion transporting polypeptide	O Kimura	School of Pharmaceutical Sciences, Health Sciences University of Hokkaido, 1757 Kanazawa, Ishikari-Tobetsu, Japan	Dr. Y Fujii, Dr. K Haraguchi, Dr. Y Kato, Dr. C Ohta, Dr. N Koga, Dr. T Endo
9859	P60-T	08/21/2017	14:20 - 14:50	Toxicology	Exhibit Hall	TCDD and TBBPA disrupted on adipocyte and/or osteoblast differentiation in human mesenchymal stem cells	Hideki Kakutani	Faculty of Pharmaceutical Sciences, Setsunan University, 45-1, Nagaotoge-cho, Hirakata, Osaka, 573-0101, Japan	Mr. Tomohiro Yuzuriha, Dr. Teruyuki Nakao, Prof. Souichi Ohta
10102	M1-11	08/21/2017	15:05 - 15:25	Advances in Trace Analysis	Grand Ballroom	Target, Suspect and Non-Target Screening of Dioxin-Like Compounds in Sediment and Fish Using A Sensitive High-Resolution Time-of-flight Mass Spectrometer	Peter Haglund	Umeå University, Umeå, Sweden	Dr. Nathan Eno, Dr. Sofia Nieto
9662	M2-11	08/21/2017	15:05 - 15:25	Pet Exposure to POPs	Grand Ballroom CD	Cats' exposure to thyroidogenic compounds associated to dust	Jm Weiss	Department of Environmental Science and Analytical Chemistry, Stockholm University, Stockholm, Sweden	Dr. B Jones, Dr. A Bignert, Dr. Å Bergman
9820	M3-11	08/21/2017	15:05 - 15:25	Brominated Flame Retardants	Junior Ballroom AB	TOXIC SPECIES FROM OXIDATION OF TETRABROMOBISPHENOL A	B Dlugogorski	Murdoch University, Murdoch, WA, Australia	Dr. A Saeed, Mr. K Siddique, Dr. M Altarawneh
9896	M4-11	08/21/2017	15:05 - 15:25	POPs in Food and Feed	Junior Ballroom C	PBDE concentrations in cattle fat and meat following exposure to biosolid amended pasture lands	DFK Rawn	Food Research Division, Health Canada, Ottawa, ON, Canada	Mr. D Sit, Mr. B Yu, Mr. A Alimkulov, Mr. M Feeley
9661	M5-11	08/21/2017	15:05 - 15:25	Gas/Particle Partition of POPs in	Junior Ballroom D	Long-term Monitoring of Atmospheric PCDD/Fs at Mount Lulin during Spring Season: PCDD/F Source Apportionment through A Simultaneous Measurement in Southeast Asia (2008-2016)	Yu Hsuan Yang	Institute of Environmental and Occupational Health Sciences, National Yang Ming University, Taipei112, Taiwan	Miss Shih Yu Pan, Dr. Chuan Yao Lin, Dr. Shih Chieh Hsu, Dr. Charles C.k. Chou, Prof. Neng Huei Lin, Prof. Kai Hsien Chi
9897	M6-11	08/21/2017	15:05 - 15:25	Spatial and Temporal Trends of POPs	Parksville	Spatial Distribution and Accumulation of Brominated Flame Retardants in the European Eel in Flanders, Belgium	Govindan Malarvannan	Toxicological Centre, University of Antwerp, Universiteitsplein 1, 2610 Wilrijk, Belgium	Dr. Claude Belpaire, Dr. Caroline Geeraerts, Dr. Adrian Covaci
10194	M1-12	08/21/2017	15:25 - 15:45	Advances in Trace Analysis	Grand Ballroom	Polychlorinated dibenzo-p-dioxins, dibenzofurans and polychlorinated biphenyls in soil from informal electronic waste units and nearby open dumpsites of India: CALUX Bioassay screening, Concentrations, Homologous profiling and Toxicity Equivalents	PAROMITA CHAKRABORTY	SRM UNIVERSITY, KATTANKULATHUR, TAMIL NADU, India	Mr. SAKTHIVEL SELVRAJ, Mr. MASAFUMI NAKAMURA, Mr. SYUNKEI KO
9742	M2-12	08/21/2017	15:25 - 15:45	Pet Exposure to POPs	Grand Ballroom CD	CAT EXPOSURE TO POPs AND OTHER UNTARGETED CHEMICALS: LEVELS, TRENDS, AND HYPERTHYROIDISM	June-Soo Park	California Department of Toxic Substances Control, Berkeley, California, United States	Dr. Miaomiao Wang, Dr. Weihong Guo, Dr. Yunzhu Wang, Dr. Suhash Harwani, Dr. Steve Gardner, Dr. Myrto Petreas
10100	M3-12	08/21/2017	15:25 - 15:45	Brominated Flame Retardants	Junior Ballroom AB	Trends of BFRs in the UK marine environment	J.L. Barber	Cefas, Lowestoft, Suffolk, Great Britain	Dr. P. Bersuder, Dr. S. Losada, Dr. J. Barry

9971	M4-12	08/21/2017	15:25 - 15:45	POPs in Food and Feed	Junior Ballroom C	Data base of PCDD/F and PCB congener patterns for identification of sources for contamination of feed and food	Rainer Malisch	EU Reference Laboratory for Dioxins and PCBs in Feed and Food, Freiburg, Germany	Dr. Thorsten Bernsmann, Dr. Roberta Ceci, Dr. Gianfranco Diletti, Prof. Gauthier Eppe, Dr. Alwyn Fernandes, Prof. Heidelore Fiedler, Dr. Jerry Hart, Dr. Ron Hoogenboom, Dr. Helge Hove, Dr. Gerlinde Knetsch, Dr. Leondios Leondiadis, Dr. Anja Lueth, Dr. Philippe Marchand, Dr. Sebastian Maszewski, Dr. Martin Rose, Dr. Alexander Schaechtele, Dr. Huig
9680	M5-12	08/21/2017	15:25 - 15:45	Gas/Particle Partition of POPs in	Junior Ballroom D	PAHs in Chinese atmosphere: Concentration, source and gas-particle partitioning	Wan-Li Ma	International Joint Research Center for Persistent Toxic Substances (IJRC-PTS), State Key Laboratory of Urban Water Resource and Environment, Harbin Institute of Technology, Harbin, Heilongjiang, China	Dr. Yi-Fan Li
10055	M6-12	08/21/2017	15:25 - 15:45	Spatial and Temporal Trends of P	Parksville	Temporal trends of legacy persistent organic pollutants (POPs) in the Eastern Beaufort Sea beluga whales	M Noel	Vancouver Aquarium, Vancouver BC, Canada	Dr. L Loseto, -- A Burt, -- B Rosenberg, Dr. G Stern
9874	M1-13	08/21/2017	15:45 - 16:05	Advances in Trace Analysis	Grand Ballroom	Influence of dissolved organic matter on the extraction efficiency of flame retardants from surface waters	J Gustavsson	Swedish University of Agricultural Sciences, Uppsala, Sweden	Dr. L Ahrens, Dr. S Josefsson, Prof. Dan Berggren Kleja, Mr. MA Nguyen, Prof. K Wiberg
9848	M2-13	08/21/2017	15:45 - 16:05	Pet Exposure to POPs	Grand Ballroom CD	in vivo exposure to PCBs in cats: Analysis of metabolic capacities and effects on the thyroid hormone homeostasis	Hazuki Mizukawa	Graduate School of Veterinary Medicine, Hokkaido University, Hokkaido, Japan	Dr. Kei Nomiya, Mr. Hiroyuki Nishikawa, Ms. Misaki Maehara, Ms. Nana Takai, Dr. Nozomu Yokoyama, Dr. Osamu Ichii, Dr. Mitsuyoshi Takiguchi, Dr. Yoshinori Ikenaka, Dr. Shouta Nakayama, Mr. Kohki Takaguchi, Dr. Shinsuke
10017	M3-13	08/21/2017	15:45 - 16:05	Brominated Flame Retardants	Junior Ballroom AB	Analysis of halogenated phosphorus flame retardants in insulating foam using pyrolysis and high resolution gas chromatography	DE Alonso	LECO Corporation, St. Joseph/Michigan, United States	Dr. L Humston-Fulmer, Mr. J Binkley
9650	M4-13	08/21/2017	15:45 - 16:05	POPs in Food and Feed	Junior Ballroom C	Estimation of Polychlorinated dibenzo-p-dioxin, dibenzofuran, and biphenyl sources in Chinese mitten crabs	Ying Han	University of Chinese Academy of Sciences, Beijing, China	Prof. Wenbin Liu
9946	M6-13	08/21/2017	15:45 - 16:05	Spatial and Temporal Trends of P	Parksville	Polybrominated Diphenyl Ethers (PBDEs) and Hexabromocyclododecane (HBCD) in marine and freshwater biota samples from the German Environmental Specimen Bank	N Lohmann	Eurofins GfA Lab Service GmbH, Hamburg, Germany	Mrs. S Rolle, Dr. H Ruedel, Dr. D Teubner, Mr. J Koschorreck
10241	M1-14	08/21/2017	16:05 - 16:25	Advances in Trace Analysis	Grand Ballroom	Comparison of International Quality Assurance and Quality Control Standards for High Resolution Mass Spectrometry Dioxin Analysis	DI Thal	Environmental Standards, Inc., Knoxville, Tennessee, United States	Mr. ET Ogburn, Mr. RJ Vitale, Mr. DR Blye
9891	M2-14	08/21/2017	16:05 - 16:25	Pet Exposure to POPs	Grand Ballroom CD	Tissue Distribution of polychlorinated biphenyls and their metabolites in dog and cat	Kohki Takaguchi	Center for Marine Environmental Studies (CMES), Ehime university, Matsuyama, Ehime, Japan	Dr. Kei Nomiya, Ms. Yasuko Nagano, Dr. Hazuki Mizukawa, Dr. Susumu Nakatsu, Prof. Tatsuya Kunisue, Prof. Shinsuke Tanabe
9834	M3-14	08/21/2017	16:05 - 16:25	Brominated Flame Retardants	Junior Ballroom AB	Spatial Distributions and Contamination Patterns of Brominated Flame Retardants in Soil of the Industrial City of Ulsan, South Korea	J-W Jeon	School of Urban and Environmental Engineering, Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea, Republic of	Mrs. J-Y Son, Mr. C-S Kim, Prof. S-D Choi
10125	M4-14	08/21/2017	16:05 - 16:25	POPs in Food and Feed	Junior Ballroom C	Decontamination of pigs exposed to an environmental source of PCB	Philippe Marchand	LUNAM Université, Oniris, UMR INRA 1329 LABERCA, Nantes, France	Mr. Vincent Vaccher, Miss Elodie Lesquin, Ms. Aline Brosseau, Miss Anaïs Vénisseau, Prof.

9895	M5-14	08/21/2017	16:05 - 16:25	Gas/Particle Partition of POPs in	Junior Ballroom D	EVALUATION OF GAS-PARTICLE PARTITIONING OF POLYBROMINATED DIPHENYL ETHERS (PBDEs) IN GLOBAL AIR BY AVAILABLE MODELS	Li-Na Qiao	International Research Center for Arctic Environment and Ecosystem (IRC-AEE), Academy of Environment and Ecology, Harbin Institute of Technology, Harbin, Hei Longjiang, China   International Joint Research Center for Persistent Toxic Substances (IJRC-PTS), State Key Laboratory of Urban Water Resource and Environment, Environment School, Harbin Institute	Mr. Peng-Tuan Hu, Dr. Yi-Fan Li, Dr. Ed Sverko, Dr. Donald Mackay
10104	M6-14	08/21/2017	16:05 - 16:25	Spatial and Temporal Trends of P	Parksville	Bioaccumulation of PCBs, OCPs and PBDEs in marine mammals from West Antarctica	R Lohmann	University of Rhode Island, Narragansett, RI 02882, United States	Dr. MA Khairy, Dr. E Brault, Dr. R Dickhut
9708	P61-E	08/21/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	PBTk modelling to reveal the toxicokinetics of dioxins in dugongs (Dugong dugon)	L Weijs	The University of Queensland - Queensland Alliance for Environmental Health Sciences, Coopers Plains, Queensland, Australia	Prof. L Gross, Dr. S Vijayarathy, Prof. C Gaus
9763	P62-E	08/21/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	Occurrence and Distribution of Organophosphate Flame Retardants (OPFRs) in Soil and Outdoor Settled Dust from A Multi-waste Recycling Area in China	Yu Wang	MOE Key Laboratory of Pollution Processes and Environmental Criteria, College of Environmental Science and Engineering, Nankai University, Tianjin, China	Prof. Hongwen Sun, Mr. Hongkai Zhu, Dr. Yiming Yao, Mr. Hao Chen, Mr. Chao Ren
9743	P63-E	08/21/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	QUANTIFICATION OF TOTAL ORGANOHALOGENS (TOX) IN ENVIRONMENTAL SOLID SAMPLES BY USING COMBUSTION-ION CHROMATOGRAPHY	K Mukai	Department of Environmental Engineering, Graduate School of Engineering, Kyoto University, Kyoto, Japan	Dr. T Fujimori, Mr. K Shiota, Prof. M Takaoka, Prof. S Funakawa, Dr. A Takeda, Dr. S Takahashi
9816	P65-E	08/21/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	Temporal trends of brominated flame retardants and organochlorines in melon-headed whales stranded along the Japanese coastal waters: utilization of samples and data stored in es-BANK and ChemTHEATRE	T Kunisue	Ehime University, Matsuyama, Japan	Dr. K Egashira, Dr. T Isobe, Dr. K Nakayama, Dr. Y Tajima, Dr. TK Yamada, Dr. S Tanabe
10134	P67-E	08/21/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	THE INFLUENCE OF HEXABROMOCYCLODODECANE PRODUCTION PLANT ON SURROUNDING ENVIRONMENT IN AIR AND SOIL	Jing Guo	National Research Center for Environmental Analysis and Measurements,, Beijing, China	
9819	P68-E	08/21/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	Progress in Environmental Behaviors and Toxicity of Perfluoroalkyl Substances (PFASs) Alternatives	Jiayin Dai	Institute of Zoology, Chinese Academy of Sciences, , Beijing, China	Dr. Yitao Pan, Dr. Nan Sheng, Dr. Jianshe Wang
9796	P69-E	08/21/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	Burial of obsolete persistent organic pollutants	A Aleksandryan	Ministry of Nature Protection of the Republic of Armenia, Yerevan, Armenia	Mr. A Khachatryan, Dr. Yu Bunyatyan
10226	P72-E	08/21/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	POPs levels in Norwegian deep-sea fish caught from coastal waters to the open sea	H Hove	National Institute of Nutrition and Seafood Research (NIFES), Bergen, Norway	Dr. S Frantzen, Dr. A Borge, Dr. A Maage
9436	P73-E	08/21/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	Contamination Status of Dioxin in the sediment of Indus River and Coastal Environment of Pakistan	Nuzhat Khan	National Institute of Oceanography, Karachi, Sind, Pakistan	Dr. Asif Inam, Dr. Shahid Amjad
9710	P74-S	08/21/2017	16:30 - 17:00	Sources, formation and transfor	Exhibit Hall	FORMATION OF CHLORINATED AROMATIC COMPOUNDS VIA PRIMARY COMBUSTION OF CARBON NANOMATERIALS WITH SALT	Takashi Fujimori	Department of Environmental Engineering, Graduate School of Engineering, Kyoto University, Kyoto, Japan   Department of Global Ecology, Graduate School of Global Environmental Studies, Kyoto University,	Ms. Asako Toda, Prof. Masaki Takaoka
9746	P75-S	08/21/2017	16:30 - 17:00	Sources, formation and transfor	Exhibit Hall	De novo formation of PCDD/Fs in the drying zone on sintering belt feed: Influence of the temperature, atmosphere varied and particle diameter	Xu Shuaixi	State Key Laboratory of Clean Energy Utilization, Zhejiang University, Hangzhou, China	Prof. Chen Tong, Prof. Li Xiaodong
9702	P76-H	08/21/2017	16:30 - 17:00	Human exposure and epidemiol	Exhibit Hall	Serum Levels of PBDEs, PCB and DDE in Middle-aged and Older California Women: Temporal Trends, 2011-2015	P Reynolds	Cancer Prevention Institue of California, Berkeley, CA, United States   Stanford University School of Medicine, Department of Health Research and Policy, Stanford, Stanford, CA, United States	-- S Hurley, -- D Goldberg, -- DO Nelson, -- W Guo, -- Y Wang, -- H-G Baek, -- J-S Park, -- M Petreas, -- L Bernstein, -- H Anton-Culver



9850	P77-H	08/21/2017	16:30 - 17:00	Human exposure and epidemiology	Exhibit Hall	Determination of Human Exposure Sources for BPA by Using Questionnaire Survey	JY YANG	The Institute for Environmental Research, Yonsei University College of Medicine, Seodaemun-gu, Seoul, Korea, Republic of	Ms. BR WI, Dr. YJ LEE, Mr. GW LEE, Dr. SH JEE, Dr. YS KANG, Dr. YW LIM
9729	P78-H	08/21/2017	16:30 - 17:00	Human exposure and epidemiology	Exhibit Hall	Relationship between serum PCB levels and dietary habit data from brief-type self-administered diet history questionnaire in primipara participants from C-MACH cohort, Japan	Chisato Mori	Center for Preventive Medical Sciences, Chiba University, Chiba, Japan   Department of Bioenvironmental Medicine, Graduate School of Medicine, Chiba University, Chiba, Japan	Ms. Weiwei Jin, Dr. Akifumi Eguchi, Dr. Masahiro Watanabe, Dr. Masae Otake, Dr. Kenichi Sakurai, Dr. Emiko Todaka
10056	P79-H	08/21/2017	16:30 - 17:00	Human exposure and epidemiology	Exhibit Hall	Estimation of Dietary Intake of Dechlorane Flame Retardants in Japan, FY 2016	Tsuguhide Hori	Fukuoka Institute of Health and Environmental Sciences, Dazaifu-shi, Fukuoka, Japan	Mr. Daisuke Yasutake, Ms. Tamaki Sato, Mr. Takahiro Watanabe
10034	P80-R	08/21/2017	16:30 - 17:00	Regulation, policy, risk assessment	Exhibit Hall	Research, communication, and action: PFAS in food contact materials	TA Bruton	Green Science Policy Institute, Berkeley, CA, United States	Dr. SA Balan, Dr. DQ Andrews, Dr. GF Peaslee, Dr. A Blum
9981	P81-R	08/21/2017	16:30 - 17:00	Regulation, policy, risk assessment	Exhibit Hall	Development of Canadian Soil Quality Guidelines for PFOS and PFOA	D Longpré	Health Canada, Longueuil, Québec, Canada	Ms. P Cureton, Mr. L Lorusso
9714	P82-R	08/21/2017	16:30 - 17:00	Regulation, policy, risk assessment	Exhibit Hall	Study on Optimum Treatment Conditions for Chlorinated Flame Retardant and Organochlorine Pesticides Using Thermal Method	Youngsam Yoon	NIER, Seo-gu, Incheon, Korea, Republic of	Ms. EunHye Kwon, Ms. Jisu Bae, Dr. Taewan Jeon, Dr. Sunyoung Shin
10001	P84-A	08/21/2017	16:30 - 17:00	Analysis of emergin and legacy pollutants	Exhibit Hall	The new method for analysis of selected organophosphorus flame retardants (OPFRs) in indoor dust	Jana Pulkrabova	University of Chemistry and Technology, Prague, Prague, Czech Republic	Mr. Tomas Gramblicka, Dr. Darina Lankova, Ms. Miroslava Jerabkova, Prof. Jana Hajsova
10131	P85-A	08/21/2017	16:30 - 17:00	Analysis of emergin and legacy pollutants	Exhibit Hall	Comparison of polybrominated diphenyl ethers (PBDEs) and polychlorinated biphenyls (PCBs) in the serum of hypothyroid and euthyroid dogs	Grace Lau	Department of Molecular Biosciences, School of Veterinary Medicine, University of California-Davis, Davis, CA, United States	Ms. Kyla Walter, Prof. Philip Kass, Dr. Xiaopeng Chen, Prof. Birgit Puschner
12936	P86-A	08/21/2017	16:30 - 17:00	Analysis of emergin and legacy pollutants	Exhibit Hall	Can sheep wool be used as biomarker for dioxin pollution?	KJAM Bouman	NGO ToxicoWatch Foundation, Harlingen, Friesland, Netherlands	Dr. A Arkenbout, Mrs. M Li, Dr. K Olie
10059	P87-A	08/21/2017	16:30 - 17:00	Analysis of emergin and legacy pollutants	Exhibit Hall	Serum microRNA biomarker identification in a residential cohort with elevated polychlorinated biphenyl exposures	Matthew Cave	University of Louisville, Louisville, KY , United States	Dr. Brian Chorley, Dr. Christina Pinkston, Dr. Shesh Rai, Dr. Heather Clair, Mr. Josiah Hardesty, Ms. Gleta Carswell, Ms. Gail Nelson,
9862	P89-T	08/21/2017	16:30 - 17:00	Toxicology	Exhibit Hall	Effect of oral or nasal exposure of TCDD on antigen-specific immunoglobulin production without adjuvants	Tomohiro Yuzuriha	Faculty of Pharmaceutical Sciences, Setsunan University, 45-1, Nagaotoge-cho, Hirakata, Osaka, 573-0101, Japan	Dr. Hideki Kakutani, Dr. Teruyuki Nakao, Prof. Souichi Ohta
9876	P90-T	08/21/2017	16:30 - 17:00	Toxicology	Exhibit Hall	Hexafluoropropylene Oxide Trimer Acid (HFPO-TA) Might not be a Suitable Alternative to Perfluorooctanoic Acid (PFOA)	N Sheng	Key Laboratory of Animal Ecology and Conservation Biology, Institute of Zoology, Chinese Academy of Sciences, Beijing, 100101, China	Miss JH Wang, Dr. YT Pan, Prof. JY Dai
12950	PL-3	08/22/2017	08:30 - 09:15	Plenary III	Grand Ballroom	Environmental Forensics of Persistent Organics Pollutants	G O'Sullivan	Mount Royal University, Calgary, Alberta, Canada	-- D Megson, -- C Sandau, -- D Patterson
12365	P101-E	08/22/2017	09:15 - 09:45	Environmental levels, transport and fate	Exhibit Hall	EFFECT OF SEA WEEDS ON THE SEA FISH	OLUFUNMILAYO REBECCA	THE POLYTECHNIC IBADAN, OYO STATE, Nigeria	
9765	P102-E	08/22/2017	09:15 - 09:45	Environmental levels, transport and fate	Exhibit Hall	BFR occurrence in road dust and its relationship with traffic density	Zhiguo Cao	Henan Normal University, Xinxiang, China	Dr. Leicheng Zhao
9637	P103-E	08/22/2017	09:15 - 09:45	Environmental levels, transport and fate	Exhibit Hall	HUMAN HEALTH RISK ASSESSMENT OF ORGANOCHEMICAL PESTICIDES IN SOME FOODS GROWN IN NIGERIA	A Oyeyiola	University of Lagos, Lagos, Nigeria	Dr. O Fatunsin, Miss L Akanbi, Miss D Fadahunsi, Mr. M Moshood
9851	P104-E	08/22/2017	09:15 - 09:45	Environmental levels, transport and fate	Exhibit Hall	Polycyclic Aromatic Hydrocarbons (PAHs) and Polychlorinated Naphthalenes (PCNs) in Sediment of Hyogo Prefecture, Japan.	Yuki Haga	Hyogo Prefectural Institute of Environmental Sciences, Suma-ku, Kobe, Hyogo, Japan	Mr. Masahiro Tsurukawa, Mr. Ryosuke Yoshiki, Mr. Akishiro Nakagoshi, Mr. Kazuo Fujimori, Prof. Takeshi Nakano, Mr. Chisato Matsumura
12400	P105-E	08/22/2017	09:15 - 09:45	Environmental levels, transport and fate	Exhibit Hall	Occurrence of persistent organic compounds in the surface water from the lower stretch of the River Ganga in India	Paromita Chakraborty	SRM University, Kattankulathur, Tamil Nadu, India	

10148	P106-E	08/22/2017	09:15 - 09:45	Environmental levels, transport and exposure	Exhibit Hall	Organochlorine pesticides monitoring in São Paulo City (Brazil) using passive air sampler as part of the Global Monitoring Plan	MY Tominaga	CETESB-São Paulo State Environmental Company, São Paulo/SP, Brazil	Ms. NA Niwa, Mr. D Plascak, Mr. CAM Souza, Dr. MIZ Sato
9772	P107-E	08/22/2017	09:15 - 09:45	Environmental levels, transport and exposure	Exhibit Hall	Air-seawater gas exchange fluxes of Organophosphate esters in the North Atlantic and Arctic	Jing Li	Helmholtz-Zentrum Geesthacht , Centre for Materials and Coastal Research, Institute of Coastal Research, Geesthacht, Germany	Dr. Zhiyong Xie, Prof. Ralf Ebinghaus, Prof. Kay-Christian Emeis, Mr. Wenyong Mi, Dr. Senchao Lai, Dr. Chongguo Tian
9668	P109-E	08/22/2017	09:15 - 09:45	Environmental levels, transport and exposure	Exhibit Hall	Feature signal extraction from long-term changes in persistent organic pollutants over the Arctic	J Ma	Peking University, Beijing, China	Mr. Y Zhao
9805	P110-E	08/22/2017	09:15 - 09:45	Environmental levels, transport and exposure	Exhibit Hall	THE DISTRIBUTION OF PCDD/Fs IN WATER, SEDIEMENT, BIOLOGY SAMPLES AROUND BIEN HOA AGENT ORANGE HOTSPOT	Van Hai Chu	Center of Analytical Services and Experimentation, Ho Chi Minh, Viet Nam	Dr. Tuan Anh Mai
9791	P111-H	08/22/2017	09:15 - 09:45	Human exposure and epidemiology	Exhibit Hall	Levels of phthalate metabolites and bisphenol A in urine samples from Czech mothers and newborns	K Urbancova	University of Chemistry and Technology, Prague, Czech Republic	Dr. D Lankova, Prof. J Hajslova, Dr. J Pulkrabova
9649	P112-H	08/22/2017	09:15 - 09:45	Human exposure and epidemiology	Exhibit Hall	Persistent Organic Pollutants in Groundwater: Exposure profiles of PAHs and OCPs at an agricultural site of a north Indian terai region	Amit Masih	ST. ANDREW'S COLLEGE, GORAKHPUR, UTTAR PRADESH, India	Prof. Jitendra Lal
9835	P113-H	08/22/2017	09:15 - 09:45	Human exposure and epidemiology	Exhibit Hall	Anthropogenic and Natural Polybrominated Diphenyl Ethers and Polychlorinated Biphenyls in Fish Oil Capsules from Different Countries.	FBM Torres	Radioisotopes Laboratory, Biophysics Institute, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil	Ms. Y Guida, Dr. MB Alonso, Prof. RO Meire, Prof. JPM Torres
10145	P114-R	08/22/2017	09:15 - 09:45	Regulation, policy, risk assessment and management	Exhibit Hall	A Probabilistic Evaluation of the 2016 U.S. EPA Health Advisory for Perfluorooctanoic Acid	A Monnot	Cardno ChemRisk, Pittsburgh, PA, United States	Mr. P Scott, Dr. A Perez, Ms. R Zisook
10032	P115-R	08/22/2017	09:15 - 09:45	Regulation, policy, risk assessment and management	Exhibit Hall	A History of PFAS: Communication and Strategy to Manage their Use	A Blum	Green Science Policy Institute, Berkeley, CA, United States   Department of Chemistry, University of California Berkeley, Berkeley, CA, United States	Dr. TA Bruton
9783	P116-S	08/22/2017	09:15 - 09:45	Sources, formation and transformation	Exhibit Hall	Spatial heterogeneity and factors driving interspecies differences in the exposure to PFASs in Antarctic, subantarctic and southern cool-temperate seabird communities	B Jiménez	Dept of Instrumental Analysis and Environmental Chemistry, Institute of Organic Chemistry, CSIC (IQOG-CSIC), Juan de la Cierva 3, Madrid, Spain, 28006, Spain	Dr. JL Roscales, Ms. A Vicente, Dr. PG Ryan, Dr. J González-Solís
9762	P117-S	08/22/2017	09:15 - 09:45	Sources, formation and transformation	Exhibit Hall	Probing the TiO2 Nanoparticles-induced Photocatalytic Halogenation of Dissolved Organic Matter by Using Ultrahigh Resolution Mass Spectrometry	Jingfu Liu	State Key Laboratory of Environmental Chemistry and Ecotoxicology, Research Center for Eco-environmental Sciences, Chinese Academy of Sciences, Beijing, China	Dr. Zhineng Hao, Dr. Yongguang Yin
9866	P118-T	08/22/2017	09:15 - 09:45	Toxicology	Exhibit Hall	Identification for the biotransformation of BDE209 by in vivo toxicokinetic analysis in Felis catus	K Tanaka	Center for Marine Environmental Studies, Matsuyama-shi, Ehime, Japan	Dr. K Nomiya, Dr. H Mizukawa, Dr. K Takaguchi, Dr. R Tanoue, Dr. Aksorn Saengtienchai, Dr. Tsend-ayush Sainnoxi, Dr. N Yokoyama, Dr. O Ichii, Dr. M Takiguchi, Dr. S
9873	P119-T	08/22/2017	09:15 - 09:45	Toxicology	Exhibit Hall	CHARACTERISTICS OF CONTAMINATION FOR DDT IN THE AIR AND SOIL IN REPUBLIC OF KOREA	Min Jee Kim	Korea Environment Cooperation, Incheon, Korea, Republic of	Miss Su Yeon Jeong
9889	P91-A	08/22/2017	09:15 - 09:45	Analysis of emergin and legacy pollutants	Exhibit Hall	Mass Balance of Per- and Polyfluoroalkyl Substances and Total Fluorine in Food Packaging	L Schultes	Department of Environmental Science and Analytical Chemistry, Stockholm University, Stockholm, Sweden	Mr. O Sandblom, Dr. JP Benskin
9778	P92-A	08/22/2017	09:15 - 09:45	Analysis of emergin and legacy pollutants	Exhibit Hall	GC×GC-HR-TOFMS for screening of organohalogenated compounds in cat hair	M. Brits	Chemistry and Materials Division, National Metrology Institute of South Africa, Pretoria, South Africa   Department Environment and Health, Vrije Universiteit, Amsterdam, Netherlands   Department of Chemistry, University of Pretoria, Pretoria, South	Dr. P. Gorst-Allman , Dr. E.R. Rohwer , Dr. J. De Vos , Dr. J. de Boer, Dr. J.M. Weiss
9705	P93-A	08/22/2017	09:15 - 09:45	Analysis of emergin and legacy pollutants	Exhibit Hall	INVESTIGATION OF UNIDENTIFIED ORGANOCHLORINE COMPOUNDS IN SOIL AFTER OPEN BURNING OF E-WASTE USING TD/PY-GC/MS	C Nishimura	Department of Environmental Engineering, Graduate School of Engineering, Kyoto University, Kyoto, Japan	Mr. T Enomoto, Ms. M Okuno, Ms. Y Akiyama, Mr. S Fujii, Dr. T Fujimori

10027	P94-A	08/22/2017	09:15 - 09:45	Analysis of emergin and legacy p	Exhibit Hall	A New Method for the Analysis of 30 Per- and Polyfluoroalkyl Substances in Maternal Serum	SM Crispo Smith	California Department of Toxic Substances Control, Berkeley, California, United States	Dr. EF Houtz, Ms. W Duong, Ms. A Zamora, Dr. J Villa Romero, Dr. N Wu, Dr. JS Park
9718	P95-A	08/22/2017	09:15 - 09:45	Analysis of emergin and legacy p	Exhibit Hall	Comparing Ionic Liquid and Polysiloxane Stationary Phase Selectivity for the Analysis of Polycyclic Aromatic Hydrocarbons	L. M. Sidisky	MilliporeSigma, Bellefonte, PA , United States	Dr. J. L. Desorcie, Mr. G. A. Baney
9709	P96-A	08/22/2017	09:15 - 09:45	Analysis of emergin and legacy p	Exhibit Hall	APPLICATION OF A SOLVENT-CUT LARGE-VOLUME INJECTION SYSTEM USING DEANS SWITCH-TYPE SILFLOW IN A DIOXIN ANALYSIS OF HUMAN BLOOD	D Yasutake	Fukuoka Institute of Health and Environmental Sciences, Fukuoka, Japan	Dr. K Tobiishi, Mr. H Hirakawa, Ms. Y Shintani, Dr. T Kogiso, Dr. T Hori, Dr. J Kajiwara, Dr. S Katsuki, Dr. C Mitoma, Dr. M Furue
10190	P97-A	08/22/2017	09:15 - 09:45	Analysis of emergin and legacy p	Exhibit Hall	Determination of polychlorinated biphenyls in fish using a polychlorinated biphenyl clean-up system followed by gas chromatography tandem mass spectrometry	Tomoaki Tsutsumi	National Institute of Health Sciences, Kamiyoga 1-18-1, Setagaya-ku, Tokyo, Japan	Dr. Ayato Kawashima, Dr. Noriaki Hamada, Ms. Rika Adachi, Dr. Hiroshi Akiyama
9990	P98-A	08/22/2017	09:15 - 09:45	Analysis of emergin and legacy p	Exhibit Hall	Breakthrough During Air Sampling with Polyurethane Foam: What Do Trap2/Trap1 Ratios Mean?	F. Bidleman	Dept. of Chemistry, Umeå University, Umeå, Sweden	Dr. M. Tysklind
9795	P99-A	08/22/2017	09:15 - 09:45	Analysis of emergin and legacy p	Exhibit Hall	Waste Dumps as a Source of Dioxins and Furans	A Aleksandryan	Ministry of Nature Protection of the Republic of Armenia, Yerevan, Armenia	Mr. A Khachatryan, Mr. F Petrosyan
10229	T1-1	08/22/2017	10:00 - 10:20	New Methods of Analysis	Grand Ballroom AB	Improvements in Detection of Analytes in Environmental Matrices Using GCxGC and Mass Spectrometry	F Dorman	Penn State University, University Park, PA, United States	-- C Stultz, Dr. B Weggler, Dr. E Reiner, Dr. K Jobst, Dr. D Patterson
9721	T4-1	08/22/2017	10:00 - 10:20	Formation, Sources and Remediation	Junior Ballroom C	Levels, profiles and distribution of brominated dioxins and furans from cement kilns co-processing municipal solid wastes	Guorui Liu	Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing, China	Dr. Yuyang Zhao, Dr. Minghui Zheng, Dr. Rong Jin, Dr. Lili Yang, Dr. Xiaolin Wu, Dr. Yang Xu
9632	T5-1	08/22/2017	10:00 - 10:20	Environmental Transport and Fate	Junior Ballroom D	Dioxin degradation and metal biovolatilization at a former wood treating site	Leslie Hardy	Amec Foster Wheeler Environment & Infrastructure, Edmonton, AB, Canada	
12947	T6-1	08/22/2017	10:00 - 10:20	From Science to Decision Making	Parksville	Science and policy developments for controlling chlorinated and brominated dioxins	Shinichi Sakai	Kyoto University, Kyoto, Japan	
11269	T2-1,2	08/22/2017	10:00 - 10:40	Perfluoroalkyl Substances I	Grand Ballroom CD	Implications of the Recently-Discovered PFASs in AFFF-Impacted Groundwater	JA Field	Oregon State University, Corvallis, OR, United States	Dr. KA Barzen-Hanson, Dr. CP Higgins
9954	T1-2	08/22/2017	10:20 - 10:40	New Methods of Analysis	Grand Ballroom AB	Automating Non-targeted Screening for Emerging Contaminants in Great Lakes Trout	B Crimmins	Clarkson University, Potsdam, NY, United States	Mr. S Fakouri Baygi, Prof. P Hopke, Dr. S Fernando, Prof. T Holsen
9926	T3-2	08/22/2017	10:20 - 10:40	Environmental Litigation	Junior Ballroom AB	Emerging Trends in Unregulated Contaminant Litigation: PFCs	A Kanner	Kanner & Whiteley, LLC, New Orleans, La., United States	
9736	T4-2	08/22/2017	10:20 - 10:40	Formation, Sources and Remediation	Junior Ballroom C	Sediment to water flux of persistent organic pollutants from contaminated fiber banks in the Baltic Sea	A-K Dahlberg	Swedish University of Agricultural Sciences, Uppsala, Sweden	Prof. K Wiberg, Miss A Apler, Dr. S Josefsson
10149	T5-2	08/22/2017	10:20 - 10:40	Environmental Transport and Fate	Junior Ballroom D	Understanding the fate of semi-volatile organic pesticides in a glacier-fed lake using a multimedia chemical fate model	KJ Hageman	Department of Chemistry, University of Otago, Dunedin, Otago, New Zealand	Ms. X Wu, Dr. CL Davie-Martin, Dr. C Steinlin, Dr. N Cullen, Dr. C Bogdal
10126	T6-2	08/22/2017	10:20 - 10:40	From Science to Decision Making	Parksville	Assessment of dioxin-like activity in food – implications for policy and regulation	D N Mortimer	Food Standards Agency, London, Great Britain	
10118	T1-3	08/22/2017	10:40 - 11:00	New Methods of Analysis	Grand Ballroom AB	Streamlined workflows for environmental analyses by GCxGC	Matthew Edwards	SepSolve Analytical , Peterborough , Great Britain	Dr. Laura McGregor , Dr. Chris Hall, Mr. Nick Bukowski
9758	T2-3	08/22/2017	10:40 - 11:00	Perfluoroalkyl Substances I	Grand Ballroom CD	Identification of Poly- and Perfluoroalkyl Substances Transformation Products in Aqueous Film-Forming Foam Impacted Wastewater	M. Wang	Department of Toxic Substance Control, Cal EPA, Berkeley, CA, United States	Dr. E. Houtz, Ms. W. Duong, Dr. J-S. Park
10006	T3-3	08/22/2017	10:40 - 11:00	Environmental Litigation	Junior Ballroom AB	Conflicts of Interest Issues in Multi-Party Disputes	Urs Broderick Furrer	Harriton & Furrer, LLP, Armonk, New York, United States	Ms. Sarah Cafran

9766	T4-3	08/22/2017	10:40 - 11:00	Formation, Sources and Remediation	Junior Ballroom C	The effect of CB-209, CN-75 and BDE-209 Chemical Structure to Their Degradation Mechanisms over Fe3O4 Micro/Nano Material	Guijin Su	State Key Laboratory of Environmental Chemistry and Ecotoxicology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences	Miss Qianqian Li, Dr. Linyan Huang, Prof. Minghui Zheng
10177	T5-3	08/22/2017	10:40 - 11:00	Environmental Transport and Fate	Junior Ballroom D	Organic and inorganic persistent pollutants monitoring: emission source identification	M G Bonelli	Università di Roma "La Sapienza", Roma, Italy	Mr. A Colombo, Dr. E Benfenati, Mr. M Lodi, Mr. G Rossetti, Dr. A Manni
9875	T6-3	08/22/2017	10:40 - 11:00	From Science to Decision Making	Parkville	Developing an Estuarine Planning Support System: An integrated tool to managing contaminated sediments in coastal and estuarine environments	J Lonsdale	Cefas, Lowestoft, Suffolk, Great Britain	Prof. M Elliott, Dr. K Weston, Dr. A Birchenough
10054	T1-4	08/22/2017	11:00 - 11:20	New Methods of Analysis	Grand Ballroom AB	The advantages of comprehensive screening techniques in environmental forensic investigations involving POPs	D Megson	Manchester Metropolitan University, Manchester, Great Britain	Mrs. N Benoit, Dr. EJ Reiner, Dr. M Robson, Dr. K Jobst, Miss P Bruce, Dr. GW Johnson
10097	T2-4	08/22/2017	11:00 - 11:20	Perfluoroalkyl Substances I	Grand Ballroom CD	First report on the environmental friendliness of OBS, an alternative to PFOS in fire-fighting foams and oil production agents in China	Yixiang Bao	School of Environment, POPs research center, Tsinghua University, Beijing, China	Miss Yingxi Qu, Prof. Jun Huang, Prof. Gang Yu
10142	T3-4	08/22/2017	11:00 - 11:20	Environmental Litigation	Junior Ballroom AB	Forensic Eco-social Epidemiology of Premenopausal Breast Cancer in Female Customs Inspectors at the Ambassador Bridge	M Gilbertson	Halifax Project, Guelph, Ontario, Canada	
9882	T4-4	08/22/2017	11:00 - 11:20	Formation, Sources and Remediation	Junior Ballroom C	CONTRIBUTION OF FIREWORKS AND OPEN BURNING IN SPANISH POPULAR CELEBRATIONS TO CHLORINATED AND BROMINATED POPs IN AIR	J Muñoz-Arnanz	Department of Instrumental Analysis and Environmental Chemistry, Institute of Organic Chemistry (IQOG-CSIC), Madrid, Spain	Dr. B Gonzalez-Gaya, Dr. JL Roscales, Ms. M Ros, Ms. A Vicente, Dr. B Jimenez
9957	T5-4	08/22/2017	11:00 - 11:20	Environmental Transport and Fate	Junior Ballroom D	Release of Airborne Polychlorinated Biphenyls from New Bedford Harbor Results in Elevated Concentrations in the Surrounding Air	A Martinez	University of Iowa, Iowa City, IA, United States	Miss B Hadnott, Mr. A Awad, Mr. N Herkert, Miss K Tomsho, Miss K Basra, Dr. M Scammell, Dr. W Heiger-Bernays, Dr. K Hornbuckle
10009	T6-4	08/22/2017	11:00 - 11:20	From Science to Decision Making	Parkville	Flame Retardants in Electronics Enclosures: Using Scientific Research to Prevent Unnecessary Health Risks	AE Lindeman	Green Science Policy Institute, Berkeley, CA, USA	Dr. S Petty, Mr. M Kirschner, Dr. A Blum
10053	T1-5	08/22/2017	11:20 - 11:40	New Methods of Analysis	Grand Ballroom AB	Comprehensive targeted and non-targeted analysis of various indoor dust samples using LC-HRMS with Ion Mobility	L Mullin	Waters Corporation, Milford, MA, United States   MTM Research Centre, Örebro, Sweden	Dr. R.A. DiLorenzo, Dr. D.B.D. Simmons, Dr. K Jobst, Dr. M Diamond, Dr. E.J. Reiner
10078	T2-5	08/22/2017	11:20 - 11:40	Perfluoroalkyl Substances I	Grand Ballroom CD	Distribution of per- and polyfluoroalkyl substances (PFASs) in aqueous and terrestrial environment near contamination sources in Sweden	A Koch	Örebro University, Örebro, Sweden	Dr. LWY Yeung, Dr. A Kärrman, Dr. L Ahrens, Dr. M Jonsson, Dr. T Wang
10202	T3-5	08/22/2017	11:20 - 11:40	Environmental Litigation	Junior Ballroom AB	Exploring PCDD/F Data Manipulation using Principal Components Analyses	M.J. Wade	Wade Research, Inc., Marshfield, MA, United States	
9969	T5-5	08/22/2017	11:20 - 11:40	Environmental Transport and Fate	Junior Ballroom D	Contamination Profile of Perfluorinated Compounds (PFCs) in Ambient Water Surrounding a Major Producer in Central China	Mehvish Mumtaz	School of Environment, POPs Research Center, Tsinghua University, Beijing, China	Dr. Jun Huang
9844	T6-5	08/22/2017	11:20 - 11:40	From Science to Decision Making	Parkville	Application of the Theory of Sampling (TOS) on Unintentional produced POPs	A Arkenbout	NGO ToxicoWatch Foundation, Harlingen, Friesland, The Netherlands	Dr. K H Esbensen
9929	T1-6	08/22/2017	11:40 - 12:00	New Methods of Analysis	Grand Ballroom AB	Comprehensive Analysis of the Great Lakes Top Predator Fish for Novel Halogenated Organic Contaminants using GCxGC- HRTOF	S Fernando	Clarkson University, Potsdam, New York, United States	Ms. A Renaguli, Dr. M Milligan, Dr. P Hopke, Dr. B Crimmins, Dr. T Holsen
10013	T2-6	08/22/2017	11:40 - 12:00	Perfluoroalkyl Substances I	Grand Ballroom CD	Evaluation of persulfate oxidation liquid chromatography tandem mass spectrometry for ultra-trace analysis of polyfluoroalkyl substances in water	J. Liu	McGill University, Montréal, QC, Canada	Dr. G. Munoz, Ms. S. Mejia-Avenidaño, Dr. Y. Yao, Dr. K. Volchek, Dr. C.E. Browns, Dr. S. Sauvé
10208	T3-6	08/22/2017	11:40 - 12:00	Environmental Litigation	Junior Ballroom AB	consequences of fire fighting foam contamination	A Kärrman	Örebro university, Örebro, Sweden	

10018	T4-6	08/22/2017	11:40 - 12:00	Formation, Sources and Remediation	Junior Ballroom C	INVESTIGATION AND REMEDIATION OF MULTIPLE PFAS SOURCE ZONES AT AN AIRPORT TO SAFEGUARD A WATER SUPPLY	I. Ross	Arcadis, Leeds, United Kingdom	Mr. J. Lemon, Mr. J. Hurst, Dr. J. Miles, Mr. D. Atkinson
10215	T5-6	08/22/2017	11:40 - 12:00	Environmental Transport and Fate	Junior Ballroom D	CONTRIBUTIONS OF DIOXINS AND FURANS TO THE URBAN SEDIMENT SIGNATURE: THE ROLE OF ATMOSPHERIC PARTICLES	R Loyola	Laboratorio de Dioxinas (LADIOX), Laboratorio de Oceanografía Química, Facultad de Ciencias Naturales y Oceanográficas, Universidad de Concepción, Concepcion, Chile	Dr. M Salamanca, Mr. F Gutierrez, Mrs. C Figueroa, Mr. C Chandia
10030	T6-6	08/22/2017	11:40 - 12:00	From Science to Decision Making	Parksville	The Class Concept: Improved Policy and Purchasing for Organohalogenes	A Blum	Green Science Policy Institute, Berkeley, CA, United States   Department of Chemistry, University of California Berkeley, Berkeley, CA, United States	Dr. TA Bruton, -- AE Lindeman, -- G Goldenman, Dr. ML Diamond
10088	T1-7	08/22/2017	13:00 - 13:20	New Methods of Analysis	Grand Ballroom AB	Passive-sampler based Partitioning, Fluxes and Bioaccumulation of PBDEs in an Urban River	R Lohmann	University of Rhode Island, Narragansett, RI, United States	Dr. M A Khairy
10000	T2-7	08/22/2017	13:00 - 13:20	Perfluoroalkyl Substances I	Grand Ballroom CD	Leaching of chemicals from the durable water repellence layer of textiles with aging	J de Boer	Vrije Universiteit, Amsterdam, Netherlands	Mrs. I van der Veen, Dr. A-C Hanning, Dr. J Weiss, Prof. P Leonards
9739	T3-7	08/22/2017	13:00 - 13:20	Contaminated Sites and Source T	Junior Ballroom AB	Reconstruction of Historical 2,3,7,8-Tetrachlorodibenzodioxin Discharges from a Former Chemical Manufacturing Plant to the Lower Passaic River	R. Parette	Matson & Associates, Inc., State College, PA, United States	Dr. D. J. Velinsky, Dr. W. N. Pearson
10098	T4-7	08/22/2017	13:00 - 13:20	Human Exposure to POPs	Junior Ballroom C	BFR contamination in UK kitchen utensils: Implications for human exposure via transfer to cooking oil and direct dermal contact	S Harrad	University of Birmingham, Birmingham, Great Britain	Mr. J Kuang, Dr. M Abdallah
12964	T5-7	08/22/2017	13:00 - 13:20	Environmental Transport and Fate	Junior Ballroom D	Flame retardants accumulation in the paired egg and plasmas of bald eagle	M Venier	Indiana University, Bloomington, United States	-- J Guo, -- K Simon, -- K Romanak, -- W Bowerman
9757	T6-7	08/22/2017	13:00 - 13:20	POPs in Longitudinal Cohorts	Parksville	Hypertension and Persistent Organic Pollutants in the Anniston Community Health Survey Follow-up	M Pavuk	Agency for Toxic Substances and Disease Registry , Atlanta, Georgia, United States	Mr. E Yang, Mr. M Lewin, Dr. L Birnbaum
10151	T1-8	08/22/2017	13:20 - 13:40	New Methods of Analysis	Grand Ballroom AB	Applying novel analytical approaches for the risk management and monitoring of water systems: Coupling passive sampling with non-target analytical tools	Sarit Kaserzon	Queensland Alliance for Environmental Health Science, Coopers Plains, QLD, Australia	Dr. Jake O'Brien, Dr. Ben Tscharke, Mr. Phil Choi, Prof. Jochen Mueller
10231	T3-8	08/22/2017	13:20 - 13:40	Contaminated Sites and Source T	Junior Ballroom AB	245TCP – Perspectives on PCDD/Fs from a review of industrial processes and historical analysis, and fast forward to opportunities for the future.	P Richards	Chemistry Matters Inc., Calgary, AB, Canada	Dr. C Sandau
9667	T4-8	08/22/2017	13:20 - 13:40	Human Exposure to POPs	Junior Ballroom C	Quantifying the Impact of Weight Changes on the Individual and Population Level on POP Concentrations in Humans	F. Wania	University of Toronto Scarborough, Toronto, Ontario, Canada	Mr. S.A. Wood, Mr. F. Xu, Dr. J.M. Armitage
9761	T5-9	08/22/2017	13:20 - 13:40	Environmental Transport and Fate	Junior Ballroom D	Transesterification can occur in natural and engineering aquatic environments: Taking parabens as an example	Lei Wang	Nankai University, Tianjin, 300350, China	Dr. Tianzhen Liu, Dr. Xinying Gong
10081	T6-8	08/22/2017	13:20 - 13:40	POPs in Longitudinal Cohorts	Parksville	Total dioxin toxic equivalency is associated with altered serologic biomarkers of hepatic lipid metabolism, inflammation, fibrosis, and function in ACHS-II participants with suspected liver disease	M Cave	University of Louisville, Louisville, Kentucky, United States	Ms. C Pinkston, Dr. M Pavuk, Ms. H Clair, Mr. J Hardesty, Dr. H Shi, Dr. R Prough, Mr. K Falkner, Dr. S Rai, Dr. L Birnbaum
9833	T1-9	08/22/2017	13:40 - 14:00	New Methods of Analysis	Grand Ballroom AB	Levels, Temporal trends of PCDDs/PCDFs at IPTD area using passive air sampler and correlation with active air sampling between 2012-2017	Trinh Khac Sau	Institute of BioMedicine, Vietnam-Russia Tropical Centre, Ha Noi, Viet Nam	Dr. Nghiem Xuan Truong, Mr. Nguyen Duc Thang, Mr. Han Duy Linh

9804	T2-9	08/22/2017	13:40 - 14:00	Perfluoroalkyl Substances I	Grand Ballroom CD	OCCURRENCE AND DISTRIBUTION OF PERFLUOROALKYL AND POLYFLUOROALKYL SUBSTANCES (PFASs) IN MULTI-ENVIRONMENTAL MATRICES AROUND TWO FLUORO-CHEMICAL MANUFACTURING PARKS IN FUXIN, CHINA	Zhen Zhao	MOE Key Laboratory of Pollution Processes and Environmental Criteria, College of Environmental Science and Engineering, Nankai University, Tianjin, China	Mr. Hao Chen, Dr. Yiming Yao, Mr. Yu Wang, Mr. Qi Wang, Prof. Hongwen Sun
9937	T3-9	08/22/2017	13:40 - 14:00	Contaminated Sites and Source T	Junior Ballroom AB	Analysis of PCB Congener Profiles in Tree Bark from Sauget, Illinois	Glenn Johnson	University of Utah, Salt Lake City, UT, United States	Dr. Mark Hermanson
9959	T4-9	08/22/2017	13:40 - 14:00	Human Exposure to POPs	Junior Ballroom C	POLYBROMINATED DIPHENYL ETHERS, POLYCHLORINATED BIPHENYLS AND PERSISTENT PESTICIDES IN 7 AND 9 YEAR OLD CHILDREN AND THEIR MOTHERS IN THE CHAMACOS COHORT	Andreas Sjodin	Centers for Disease Control and Prevention, National Center for Environmental Health, Division of Laboratory Sciences, Atlanta, GA, United States	Mr. Richard S. Jones, Dr. Robert B. Gunier, Dr. Lee-Yang Wong, Dr. Nina Holland, Dr. Brenda Eskenazi, Dr. Asa Bradman
10050	T5-10	08/22/2017	13:40 - 14:00	Environmental Transport and Fat	Junior Ballroom D	Quantification of glassware-water partition constants and their impact on humic acid-water partition constants for super-hydrophobic organic contaminants	V.J. Schacht	The University of Queensland - QAEHS, Coopers plains, QLD, Australia   Masaryk University - Recetox, Brno, Czech Republic	Mr. M. Manning, Prof. C. Gaus, Prof. D.W. Hawker, Dr. S.C. Grant
10002	T6-9	08/22/2017	13:40 - 14:00	POPs in Longitudinal Cohorts	Parksville	Positive associations between serum levels of dioxin-like pollutants and the cardiometabolic disease risk biomarker TMAO in residents of Anniston, Alabama	MC Petriello	University of Kentucky Superfund Research Center, Lexington, KY, USA   Division of Cardiovascular Medicine, University of Kentucky, Lexington, KY, USA   Lexington Veterans Affairs Medical Center,	Dr. R Charnigo, Dr. M Sunkara, Dr. S Soman, Dr. M Pavuk, Dr. L Birnbaum, Dr. AJ Morris, Dr. B Hennig
10123	T1-10	08/22/2017	14:00 - 14:20	New Methods of Analysis	Grand Ballroom AB	Evidence for High Concentrations and Maternal Transfer of Substituted Diphenylamines in European Eels Analyzed by by GCxGC-TOF and GC-FTICR-MS	R Suehring	Centre for Environment, Fisheries and Aquaculture Science (Cefas), Lowestoft, Great Britain	Dr. X Ortiz, Dr. M Pena-Abaurrea, Dr. K J Jobst, Mr. M Freese, Mr. J-D Pohlmann, Dr. L Marohn, Dr. R Ebinghaus, Dr. S Backus, Dr. R Hanel, Dr. E J Reiner
9880	T2-10	08/22/2017	14:00 - 14:20	Perfluoroalkyl Substances I	Grand Ballroom CD	Seasonal trends of per- and polyfluoroalkyl substances in river water - impact of hydrological conditions and contamination source types	M. A. Nguyen	Department of Aquatic Sciences and Assessment, Swedish University of Agricultural Sciences, Uppsala, Sweden	Dr. K. Norström, Prof. K. Wiberg, Mr. J. Gustavsson, Dr. S. Josefsson, Dr. L. Ahrens
9982	T3-10	08/22/2017	14:00 - 14:20	Contaminated Sites and Source T	Junior Ballroom AB	Fingerprint Evaluation of PFAS Source, Identification of Surface Partitioning, and Associated Remedial Implications	K Quinn	TRC, Madison, WI, United States	Mr. M Eberle, Mr. M Edelman, Ms. E Denly
10031	T4-10	08/22/2017	14:00 - 14:20	Human Exposure to POPs	Junior Ballroom C	Biomonitoring of dioxins and other chemicals in Japan — Summary of nation-wide survey during 2011–2016	T Isobe	National Institute for Environmental Studies, Tsukuba, Japan	Dr. M Iwai-Shimada, Dr. H Shibuya, Dr. S Tsukahara, Dr. J Kasamatsu, Prof. K Arisawa, Dr. SF Nakayama
9677	T6-10	08/22/2017	14:00 - 14:20	POPs in Longitudinal Cohorts	Parksville	PCB exposure and DNA methylation in the Anniston Community Health Survey	D.A. Bell	NIEHS-NIH, Research Triangle Park, NC, United States	Mr. G.S. Pittman, Dr. X. Wang, Ms. M.R. Campbell, Ms. S.J. Coulter, Dr. J.R. Olson, Dr. M.
9724	P120-A	08/22/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	Development of Qualitative Analytical Method for Unidentified Flame Retardants in Flame-Retardant Curtains Purchased from Japanese Market	Masahiro Tokumura	University of Shizuoka, Shizuoka, Japan	Dr. Qi Wang, Dr. Yuichi Miyake, Dr. Takashi Amagai
10212	P121-A	08/22/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	ORGANOPHOSPHATE FLAME RETARDANTS IN THE CANADIAN ARCTIC	Liisa M Jantunen	Environment Canada, Egbert ON, Canada	Dr. Fiona Wong, Dr. Monika Pucko, Dr. Gary Stern, Ms. Alexis Burt, Dr. Hayley Hung, Dr. Roxana Suhring, Dr. Martin Scheringer, Dr.
9810	P122-A	08/22/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	A Novel Cleanup Procedure for Determining Mono- to Deca-BDE in Lipophilic Matrices	AA Shelepchikov	The All-Russian State Center for Quality and Standardization of Veterinary Drugs and Feed (VGNKI), Moscow, Russian Federation   Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences (IPEE RAS), Moscow, Russian Federation	Dr. VV Ovcharenko, Dr. ES Brodsky, Mr. AI Kozhushkevich, Dr. AA Komarov, Ms. AM Kalantaenko, Ms. KA Turbabin
10046	P123-A	08/22/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	Agent Orange in Viet Nam: Lessons Learned	G Bruce	Hatfield Consultants Partnership, North Vancouver, BC, Canada	Dr. W Dwernychuk, Mr. T Boivin, Mr. D Moats

9725	P124-A	08/22/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	Results of an inter-laboratory polyfluorinated alkyl substances (PFAS) study based on real world samples	Michael Wilken	The Dow Chemical Company, Midland, MI, United States	
9788	P125-A	08/22/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	OCCURRENCE OF SELECTED PESTICIDES IN CANADIAN HOUSE DUST	Cariton Kubwabo	Health Canada, Ottawa, Ontario, Canada	Dr. Pat E Rasmussen, Dr. Genevieve grenier
9645	P126-A	08/22/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	Study on the Treatment of Micro-Polluted Source Water by Ozone/Ceramic Membrane Combined Process	Yishuai Pan	College of Environmental Science and Engineering, Tongji University, Shanghai, China	Dr. Jun Shi, Prof. Huiping Deng
9906	P127-A	08/22/2017	14:20 - 14:50	Analysis of emergin and legacy p	Exhibit Hall	Toxicity Identification Evaluation of Dioxin-Related Compounds in Dust from End-of-Life Vehicle Recycling Sites in Northern Vietnam	S Takahashi	Center for Advanced Technology for the Environment (CATE), Graduate School of Agricultural Sciences, Ehime University, Matsuyama, Japan   Center for Marine Environmental Studies (CMES), Ehime	Ms. C Chika, Dr. NM Tue, Dr. G Suzuki, Dr. LH Tuyen, Prof. PH Viet, Prof. S Tanabe, Prof. S Sakai
9679	P128-E	08/22/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	(Re)Emerging Halogenated Flame Retardants in Predator and Prey Fish From the Laurentian Great Lakes: Age-Dependent Accumulation and Trophic Transfer	R.J. Letcher	Ecotoxicology and Wildlife Health Division, Environment and Climate Change Canada, National Wildlife Research Centre, Carleton University, Ottawa, Ontario, Canada	Dr. G. Su, Mr. D.J. McGoldrick, Mr. S.M. Backus
9775	P129-E	08/22/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Organophosphate flame retardants and plasticizers in the atmosphere of Bohai and Yellow Seas	Jing Li	Helmholtz-Zentrum Geesthacht, Centre for Materials and Coastal Research, Institute of Coastal Research, Geesthacht, Germany	Dr. Zhiyong Xie, Dr. Jianhui Tang, Mrs. Wenying Mi, Dr. Chongguo Tian, Prof. Ralf Ebinghaus
9776	P130-E	08/22/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Development of an LC-MS/MS Analytical Method for Pesticides	Takahiro NISHINO	Tokyo Metropolitan Research Institute for Environmental Protection, Tokyo, Japan	
9770	P131-E	08/22/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Can well-managed municipal solid waste incinerator be an environmental threat anymore?--a case study based on four consecutive year monitoring in Beijing	L Qi	National Research Center for Environmental Analysis and Measurement, Beijing, China	Ms. Y Ren, Dr. Z Zhou, Mr. P Xu, Mr. S Zheng, Mr. H Zhao, Mr. S Fan, Dr. A Liu, Dr. Y Huang, Ms. H Li, Mr. Z Zhao, Mr. J Wang
10026	P131-E	08/22/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Persistent Organic Pollutants (POPs) and emergent compounds (EC) in the marine food web of Central Chile: What is the influence of emergent pollutants such as Microplastics?	K Pozo	Universidad Catolica, Concepcion, Chile   Masaryk University, Recetox, Brno, Czech Republic	Dr. P Pribylova, Dr. P Karaskova, Dr. O Audy, Dr. V Gomez, Dr. S Contreras, Dr. L Gerli, Dr. G Lammel, Dr. J Klanova
12934	P133-E	08/22/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Dioxins in Lake Ontario: Is the Niagara River Watershed Still a Source of Contamination 50 Years later?	D.A. Burniston	Environment and Climate Change Canada, Burlington, Ontario, Canada	Dr. C Marvin
10203	P134-E	08/22/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Differences in the contamination by organohalogen compounds between coastal and oceanic populations of Sula leucogaster	FBM Torres	1Institute of Biophysics Carlos Chagas Filho, Rio de Janeiro, Brazil	Miss FV Mello, Dr. MB Alonso, Dr. JPM Torres
10072	P135-E	08/22/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Historical changes in pulpmill-related dioxin contamination in coastal marine ecosystems of British Columbia, 1989 to 2015.	ME Davies	Hatfield Consultants, North Vancouver, BC, Canada	Mr. C Schwindt, Dr. ME Azim, Dr. LW Dwernychuk
10096	P136-E	08/22/2017	14:20 - 14:50	Environmental levels, transport a	Exhibit Hall	Structural basis of CB118 metabolism by bacterial cytochrome P450 monooxygenase and its mutants with perfluorocarboxylic acids	E Goto	Graduate School of Agricultural Science, Kobe University, Kobe, Hyogo, Japan	Dr. Y Haga, Mr. M Kubo, Dr. T Itoh, Mr. C Kasai, Dr. O Shoji, Dr. K Yamamoto, Mr. C Matsumura, Dr. T Nakano, Dr. H Inui
9994	P137-H	08/22/2017	14:20 - 14:50	Human exposure and epidemiolo	Exhibit Hall	Children's exposure to brominated flame retardants in indoor microenvironments	Olga-Ioanna Kalantzi	University of the Aegean, Mytilene, Greece	Mrs. Eleftheria Malliari
9871	P138-H	08/22/2017	14:20 - 14:50	Human exposure and epidemiolo	Exhibit Hall	Comparison of Brominated and Phosphorus Flame Retardants (FR) in Human Breast Milk Samples of Japan Based FR Demands	S Ohta	Setsunan University, Hirakata, Japan	Dr. H Kakutani, Ms. T Yuzuriha, Dr. T Nakao
10155	P139-H	08/22/2017	14:20 - 14:50	Human exposure and epidemiolo	Exhibit Hall	Longitudinal Patterns of Early Life Exposure to PBDEs	Whitney Cowell	Columbia Center for Children's Environmental Health, Department of Environmental Health Sciences, Mailman School of Public Health, Columbia University, New York, NY, United States	Dr. Andreas Sjodin, Dr. Richard Jones, Miss Ya Wang, Dr. Shuang Wang, Dr. Julie Herbstman

10154	P140-R	08/22/2017	14:20 - 14:50	Regulation, policy, risk assessment	Exhibit Hall	Short-Chain Chlorinated Paraffins (SCCPs), a Toxic Industrial Chemical Included for Global Prohibition, Contaminate Children's Toys	P.K. Miller	Alaska Community Action on Toxics, Anchorage, Alaska, USA	Dr. J. DiGangi, Dr. J. Pulkrabová, Dr. J. Tomasko
9686	P141-R	08/22/2017	14:20 - 14:50	Regulation, policy, risk assessment	Exhibit Hall	Human health risks related to the consumption of foodstuffs of plant and animal origin produced on a site polluted by chemical munitions of the First World War	B Le Bizec	LUNAM Université, Oniris-LABERCA, UMR INRA 1329, Nantes, France	Dr. S Gorecki, Dr. F Nesslany, Dr. D Hubé, Dr. J-U Mullot, Prof. P Vasseur, Prof. E Marchioni, Prof. V Camel, Dr. L Noël, Prof. C Feidt, Dr. X Archer, Dr. A Mahe, Dr. G Rivière
9825	P142-R	08/22/2017	14:20 - 14:50	Regulation, policy, risk assessment	Exhibit Hall	PCDD/Fs in Waste Incineration Fly Ash	L Bell	Arnika - Toxics and Waste Programme,, Prague, Czech Republic	Mr. J Petrlík
9849	P143-S	08/22/2017	14:20 - 14:50	Sources, formation and transformation	Exhibit Hall	Occurrence and potential sources of brominated/chlorinated dibenzo-p-dioxins in mussels from the Seto Inland Sea, Japan	Akitoshi Goto	Center for Marine Environmental Studies, Matsuyama, Japan	Dr. Tue Nguyen, Dr. Masayuki Someya, Dr. Tomohiko Isobe, Dr. Shin Takahashi, Prof. Shinsuke Tanabe, Prof. Tatsuya Kunisue
9974	P144-S	08/22/2017	14:20 - 14:50	Sources, formation and transformation	Exhibit Hall	Distribution and composition of brominated/chlorinated dioxins and diphenyl ethers in surface soil from Agbogbloshe, Ghana	NM Tue	Ehime University, Matsuyama, Ehime, Japan	Mr. T Matsushita, Mr. A Goto, Dr. T Itai, Dr. KA Asane, Prof. S Tanabe, Prof. T Kunisue
9907	P145-S	08/22/2017	14:20 - 14:50	Sources, formation and transformation	Exhibit Hall	Brominated catechols and guaiacols as possible sources of dihydroxylated PBDEs and hydroxylated dioxins in bivalves from Asia-Pacific	Koichi Haraguchi	Daiichi University of Pharmacy, Fukuoka, Japan	Dr. Yukiko Fujii, Dr. Osamu Kimura, Dr. Tetsuya Endo, Dr. Yoshihisa Kato, Dr. Chiho Ohta, Dr. Nobuyuki Koga
9914	P146-T	08/22/2017	14:20 - 14:50	Toxicology	Exhibit Hall	Undernutrition combined with dietary mineral oil enhance depuration through fecal excretion of stored dioxin (TCDD) and polychlorinated biphenyls (PCBs) in ewe	Philippe Marchand	LUNAM Université, Oniris, LABERCA, INRA UMR 2013, Nantes, France	Dr. Sylvain Lerch, Dr. Ronan Cariou, Dr. Lucille Rey-Cadilhac, Dr. Catherine Jondreville, Dr. Carole Delavaud, Dr. Yannick Faulconnier, Dr. Sébastien Alcouffe, Dr. Pascal Faure, Prof. Bruno
9893	P147-T	08/22/2017	14:20 - 14:50	Toxicology	Exhibit Hall	Metabolism of chiral polychlorinated biphenyls by mammalian cytochrome P450 monooxygenases	T Ito	Graduate School of Agricultural Science, Kobe University, Kobe, Hyogo, Japan	Ms. C Miwa, Dr. Y Haga, Ms. E Goto, Dr. T Itoh, Dr. K Yamamoto, Mr. S Mise, Dr. C Matsumura, Dr. T Nakano, Dr. H Inui
9640	P148-T	08/22/2017	14:20 - 14:50	Toxicology	Exhibit Hall	Hydroxylated Polybrominated Biphenyl Ethers Exert Estrogenic Effects via Non-genomic G Protein Coupled Estrogen Receptor Pathways	Liang-Hong Guo	Research Center for Eco-environmental Sciences, Beijing, China	Ms. Lin-Ying Cao, Dr. Xiao-Min Ren
10166	P149-T	08/22/2017	14:20 - 14:50	Toxicology	Exhibit Hall	Perinatal Exposure to Low-Dose DE-71 Produces Metabolic Disease Phenotype in Adult Female C57BL6 Mice	EV Kozlova	Department of Cell Biology & Neuroscience University of California Riverside, Riverside, CA, United States	Miss JM Krum, Mr. K Basappa, Mr. R Martirosian, Mr. SA Uddin, Dr. MC Curras-Collazo
9826	T1-11	08/22/2017	15:05 - 15:25	New Methods of Analysis	Grand Ballroom AB	A Quick, High Throughput, Low Solvent Extraction and DCM-Free Sample Clean Up for Same Day POPs Analysis	R Addink	Toxic Report, Watertown MA 02472, United States	Mr. R Juma, Dr. P Germansderfer, Mr. T Hall
10022	T2-11	08/22/2017	15:05 - 15:25	PCBs in Schools and Other Indoor	Grand Ballroom CD	Use of PCBs at World War II Manufacturing Sites	WJ Shields	Exponent, Bellevue, WA, USA	Dr. J Pietari, Ms. T. Sparacio
9760	T3-11	08/22/2017	15:05 - 15:25	Agent Orange in Vietnam	Junior Ballroom AB	The Role of Scientific Studies in Addressing the Legacy of Agent Orange in Vietnam	CR Bailey	Aspen Institute, Washington, D.C., United States	Dr. LK Son
12928	T5-11	08/22/2017	15:05 - 15:25	Emerging Contaminants: Lessons	Junior Ballroom D	How the Study of Dioxins led to Understanding a Key Regulatory Protein, the Ah Receptor	L Birnbaum	National Cancer Institute at NIEHS, North Carolina, United States	
10008	T6-11	08/22/2017	15:05 - 15:25	POPs in Longitudinal Cohorts	Parkville	Peripubertal Serum Organochlorine Concentrations and Longitudinal Growth to Young Adulthood among Russian Boys	J Burns	Harvard T.H. Chan School of Public Health, Boston, MA, United States	Dr. O Sergeev, Dr. P Williams, Dr. M Lee, Dr. S Korrick, Dr. B Revich, Dr. R Hauser
9840	T1-12	08/22/2017	15:25 - 15:45	New Methods of Analysis	Grand Ballroom AB	Thermal desorption GC/MS analysis method for PCBs in organic pigments 2	Takeshi Nakano	Osaka University, Osaka, Japan	Mr. Hiroshi Takakuwa, Dr. Takashi Kasamatsu, Dr. Sadao Nakamura, Mr. Masahiro Okuda, Mr.
9701	T2-12	08/22/2017	15:25 - 15:45	PCBs in Schools and Other Indoor	Grand Ballroom CD	Comparison of Passive and Active Air Sampling (PAAS) Methods for PCBs – A Pilot Study in New York City Schools	G Hunt	TRC Environmental Corporation, Lowell, MA, United States	Mr. M Lorber, Mr. K Thomas, Mr. M Maddaloni, Mr. E Gerds, Ms. E Denly, Mr. J Bourbon, Mr. A Sigona
10007	T3-12	08/22/2017	15:25 - 15:45	Agent Orange in Vietnam	Junior Ballroom AB	Identification of Potential Dioxin Hotspots in Laos, with Comparisons to Vietnam	S Hammond	War Legacies Project Inc, Chester, VT , United States	Mr. TG Boivin, Dr. A Dean, Mr. GS Bruce, Mr. B Pierce, Dr. W Dwernychuk



9750	T4-12	08/22/2017	15:25 - 15:45	Human Exposure to POPs	Junior Ballroom C	Influence of the circulating lipids component and options for assessing the link between internal exposure to POPs and health: a compared approach applied to endometriosis	German Cano-Sancho	LUNAM Université, Oniris, UMR 1329 Laboratoire d'Etude des Résidus et Contaminants dans les Aliments (LABERCA), Nantes, France   INRA Centre Angers-Nantes, Nantes, France	Dr. Stéphane Ploteau, Dr. Christelle Volteau, Dr. Arnaud Legrand, Dr. Anaïs Vénisseau, Dr. Vincent Vacher, Dr. Philippe Marchand, Dr. Bruno Le Bizec, Dr. Jean-Philippe Antignac
10138	T5-12	08/22/2017	15:25 - 15:45	Emerging Contaminants: Lessons	Junior Ballroom D	The PFAS Story: Lessons from the Past for Environmental Chemistry	C. A. Ng	University of Pittsburgh, Pittsburgh, PA, United States	
10052	T6-12	08/22/2017	15:25 - 15:45	POPs in Longitudinal Cohorts	Parkville	Gene-Dioxin Interactions and Birthweight in the Seveso Second Generation Health Study	J Ames	Center for Environmental Research & Children's Health (CERCH), School of Public Health, University of California, Berkeley, Berkeley, California, United	Dr. M Warner, Dr. N Holland, Dr. P Mocarelli, Dr. P Brambilla, Dr. S Signorini, Dr. B Eskenazi
10197	T1-13	08/22/2017	15:45 - 16:05	New Methods of Analysis	Grand Ballroom AB	An Analytical Method for Polycyclic Aromatic Hydrocarbons and their Derivatives in Fish Oil Derived from Grilled Fish.	Misato Masuda	University of shizuoka, shizuoka, Japan	Dr. Qi Wang, Dr. Masahiro Tokumura, Dr. Yuichi Miyake, Prof. Takashi Amagai
9670	T2-13	08/22/2017	15:45 - 16:05	PCBs in Schools and Other Indoor	Grand Ballroom CD	Airborne PCBs and OH-PCBs inside and outside urban and rural U.S. schools	RF Marek	IHR-Hydroscience and Engineering, The University of Iowa, Iowa City, IA, United States	Prof. PS Thorne, Mr. NJ Herkert, Mr. AM Awad, Prof. KC Hornbuckle
9919	T3-13	08/22/2017	15:45 - 16:05	Agent Orange in Vietnam	Junior Ballroom AB	DIOXIN CONCENTRATIONS IN FISH AND RESULTANT HUMAN HEALTH RISK IN BIEN HOA, VIET NAM	T Boivin	Boivin Enterprises Inc., Salt Spring Island, BC, Canada	Dr. K Sorenson, Mr. P Chenevey, Mr. D Moats, Dr. H Pohl, Mr. J Durant
9812	T4-13	08/22/2017	15:45 - 16:05	Human Exposure to POPs	Junior Ballroom C	INTEGRATED EXPOSURE, TOXICOLOGY AND EPIDEMIOLOGY STUDIES: ASSOCIATIONS OF DOSING AMOUNTS, INTERNAL DOSES, LIFE STAGE, AND SEX FOR NEUROTOXIC AND ENDOCRINE EFFECT CATEGORIES	T. Muir	Environment Canada – Retired. , Burlington, Ontario, Canada	Dr. J. E. Michalek, Dr. R. Palmer
9927	T5-13	08/22/2017	15:45 - 16:05	Emerging Contaminants: Lessons	Junior Ballroom D	Screening of Global Chemical Inventories for Substances with Arctic Accumulation Potential	D.C.G. Muir	Environment & Climate Change Canada, Burlington ON, Canada	Dr. X. Zhang, Dr. C. de Wit, Dr. K. Vorkamp
9624	T6-13	08/22/2017	15:45 - 16:05	POPs in Longitudinal Cohorts	Parkville	DDT and PBDE exposure and obesity in CHAMACOS women	M Warner	Center for Environmental Research & Children's Health (CERCH), School of Public Health, University of California, Berkeley, California, United States	Mr. S Rauch, Dr. K Harley, Dr. K Kogout, Dr. A Sjödin, Dr. B Eskenazi
10219	T1-14	08/22/2017	16:05 - 16:25	New Methods of Analysis	Grand Ballroom AB	Development and Application of a Simplified in vivo Test for Estimating Biotransformation Rate Constants of Organic Chemicals in Fish	M DiMauro	Simon Fraser University, Burnaby, British Columbia, Canada	Dr. FAPC Gobas, Dr. CJ Kennedy
9756	T2-14	08/22/2017	16:05 - 16:25	PCBs in Schools and Other Indoor	Grand Ballroom CD	Current Approaches for Evaluating Potential Health Risks from Polychlorinated Biphenyls in Indoor School Air	GM Lehmann	U.S. Environmental Protection Agency, Research Triangle Park, NC, United States	Dr. LJ Phillips
10048	T3-14	08/22/2017	16:05 - 16:25	Agent Orange in Vietnam	Junior Ballroom AB	Full-Scale Thermal Treatment of Agent Orange Dioxins at Danang Airport, Vietnam	K Sorenson	CDM Smith, Denver, CO, United States	Mr. J Bamer, Mr. A Lopez, Mr. P Chenevey, Ms. R Chichakli, Dr. R Baker, Dr. G Heron, Mr. T
10110	T4-14	08/22/2017	16:05 - 16:25	Human Exposure to POPs	Junior Ballroom C	Urtrasonographic Examination (After59Years)of Yusho Victims Who Are Left Behind	Reiko Takeda	TokyoUniv.Dept.Pharmaco-Business-InnovationGraduateSchoolofPharmceuticalScienceJ, Bunkyo,Tokyo, apan,	
9888	T5-14	08/22/2017	16:05 - 16:25	Emerging Contaminants: Lessons	Junior Ballroom D	Hazardous compounds released from textiles	L Lundin	Department of Chemistry, Umeå University, Umeå,	Dr. P Haglund
10211	T6-14	08/22/2017	16:05 - 16:25	POPs in Longitudinal Cohorts	Parkville	Serum Polychlorinated Biphenyls and Leukocyte Telomere Length in a Highly Exposed Population: The Anniston Community Health Survey.	LS Birnbaum	National Cancer Institute at NIEHS, Research Triangle Park, NC 27709, United States	Dr. CL Callahan, Dr. M Pavuk, Dr. X Ren, Dr. JR Olson, Dr. MR Bonner
10130	P150-A	08/22/2017	16:30 - 17:00	Analysis of emerging and legacy	Exhibit Hall	Application of LC-Orbitrap HRMS with positive/negative ion-switching for analysis of Pharmaceutical and Personal Care Products (PPCPs)	K-H Nguyen	School of Geography, Earth and Environmental Sciences, University of Birmingham, Birmingham, Great Britain	Dr. M Abdallah, Ms. J Anekwe, Prof. S Harrad
9688	P151-A	08/22/2017	16:30 - 17:00	Analysis of emerging and legacy	Exhibit Hall	Examination of Commercial Samples of Perfluoroethylcyclohexane Sulfonate: Another Source of PFOS Isomers	N Riddell	Wellington Laboratories Inc., Guelph, ON, Canada	Dr. A McAlees, Dr. R McCrindle, Mr. T Stefanac, Mr. B Chittim

9884	P152-A	08/22/2017	16:30 - 17:00	Analysis of emerging and legacy	Exhibit Hall	Simultaneous determination of PCDD/Fs, Dioxin-like PCBs and Indicator PCBs in Food	YoungWoon Kang	Ministry of Food and Drug Safety, Cheongju, Chungbuk, Korea, Republic of	Mr. Jinseong Yang, Miss Jeeun Ahn, Mrs. Taesook Im, Dr. Shinhee Kim, Dr. Giljin Kang
10051	P153-A	08/22/2017	16:30 - 17:00	Analysis of emerging and legacy	Exhibit Hall	Stakeholder Engagement and Capacity Building Training in Dioxin Remediation_Dioxin 2017_Short abstract form	J Mason	Hatfield Consultants, North Vancouver, BC, Canada	Ms. M Patterson, Ms. R Chichakli, Mr. P Nguyen, Mr. T Boivin, Mr. P Chenevey, Mr. D Moats
9728	P154-A	08/22/2017	16:30 - 17:00	Analysis of emerging and legacy	Exhibit Hall	Development of the analytical method of for persistent organic pollutants (POPs) in serum using gas chromatography - negative ion chemical ionization mass spectrometry	Akifumi Eguchi	Center for Preventive Medical Sciences, Chiba University, Chiba, Japan	Dr. Takeshi Enomoto, Dr. Chisato Mori
9831	P155-A	08/22/2017	16:30 - 17:00	Analysis of emerging and legacy	Exhibit Hall	Automated, Low Background, Solid Phase Extraction of Perfluorinated Compounds, Pharmaceuticals, and Personal Care Products in Water Samples	PM Germansderfer	Fluid Management Systems, Watertown MA 02472, United States	Dr. R Addink, Mr. HR Shirkhan, Mr. TG Hall
9965	P156-A	08/22/2017	16:30 - 17:00	Analysis of emerging and legacy	Exhibit Hall	Participation in 2016 Inter-laboratory Study on Fish Tissue Reference Materials	E Sandell	Nab Labs Ltd, Jyväskylä, Finland	Mrs. H Ojaniemi, Miss E Pajunen
10029	P157-A	08/22/2017	16:30 - 17:00	Analysis of emerging and legacy	Exhibit Hall	Passive Sampling with GC-APCI-QToF for Target and Non-target Analyses of Halogenated Organic Contaminants in Wastewater and Natural Water	X Zhang	Department of Chemistry, Brock University , St. Catharines, ON, Canada   Ontario Ministry of the Environment and Climate Change, Toronto, ON,	Dr. RA Di Lorenzo, Dr. K Jobst, Dr. M Robson, Dr. P Helm, Dr. EJ Reiner, Dr. I Brindl
10174	P158-A	08/22/2017	16:30 - 17:00	Analysis of emerging and legacy	Exhibit Hall	PCDD/F formation from 2,4,6- trichlorophenol added model fly ash	Ishrat Mubeen	1State Key Laboratory for Clean Energy Utilization, Institute for Thermal Power Engineering, Zhejiang University, Hangzhou, China	Prof. Alfons Buekens, Prof. Shengyong Lu, Prof. Jianhua Yan
9808	P159-E	08/22/2017	16:30 - 17:00	Ecosystems and wildlife species	Exhibit Hall	The concentration of OCPs and PCBs in Oriental White Stork(Ciconia boyciana)Tissue	Lin Zhu	Nankai University, Tianjin, China	Ms. Cancan Wang
9803	P160-E	08/22/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	Identification and Evaluation of New Chlorinated Paraffin Classes in Environmental Matrices	Lirong Gao	Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing, China	Dr. Dan Xia, Dr. Minghui Zheng
10063	P161-E	08/22/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	The Investigation of the Organochlorine Pesticides Residues in Soil of Taiwan	Yuan Cheng Hsu	Environmental Analysis Laboratory, Taiwan EPA, Zhongli, Taiwan	Mr. Chung Ping Wu, Mr. Sung Yung Yi, Mr. Huang Yan Chia, Mr. Ying Ming Weng
10113	P162-E	08/22/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	Distributions and Risk Assessment of Cyclic Volatile Methylsiloxanes in Surface Water Collected from Tokyo Bay Watershed in Japan	Yuichi Horii	Center for Environmental Science in Saitama, Kazo, Japan	Dr. Kotaro Minomo, Dr. Mamoru Motegi, Dr. Nobutoshi Ohtsuka, Dr. Shusuke Takemine
12939	P163-E	08/22/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	Use of Passive Samplers to Monitor PCBs in the Effluent Water from a Waste Water Treatment Plant	C. Brimacombe	Ministry of Environment and Climate Change , Ontario, Canada	Dr. P. Helm, Dr. M. Robson, Dr. E. J. Reiner, -- K. MacPherson
12935	P165-E	08/22/2017	16:30 - 17:00	Environmental levels, transport a	Exhibit Hall	The occurrence of OCPs, PCBs, and PAHs in the soil, air, and particle deposition of provincial and metropolitan Naples areas, Italy: Implications for potential risk and environmental cycling	Benedetto De Vivo	University of Naples Federico II, Naples 80125, Italy	Dr. chengkai qu, Prof. Stefano Albanese, Prof. Annamaria Lima, Dr. Dave Hope, Dr. Alberto Fortelli , Dr. Rolandi Roberto, Dr. Pellegrino Cerino, Dr. Antonio Pizzolante
9821	P166-H	08/22/2017	16:30 - 17:00	Human exposure and epidemiolo	Exhibit Hall	Occurrence of organophosphate flame retardants in food and dietary intake estimation by the Belgian adult population	G Poma	Toxicological Center, University of Antwerp, Universiteitsplein 1, 2610 Wilrijk, Belgium	Mr. B Bruyland, Miss C Christia, Mr. C Sales, Dr. S Goscinny, Dr. J Van Loco, Prof. A Covaci
10092	P167-H	08/22/2017	16:30 - 17:00	Human exposure and epidemiolo	Exhibit Hall	Internal exposure of the U.K. population to Persistent Organic Pollutants	D Drage	University of Birmingham, Birmingham , United Kingdom   University of Queensland, Brisbane,	Dr. T.K Cunningham, Dr. A Heffernan, Dr. L Aylward, Dr. J Mueller, Dr. T Sathyapalan, Dr. S
10136	P168-H	08/22/2017	16:30 - 17:00	Human exposure and epidemiolo	Exhibit Hall	A 5-year longitudinal follow up trend in levels of POP plasma concentrations extracted using a 96-well plate method	J Stubleski	MTM, School of Science and Technology, Örebro University, Örebro, Sweden	Dr. P Kukucka, Dr. S Salihovic, Dr. P.M. Lind, Dr. L Lind, Dr. A Kärrman
9814	P169-H	08/22/2017	16:30 - 17:00	Human exposure and epidemiolo	Exhibit Hall	Biomonitoring of Halogenated Organics and Metals in Residents of Rural Northern Vietnam	A Schecter	University of Louisville, Louisville, KY , United States	Dr. H Quynh, Dr. J Kincaid, Dr. S Rashid, Dr. K Jawad, Dr. M Ahmed, Dr. L Birnbaum

12310	P169-R	08/22/2017	16:30 - 17:00	Regulation, policy, risk assessment	Exhibit Hall	The bioaccessibility of polychlorinated biphenyls (PCBs) and polychlorinated dibenzo-p-dioxins/furans (PCDD/Fs) in cooked plant and animal origin foods	Haitao Shen	Zhejiang Provincial Center for Disease Control and Prevention, Hangzhou, China	Dr. James Starr, Dr. Jianlong Han
9727	P170-R	08/22/2017	16:30 - 17:00	Regulation, policy, risk assessment	Exhibit Hall	Evaluation of Treatment Possibility for Waste Containing Brominated Flame Retardants by Using Thermal Method	Eunhye Kwon	NIER, Seo-gu, Incheon, Korea, Republic of	Dr. Youngsam Yoon, Ms. Jisu Bae, Dr. Kiheon Kim, Dr. Taewan Jeon, Dr. Sunkyoung Shin
9716	P171-R	08/22/2017	16:30 - 17:00	Regulation, policy, risk assessment	Exhibit Hall	Evaluation of Treatment Possibility for Waste Containing Organic Chlorine-Based Pesticides by Using Thermal Method	Jih wan son	NIER, Seo-gu, Incheon, Korea, Republic of	Dr. Youngsam Yoon, Ms. Eunhye Kwon, Ms. Jisu Bae, Dr. Taewan Jeon, Dr. Sunkyoung Shin
10023	P172-S	08/22/2017	16:30 - 17:00	Sources, formation and transformation	Exhibit Hall	PCBs in Bottles Water and Water Storage Containers Including Teflon	K Hope	Pacific Rim Laboratories Inc., Surrey, BC, Canada	Mr. M Wright, Mr. D Hope
9932	P173-S	08/22/2017	16:30 - 17:00	Sources, formation and transformation	Exhibit Hall	DIOXIN RESIDUE LEVEL IN DONG SON COMMUNE, A LUOI DISTRICT, IN MIDDLE REGION OF VIETNAM	Nguyen Hung Minh	Vietnam Environmental Administration, Hanoi, Viet Nam	Dr. Le Thi Hai Le, Mrs. Nguyen Van Thuong, Mrs. Nguyen Van Quan
9947	P174-S	08/22/2017	16:30 - 17:00	Sources, formation and transformation	Exhibit Hall	Mechanochemical treatment of fly ash and de novo testing of milled fly ash	Y Peng	State key lab of clean energy utilization, hangzhou, China	
9651	P175-T	08/22/2017	16:30 - 17:00	Toxicology	Exhibit Hall	TRANSGENERATIONAL EFFECTS OF DI-(2-ETHYLHEXYL) PHTHALATE (DEHP) EXPOSURE ON SPERM FUNCTIONS IN MALE RATS	Ping-Chi Hsu	Department of Safety, Health and Environmental Engineering, National Kaohsiung First University of Science and Technology, Kaohsiung, Taiwan	Prof. Yueliang Leon Guo, Dr. Hung-Che Chiang, Ms. Jia-Ying Zhong, Mr. Jia-Jun Pan, Dr. Fu-Jen Cheng
12944	P176-T	08/22/2017	16:30 - 17:00	Toxicology	Exhibit Hall	Tetrabromobisphenol A and 2,4,6-Tribromophenol Alter P-glycoprotein Activity in Rat Brain Microvessels	G Knudsen	NCI, Research Triangle Park, NC, United States	Dr. R Cannon, Mr. A Trexler, Dr. L Birnbaum
12949	PL-4	08/23/2017	08:30 - 09:15	Plenary IV	Grand Ballroom	Science and Policy of POPs through Passive Air Sampling	Tom Harner	Environment and Climate Change Canada (ECCC), Toronto, Ontario, Canada	
10165	P178-A	08/23/2017	09:15 - 09:45	Analysis of emerging and legacy	Exhibit Hall	Rapid analysis of phthalate metabolites in human urine using a liquid chromatography-tandem mass spectrometer	Xu Zhang	Alberta Centre for Toxicology, University of Calgary, Calgary, AB, Canada	Ms. D El-Mougi, Dr. A MacDonald, Mr. A Al-Darmaki, Dr. D Kinniburgh
9747	P179-A	08/23/2017	09:15 - 09:45	Analysis of emerging and legacy	Exhibit Hall	DecaBDE might be associated with inhibition of thyroid hormone levels in serum of Japanese cats	Kei Nomiyama	Center for Marine Environmental Studies (CMES), Ehime University, Matsuyama, Japan	Mr. Yasuo Yamamoto, Dr. Hazuki Mizukawa, Prof. Mitsuyoshi Takiguchi, Dr. Akifumi Eguchi, Dr. Shouta Nakayama, Dr. Yoshinori Ikenaka, Prof. Mayumi Ishizuka, Prof. Tatsuya Kunisue,
10038	P180-A	08/23/2017	09:15 - 09:45	Analysis of emerging and legacy	Exhibit Hall	Thermal desorption GC/MS analysis method for analysis of POPs in solid sample	Hiroshi Takakuwa	Agilent Technologies, Japan, Tokyo, Japan	Dr. Takashi Kasamatsu, Dr. Sadao Nakamura, Mr. Masahiro Okuda, Mr. Katsunori Anezaki,
12371	P181-A	08/23/2017	09:15 - 09:45	Analysis of emerging and legacy	Exhibit Hall	Analyte Loss in PFAS Analysis – Evidence from Labelled Internal Standard and Spiked non-Labelled PFAS Compound Recoveries and Interlaboratory Split Samples	SF Gormley	Amec Foster Wheeler, Portland, OR, United States	Ms. A Bernhardt, Ms. ML Bevier, Ms. C Larsen, Ms. J Wetmore, Ms. N Perry-Freer, Ms. S Thomas
9784	P182-A	08/23/2017	09:15 - 09:45	Analysis of emerging and legacy	Exhibit Hall	Novel method for simultaneous determination of perfluoroalkyl acids, parabens and cotinine from a low volume human serum sample	P Ruokojärvi	National Institute for Health and Welfare, Kuopio, Finland	Mr. J Koponen, Prof. H Kiviranta
10039	P183-A	08/23/2017	09:15 - 09:45	Analysis of emerging and legacy	Exhibit Hall	Poly- and Perfluoroalkyl Substances (PFAS) in AFFF-Impacted Groundwater Using Targeted and Non-Target Screening by High Resolution Mass Spectrometry with SWATH® Acquisition	C Butt	AB SCIEX, Framingham, MA, United States	Dr. S Roberts, Dr. C Higgins, Dr. P Winkler, Mr. C Borton
9830	P184-A	08/23/2017	09:15 - 09:45	Analysis of emerging and legacy	Exhibit Hall	Fast and Reproducible Pesticide Residue Analysis in Minutes	TG Hall	Fluid Management Systems, Watertown MA 02472, United States	Dr. PM Germansderfer, Dr. R Addink, Mr. HR Shirkhan
10070	P185-A	08/23/2017	09:15 - 09:45	Analysis of emerging and legacy	Exhibit Hall	INTERFLAB 2: Results of an interlaboratory comparison of novel halogenated flame retardants in test mixtures and indoor dust	L Melymuk	Research Centre for Toxic Compounds in the Environment (RECETOX), Masaryk University, Brno, Czech Republic	Prof. ML Diamond, Dr. N Riddell, Dr. Y Wan

12932	P188-E	08/23/2017	09:15 - 09:45	Ecosystems and wildlife species	Exhibit Hall	Sources of dietary contaminant exposure and relationships with pathogen prevalence in Atlantic walrus (Odobenus rosmarus rosmarus) from Svalbard, Norway	SE Scotter	UiT - The Arctic University of Norway, Tromsø, Troms, Norway	Prof. M Tryland, Dr. IH Nymo, Dr. M Harju, Dr. L Hanssen, Prof. AT Fisk, Dr. J Klein, Dr. C Lydersen, Prof. KM Kovacs, Dr. H Routti
9934	P189-E	08/23/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Spatial Distribution of Polychlorinated Biphenyls in Air Considering Three Areas from the Metropolitan Region of São Paulo, Brazil	JV de Assunção	University of São Paulo, São Paulo/State of São Paulo, Brazil	Ms. AP Francisco, Dr. MY Tominaga, Ms. CR Silva
10191	P190-E	08/23/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Regional Characteristics and Temporal Trends of Methylsiloxanes in the Atmospheric Environment, Saitama, Japan –Simultaneous Analysis for 20 Compounds–	Yuichi Horii	Center for Environmental Science in Saitama, Kazo, Japan	Dr. Kotaro Minomo, Dr. Nobutoshi Ohtsuka, Dr. Mamoru Motegi, Dr. Kiyoshi Nojiri, Dr. Shusuke Takemine, Dr. Nobuyoshi Yamashita
10080	P191-E	08/23/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Characterization of polychlorinated biphenyls (PCBs) in indoor dusts from electricity power stations in Lagos, Nigeria	M Abdallah	School of Geography, Earth, and Environmental Sciences, University of Birmingham, Birmingham, United Kingdom	Ms. B Rabi, Dr. T Oluseyi, Prof. S Harrad, Prof. K Olayinka
9813	P192-E	08/23/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	A major latex-like protein is a determinative factor for contamination of persistent organic pollutants in Cucurbitaceae family	H Inui	Biosignal Research Center, Kobe University, Kobe, Hyogo, Japan   Graduate School of Agricultural Science, Kobe University, Kobe, Hyogo, Japan	Ms. M Suwa, Ms. A Iwabuchi
12943	P193-E	08/23/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Review of the worldwide concentrations of medium-chain chlorinated paraffins (MCCP) in environmental samples and biota	Juliane Glüge	ETH Zurich, Zurich, Switzerland	Prof. Konrad Hungerbühler, Dr. Christian Bogdal
9912	P194-E	08/23/2017	09:15 - 09:45	Environmental levels, transport a	Exhibit Hall	Crucial steps for crop contamination by persistent organic pollutants in Cucurbitaceae family	M Suwa	Graduate School of Agricultural Science, Kobe University, Kobe, Hyogo, Japan	Ms. A Iwabuchi, Dr. K Ikeda, Dr. H Inui
9789	P196-H	08/23/2017	09:15 - 09:45	Human exposure and epidemiolo	Exhibit Hall	Associations between changes in serum levels of perfluoroalkyl substances (PFASs) and changes in serum lipids over 10-years in a longitudinal cohort study	Linda Dunder	Department of Medical Sciences, Occupational and Environmental Medicine, Uppsala University, Uppsala, Sweden	Dr. Samira Salihovic, Miss Jordan Stubleski, Dr. Anna Kärrman, Dr. Lars Lind, Dr. Monica Lind
10173	P197-H	08/23/2017	09:15 - 09:45	Human exposure and epidemiolo	Exhibit Hall	The cohort study on relation of dioxin levels in breast milk with steroid hormone concentrations from three to seven-year-old Vietnamese children	T Kido	Kanazawa University, Kanazawa, Japan	Dr. S Honma, Mrs. Y Kido, Mrs. NTP Oanh, Mr. HD Phuc, Miss Y Oyama, Mr. LT Anh, Mr. NH Viet, Dr. M Nishijo, Dr. H Nakagawa, Dr. HD Manh, Dr. DD Nhu, Dr. DV Tung, Dr. NM Tan, Dr.
10238	P199-H	08/23/2017	09:15 - 09:45	Human exposure and epidemiolo	Exhibit Hall	The long-term consequences of herbicides and defoliants used in Vietnam during the war time	Nguyen Thi Ngoc Phuong	Vietnam Association for Victims of Agent Orange/Dioxin, Hanoi, Viet Nam	Dr. Tran Ngoc Tam
9759	P200-H	08/23/2017	09:15 - 09:45	Human exposure and epidemiolo	Exhibit Hall	Exposure of Polybrominated Diphenyl Ethers, Polychlorinated Biphenyls, and Pesticides in the Anniston Community Health Survey Follow-up	L Birnbaum	National Cancer Institute, Research Triangle Park, North Carolina, United States	Mr. E Yang, Dr. A Sjodin, Dr. R Jones, Mr. M Lewin, Dr. M Pavuk
9905	P201-R	08/23/2017	09:15 - 09:45	Regulation, policy, risk assessme	Exhibit Hall	Brominated flame retardants at the farm scale: outputs of the French project "BRAVIPORC" (2013–2016)	Alexis Léon	LUNAM Université, Oniris, UMR INRA 1329 LABERCA, Nantes, France	Dr. Ronan Cariou, Dr. Elisabeth Baéza , Dr. Elena Dominguez-Romero, Miss Elsa Omer , Mr. Christophe Souchet, Dr. Jérémy Ratel, Miss Anaïs Vénisseau, Mr. Philippe Marchand, Dr. Erwan Engel, Dr. Gaud Dervilly-Pinel, Dr. Bertrand Méda, Dr. Adeline Huneau-Salaün, Prof. Bruno Le Bizec, Dr. Eric Royer, Dr. Sophie
12937	P202-S	08/23/2017	09:15 - 09:45	Sources, formation and transfor	Exhibit Hall	Occurrences of Perfluoroalkyl Substances and Their Total Oxidisable Precursors Assay in Aquatic Biota in Thailand, Vietnam and Japan	Y Suzuki	Graduate School of Global Environmental Studies, Kyoto University, Kyoto, Japan	Dr. S Tanaka, Dr. R Kitao, Dr. M Nakada, Dr. S Yukioka, Dr. SK Boontanon, Dr. VQ Tran, Dr. S Fujii
9436	P203-S	08/23/2017	09:15 - 09:45	Sources, formation and transfor	Exhibit Hall	Contamination Status of Dioxin in the sediment of Indus River and Coastal Environment of Pakistan	Nuzhat Khan	National Institute of Oceanography, Karachi, Sind, Pakistan	Dr. Asif Inam, Dr. Shahid Amjad

9993	P205-T	08/23/2017	09:15 - 09:45	Toxicology	Exhibit Hall	Protein and metabolite responses in rainbow trout ( <i>Oncorhynchus mykiss</i> ) exposed to TBBPA-DBPE	DBD Simmons	Department of Chemistry, McMaster University, Hamilton, ON, Canada	Dr. JP Sherry, Dr. B Chandramouli, Dr. JR Cosgrove
9928	P206-T	08/23/2017	09:15 - 09:45	Toxicology	Exhibit Hall	Source Apportionment of Hazardous Composition and In Vitro Cytotoxicity Test of Fine Particulate Matter (PM2.5) at Different Area in Taiwan	Wen Xuan Huang	Institute of Environmental and Occupational Health Sciences, National Yang Ming University, Taipei, 112, Taiwan	Miss Pei Chun Tsai, Prof. Yune Fang Ueng, Mr. Yuan Cheng Hsu, Miss Yi Na Li, Miss Yi Ting Liou, Miss Yu Shiang Yang, Miss Hsin Yu Yang, Prof. Kai Hsien Chi
10077	W1-1	08/23/2017	10:00 - 10:20	Non-target Screening and Detern	Grand Ballroom AB	Non-target and suspect screening of organic chemicals in indoor dust from five countries	P. Leonards	VU University, Amsterdam, Netherlands	Mrs. L. Lucattini, Dr. M. Lamoree, Prof. J. de Boer
10091	W3-1	08/23/2017	10:00 - 10:20	Remediation, Best Available Tech	Junior Ballroom AB	Regulated Brominated Flame Retardants in Irish Waste Plastics: Obstacles to the Circular Economy	D Drage	University of Birmingham, Birmingham, United Kingdom	Mr. M Sharkey, Dr. H Berresheim, Prof. S Harrad, Dr. M Abdallah
9644	W4-1	08/23/2017	10:00 - 10:20	General – Environmental Levels d	Junior Ballroom C	Dechlorane Plus in Surface Soil of North China: Levels, Isomer Profiles, and Spatial Distribution	Jin Ma	Chinese Research Academy of Environmental Sciences, Beijing, China	
9953	W6-1	08/23/2017	10:00 - 10:20	Neurotoxicity of Legacy and Eme	Parksville	Extended Structure–Activity Relationship of PCBs Evaluates and Supports Modeling Predictions and Identifies Picomolar Potency Towards Ryanodine Receptors	Isaac Pessah	UC Davis, Davis, CA, USA	Dr. Wei Feng, Dr. Erika Holland
11274	W2-1,2	08/23/2017	10:00 - 10:40	Perfluoroalkyl Substances II	Grand Ballroom CD	The Importance of Aqueous Film Forming Foam (AFFF)-derived Poly- and Perfluoroalkyl substances (PFASs) as Drinking Water Contaminants	C.P. Higgins	Department of Civil and Environmental Engineering, Colorado School of Mines, Golden, Colorado, United States	Mr. X. Xiao, Dr. B.A. Ulrich, Prof. B. Chen
10114	W1-2	08/23/2017	10:20 - 10:40	Non-target Screening and Detern	Grand Ballroom AB	Using hair for biomonitoring studies: analytical challenges to be addressed	Jana Hajslova	University of Chemistry and Technology, Prague, Prague, Czech Republic	Dr. Darina Lankova, Ms. Katerina Urbancova, Prof. Jana Pulkrabova
9643	W3-2	08/23/2017	10:20 - 10:40	Remediation, Best Available Tech	Junior Ballroom AB	Catalytic degradation of Polybrominated Diphenyl Ethers (PBDEs) in the effluent gas during a novel thermal desorption process	Long Zhao	State Key Laboratory of Environmental Criteria and Risk Assessment, Chinese Research Academy of Environmental Sciences, Beijing, China	Dr. Feiyue Fan, Prof. Qi Zhang, Prof. Hong Hou
9942	W4-2	08/23/2017	10:20 - 10:40	General – Environmental Levels d	Junior Ballroom C	Polychlorinated hydroxybornanes - metabolites of toxaphene in livers of polar bears ( <i>Ursus maritimus</i> )	W Vetter	University of Hohenheim, Stuttgart, Germany	Mrs. L Reger, Mr. C Gallistl, Prof. K Skirnisson
9793	W5-2	08/23/2017	10:20 - 10:40	Persistent Organic Pollutants (PC	Junior Ballroom D	HISTORIC PCB RECORDS IN A SEDIMENT CORE FROM AN ESTUARINE WETLAND IN THE RIO DE LA PLATA, ARGENTINA	J.C. Colombo	Laboratorio de Química Ambiental y Biogeoquímica (LAQAB-UNLP), La Plata, Buenos Aires, Argentina   Comisión de Investigaciones Científicas (CIC), La Plata, Buenos Aires, Argentina	Mr. C.N. Skorupka, Dr. M. Astoviza, Dr. M.C. Migoya, Dr. M. Morrone, Dr. C. Bilos, Dr. L.M. Tatone, Dr. E.D. Speranza
9792	W6-2	08/23/2017	10:20 - 10:40	Neurotoxicity of Legacy and Eme	Parksville	Neurotoxicity of Legacy and Emerging Persistent Organic Chemicals: A Proteomic Approach to Understand Adverse Outcome Pathways	PRS Kodavanti	Neurotoxicology Branch, USEPA, TAD/NHEERL/ORD, Research Triangle Park, NC, United States	
9786	W1-3	08/23/2017	10:40 - 11:00	Non-target Screening and Detern	Grand Ballroom AB	Characterization of pyrogenic polycyclic aromatic hydrocarbons and other organic compounds generated in an uncontrolled tire landfill fire	L. Ramos	Department of Instrumental Analysis and Environmental Chemistry, IQOG-CISC, Juan de la Cierva 3, Madrid 28006, Spain	Mr. J. Escobar-Arnanz, Mrs. S. Mekni , Dr. G. Blanco , Dr. E. Eljarrat, Prof. D. Barcelo
9995	W2-3	08/23/2017	10:40 - 11:00	Perfluoroalkyl Substances II	Grand Ballroom CD	Analytical assessment of perfluoroalkyl and polyfluoroalkyl surfactants in firefighting foam impacted soils	J. Liu	McGill University, Montréal, QC, Canada	Dr. G. Munoz, Ms. S. Mejia-Avenidaño, Dr. S. Vo Duy, Ms. P. Ray, Prof. S. Sauvé
9715	W3-3	08/23/2017	10:40 - 11:00	Remediation, Best Available Tech	Junior Ballroom AB	Evaluation of Treatment Possibility for Waste Containing Chlorine-Based Flame Retardant by Using Thermal Method	Younsam Yoon	NIER, Seo-gu, Incheon, Korea, Republic of	Ms. Eunhye Kwon, Ms. Jisu Bae, Dr. Taewan Jeon, Dr. sunkyoung Shin
10120	W4--3	08/23/2017	10:40 - 11:00	General – Environmental Levels d	Junior Ballroom C	Environmental impact of biomass and polyethylene waste co-firing: emissions of particulate matter, PCDD/Fs and DL-PCBs	S Mosca	CNR - IIA, 00015 Monterotondo (RM), Italy	Mr. E Guerriero, Mr. M Rotatori, Mr. M Perilli, Mr. P Benedetti, Mrs. M Cerasa, Mr. A Budonaro
10220	W5-3	08/23/2017	10:40 - 11:00	Persistent Organic Pollutants (PC	Junior Ballroom D	POPs in <i>Mytilus californianus</i> from coast and islands off Baja California, Mexico.	J. Vinicio Macías-Zamora	Universidad Autonoma de Baja California, Ensenada, Baja California, Mexico	Dr. Nancy Ramírez-Alvarez, Mr. Félix A. Hernández-Guzmán

10172	W6-3	08/23/2017	10:40 - 11:00	Neurotoxicity of Legacy and Eme	Parksville	Altered neocortical circuitry in mice exposed perinatally to polybrominated diphenyl ethers	MC Curras-Collazo	Department of Cell Biology & Neuroscience, Univ. California, Riverside, California, United States	Dr. J Krum, Dr. k Huffman
9899	W1-4	08/23/2017	11:00 - 11:20	Non-target Screening and Deter	Grand Ballroom AB	Screening halogenated contaminants in the marine environment based on high resolution mass spectrometry profiling	Alexis Léon	LUNAM Université, Oniris, UMR INRA 1329 LABERCA, Nantes, France   Laboratoire Biogéochimie des Contaminants Organiques, LBCO, IFREMER, Nantes,	Dr. Ronan Cariou, Dr. Catherine Munsch , Dr. Céline Tixier , Dr. Gaud Dervilly-Pinel, Prof. Bruno Le Bizec
9861	W2-4	08/23/2017	11:00 - 11:20	Perfluoroalkyl Substances II	Grand Ballroom CD	Influence of a commercial sorbent on the leaching behaviour and bioavailability of selected perfluoroalkyl acids (PFAAs) from soil impacted by AFFF	J Braeunig	Queensland Alliance for Environmental Health Sciences, Brisbane, QLD, Australia	Dr. C Baduel, Prof. J Mueller
10175	W3-4	08/23/2017	11:00 - 11:20	Remediation, Best Available Tech	Junior Ballroom AB	Strategies for the mechanochemical destruction of POP stockpiles and POP contaminated wastes	Giovanni Cagnetta	Tsinghua University, Beijing, China	Dr. K Zhang, Dr. H Wang, Dr. J Huang, Dr. M Lu, Prof. G Yu
10086	W4-4	08/23/2017	11:00 - 11:20	General – Environmental Levels d	Junior Ballroom C	Chlorinated persistent organic pollutants in blood serum of New Zealand adults, 2011-2013	J Coakley	Centre for Public Health Research, Massey University, Wellington, New Zealand	Mr. P Bridgen, Dr. M Bates, Prof. J Douwes, Prof. A 't Mannelje
10033	W5-4	08/23/2017	11:00 - 11:20	Persistent Organic Pollutants (PO	Junior Ballroom D	Legacy Organochlorine Pesticides and Methylmercury in Amazon Catfish (ageneiosus brevifilis): Risk Assessment for Riverside People	FBM Torres	Radioisotopes Laboratory, Biophysics Institute, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil	Mr. EBV Silva, Ms. AS Lino, Mrs. R Capella, Ms. Y Guida, Prof. JPM Torres
10060	W6-4	08/23/2017	11:00 - 11:20	Neurotoxicity of Legacy and Eme	Parksville	Silent Developmental Neurotoxicity and mTOR Signaling	A. Suvorov	University of Massachusetts, Amherst, MA, United States	
10003	W1-5	08/23/2017	11:20 - 11:40	Non-target Screening and Deter	Grand Ballroom AB	Characterization of POPs in California Condors using Comprehensive Two-Dimensional Gas Chromatography (GCxGC) with High Resolution Time of Flight Mass Spectrometry and Novel Spectral Analysis Tools	DE Alonso	LECO Corporation, St. Joseph/Michigan, United States	Ms. J Cossaboon, Dr. E Hoh, Dr. C Tubbs, Mr. J Binkley
9858	W2-5	08/23/2017	11:20 - 11:40	Perfluoroalkyl Substances II	Grand Ballroom CD	Evaluation of the Removal Efficiency of Per- and Polyfluoroalkyl Substances in Drinking Water	L Ahrens	Department of Aquatic Sciences and Assessment, Swedish University of Agricultural Sciences (SLU),	Ms. N Belkouteb, Mr. P McCleaf, Ms. V Franke, Prof. S Köhler
10137	W3-5	08/23/2017	11:20 - 11:40	Remediation, Best Available Tech	Junior Ballroom AB	Validation of a PCDD /Fs long-term emission sampling system at a large sinter plant for assessment of compliance to permitted Emission Limit Values	V Esposito	ARPA PUGLIA, Environmental Protection Agency of Apulia, Department of Taranto, Taranto, Italy	Dr. D Bruno, Dr. A Maffei, Dr. R Giua, Dr. A Nicosia, Dr. S Ficocelli
10021	W4-5	08/23/2017	11:20 - 11:40	General – Environmental Levels d	Junior Ballroom C	UNDERSTANDING FATE AND TRANSPORT OF PFAS TO DEVELOP EFFECTIVE CONCEPTUAL SITE MODELS	I. Ross	Arcadis, Leeds, United Kingdom	Dr. J. McDonough, Mr. J. Hurst, Dr. J. Miles, Dr. E. Houtz, Mr. J. Burdick
9696	W5-5	08/23/2017	11:20 - 11:40	Persistent Organic Pollutants (PO	Junior Ballroom D	Organochlorine Pesticides (OCPs) in commercial fish from Guanabara Bay of Rio de Janeiro State, Brazil	JPM Torres	Biophysics Institute - Rio de Janeiro Federal University, Rio de Janeiro, Brazil	Miss VB Ferreira, Mr. LF Estrella, Mr. MGR Alves, Prof. FDB Abadio-Finco
10040	W6-5	08/23/2017	11:20 - 11:40	Neurotoxicity of Legacy and Eme	Parksville	Comparative developmental and neurotoxicity of Replacement Organophosphate Flame Retardants with Polybrominated Diphenyl Ethers using in vitro and complementary models	Mamta Behl	National Toxicology Program. NIEHS, RTP, United States	
10037	W1-6	08/23/2017	11:40 - 12:00	Non-target Screening and Deter	Grand Ballroom AB	High resolution accurate mass LC/MS, chemometrics and statistical analysis for the identification of emerging organic contaminants of significance in Water	M Kim	Agilent Technologies Inc, Wilmington, DE, United States	Dr. T Anumol, Dr. L Kennedy, Dr. J Zweigenbaum
9885	W2-6	08/23/2017	11:40 - 12:00	Perfluoroalkyl Substances II	Grand Ballroom CD	New Proposal of International Standard of Poly and Per-Fluorinated Alkyl Substances (PFASs) Measurements in Water Samples	S Taniyasu	National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, Japan, Tsukuba, Ibaraki, Japan	Dr. EJ Reiner, Dr. E Yamazaki, Dr. N Yamashita, Mr. S Sasaki, Dr. K Kannan
9887	W4-6	08/23/2017	11:40 - 12:00	General – Environmental Levels d	Junior Ballroom C	BAT AND BEP IMPLEMENTATION TO REDUCE PCDD/PCDFs EMISSIONS IN ESEA COUNTRIES: TECHNOLOGY SELECTION AND MONITORING RESULTS	Carmela Centeno	UNIDO, Vienna, Austria	Dr. Massimo Gobbi, Dr. Andrea Sbrilli

10127	W5-6	08/23/2017	11:40 - 12:00	Persistent Organic Pollutants (POPs)	Junior Ballroom D	What wild bird eggs tell us about persistent organic pollutants in South Africa?	CR Swiegelaar	National Metrology Institute of South Africa, Pretoria, Gauteng, South Africa	Dr. LP Quinn, Dr. A Polder, Prof. R Pieters, Prof. H Bouwman
10106	W6-6	08/23/2017	11:40 - 12:00	Neurotoxicity of Legacy and Emerging Chemicals	Parksville	Integrative approach to developmental neurotoxicity induced by low-dose perinatal exposure to industrial chemicals	C Tohyama	HESTIC, Tokyo, Japan	
12952	PL-V	08/24/2017	08:30 - 09:15	Plenary V	Grand Ballroom	The role of environmental chemicals in obesity	J Legler	Brunel University , London, United Kingdom	
9787	P207-A	08/24/2017	09:15 - 09:45	Analysis of emerging and legacy chemicals	Exhibit Hall	MAXIMIZED PRODUCTIVITY FOR DIOXIN, PCBs and PBDE ANALYSIS USING DUALDATA MODE WITH MAGNETIC SECTOR GC-HRMS	H Mehlmann	Thermo Scientific, Bremen, Germany	Dr. D Krumwiede
9890	P208-A	08/24/2017	09:15 - 09:45	Analysis of emerging and legacy chemicals	Exhibit Hall	Temporal Trends of Per- and Polyfluoroalkyl Substances in Baltic Cod	L Schultes	Department of Environmental Science and Analytical Chemistry, Stockholm University, Stockholm, Sweden	Mr. O Sandblom, Dr. K Broeg, Dr. A Bignert, Dr. JP Benskin
10101	P209-A	08/24/2017	09:15 - 09:45	Analysis of emerging and legacy chemicals	Exhibit Hall	Short- and medium-chain chlorinated paraffins-The blank issue	A Borgen	NILU-Norwegian Institute for Air Research, Kjeller, Norway	Ms. M Nipen, Dr. PB Nizzetto
12940	P210-A	08/24/2017	09:15 - 09:45	Analysis of emerging and legacy chemicals	Exhibit Hall	New methodologies for the analysis of halogenated persistent organic pollutants using GC-Q-Orbitrap	N. Cortés-Francisco	Laboratori de l'Agència de Salut Pública de Barcelona, Avinguda Drassanes 13-15, 08001 Barcelona, Spain	Mr. I. Beguiristain, Mrs. A. Alongi, Dr. A. Rubies
9800	P211-A	08/24/2017	09:15 - 09:45	Analysis of emerging and legacy chemicals	Exhibit Hall	Development and validation of GCxGC-MS/MS method for the determination of PCDD/Fs and dl-PCBs in human serum	jingguang li	China National Central for Food Safety Risk Assessment, Beijing, China	Miss shuaixing yin, Miss bing lyu, Dr. lei zhang, Dr. yunfeng zhao, Dr. yongning wu
10185	P212-A	08/24/2017	09:15 - 09:45	Analysis of emerging and legacy chemicals	Exhibit Hall	A Greener, Faster and Highly Automated Sample Cleanup Approach For Dioxin and POPs Analysis	Li Shen	Ontario Ministry of the Environment and Climate Change, Toronto, Ontario, Canada	Dr. Eric Reiner, Ms. Karen MacPherson, Ms. Terry Kolic, Mr. Liad Haimovici, Ms. Christy
9852	P214-A	08/24/2017	09:15 - 09:45	Analysis of emerging and legacy chemicals	Exhibit Hall	Study on Dioxin Concentration Characteristics in Residential, Commercial and Industrial Areas	Bong Ho Yun	Korea Environment Corporation, Incheon, Korea, Republic of	Mr. Yong Ho Cha
12930	P215-E	08/24/2017	09:15 - 09:45	Ecosystems and wildlife species	Exhibit Hall	Maternal transfer and body distribution of legacy and emerging brominated flame retardants in finless porpoises (Neophocaena phocaenoides) collected from Korean coastal waters	Bit-Na Gu	Hanyang University, Ansan, Korea, Republic of	Ms. Yunsun Jeong, Dr. Gyum-Joon Park, Prof. Hyo-Bang Moon
9811	P216-E	08/24/2017	09:15 - 09:45	Environmental levels, transport and fate	Exhibit Hall	Levels and profiles of legacy and emerging PFRs in car dust from Greece	A Covaci	University of Antwerp, Wilrijk-Antwerp, Belgium	Miss C Christia, Dr. A Besis, Prof. C Samara, Dr. G Poma
10196	P217-E	08/24/2017	09:15 - 09:45	Environmental levels, transport and fate	Exhibit Hall	Combination of Total organofluorine analysis (TOF) and total oxidizable precursor (TOP) assay for unidentified PFAS	Leo W.Y. Yeung	MTM Research Centre, Örebro University, Örebro, Sweden	Miss Jenny Jansson, Dr. Anna Kärrman
10234	P218-E	08/24/2017	09:15 - 09:45	Environmental levels, transport and fate	Exhibit Hall	Source Analysis of Dioxins in River Water using Non-negative Matrix Factorization	Nobutoshi Ohtsuka	Center for Environmental Science in Saitama, Kazo, Japan	Dr. Kotaro Minomo, Dr. Shunji Hashimoto
10108	P219-E	08/24/2017	09:15 - 09:45	Environmental levels, transport and fate	Exhibit Hall	Levels and compositions of Perfluorinated chemicals in muscle tissues of Antarctic toothfish (Dissostichus mawsoni)	Inseok Lee	National Institute of Fisheries Science, Busan, Korea, Republic of	Dr. Minkyu Choi, Dr. Raehong Jeong
9836	P220-E	08/24/2017	09:15 - 09:45	Environmental levels, transport and fate	Exhibit Hall	Levels of PFOS and the other perfluorinated organic compounds in Polish inland waters and Baltic Sea coastal waters	I Wójcik	Institute of Geography, Jan Kochanowski University , Kielce, Poland	Prof. A Grochowalski, Prof. W Krzyński, Dr. M Rybka, Prof. T Kalicki
9722	P221-E	08/24/2017	09:15 - 09:45	Environmental levels, transport and fate	Exhibit Hall	Atmospheric Occurrence of PAHs in Antarctica using XAD-2 resin based Passive Air Samplers	J.-H. Kang	Korea Polar Research Institute (KOPRI), Incheon, Korea, Republic of	Mr. S.-J. Lee, Dr. S.-D. Choi
9918	P222-E	08/24/2017	09:15 - 09:45	Environmental levels, transport and fate	Exhibit Hall	Levels of heavy metals and their possible health risks from consumption of fish and fishery products in Korea, 2010 to 2016	Sungyong Kim	Busan Regional office, National Fisheries Products Quality Management Service, Busan, Korea, Republic of	Dr. Jangwook Lee, Dr. Hyunmi Jung, Dr. Jiwoo Lee, Dr. Sangjo Kim
9999	P223-E	08/24/2017	09:15 - 09:45	Environmental levels, transport and fate	Exhibit Hall	The impact of the different fertilization on the soil contamination by organic pollutants	Jana Pulkrabova	University of Chemistry and Technology, Prague, Prague, Czech Republic	Ms. Andrea Svarcova, Mr. Tomas Gramblicka, Dr. Darina Lankova, Prof. Jirina Szakova, Dr. Jindrich Cerny, Prof. Jana Hajslova

9973	P224-E	08/24/2017	09:15 - 09:45	Environmental levels, transport and exposure	Exhibit Hall	Assessment of Polychlorinated Biphenyls (PCBs) in some foods commonly consumed in Nigeria	A A Adeyi	University of Ibadan, Department of Chemistry, Ibadan, Nigeria   University of Ibadan, Basel Convention Coordinating Centre for Training and Technology Transfer for Africa Region, University of	Mr. B A Babalola, Prof. O Osibanjo
9958	P225-E	08/24/2017	09:15 - 09:45	Environmental levels, transport and exposure	Exhibit Hall	Quantitative Assessment of the Transport of PCBs Emitted from Chicago's PCB Inventory to Lake Michigan	A Martinez	University of Iowa, Iowa City, IA, United States	Mr. A Boesen, Dr. K Hornbuckle
12938	P226-H	08/24/2017	09:15 - 09:45	Human exposure and epidemiology	Exhibit Hall	Dietary exposure to polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans and polychlorinated biphenyls of the French population: Results of the French infant Total Diet Study	B Le Bizec	ONIRIS - LABERCA, Nantes, France	Dr. M Hulin, Mr. J Jean, Dr. P Marchand, Dr. A Venisseau, Dr. V Vaccher, Prof. P Vasseur, Dr. G Rivière, Dr. V Sirot
9870	P227-H	08/24/2017	09:15 - 09:45	Human exposure and epidemiology	Exhibit Hall	ASSESSMENT OF DIOXIN IN SELECTED FOOD ITEMS AND MOTHER MILK FROM COMMUNITIES NEAR AGENT ORANGE HOT SPOT IN DA NANG AIRBASE AND SUGGESTION TO REDUCE THE DIOXIN EXPOSURE	TN Tam	Vietnam Association of Victims of the Agent Orange , Ha Noi, Vietnam	
9966	P228-H	08/24/2017	09:15 - 09:45	Human exposure and epidemiology	Exhibit Hall	Ultrasonographic Examinations (After 59 Years )of Yusho Victims Who Are Left Behind	Reiko Takeda	Clinic Rei Takeda, Shibuya WardTokyo, Japan	
10168	P229-R	08/24/2017	09:15 - 09:45	Regulation, policy, risk assessment and management	Exhibit Hall	An Evaluation of Underlying Assumptions and Decisions In Deriving TCDD's Reference Dose: Scientifically Supportable Alternative RfD Values	R.A. Budinsky	Dow Chemical, Midland, MI, United States	Dr. L. Haws, Dr. P. Goodrum, Dr. D. Wikoff
10099	P230-R	08/24/2017	09:15 - 09:45	Regulation, policy, risk assessment and management	Exhibit Hall	Hazardous chemicals in packaging materials: A downside of recycling?	M Abdallah	University of Birmingham, Birmingham, Great Britain	Mr. M Sharkey, Dr. H Berresheim, Prof. S Harrad
9738	P231-S	08/24/2017	09:15 - 09:45	Sources, formation and transformation	Exhibit Hall	Modeling the Formation of 2,3,7,8-Tetrachlorodibenzodioxin in the Historical Manufacture of 2,4,5-Trichlorophenol	R. Parette	Matson & Associates, Inc., State College, PA, United States	Dr. R. McCrindle, Ms. K. S. McMahan, Dr. V. J. Watson, Dr. M. J. Janik, Dr. D. Velegol, Dr. F. L. Dorman, Dr. W. N. Pearson
9732	P232-S	08/24/2017	09:15 - 09:45	Sources, formation and transformation	Exhibit Hall	Oxidative degradation of polybrominated diphenyl ethers over LiaTiOx micro/nano material	Q Li	Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing, Beijing, China   University of Chinese Academy of Sciences, Beijing,	Dr. G Su, Dr. M Zheng
10239	P233-S	08/24/2017	09:15 - 09:45	Sources, formation and transformation	Exhibit Hall	Suppression of PCDD/F during municipal solid waste incineration by S-N-containing compounds	Xiaoqing Lin	Institute for Thermal Power Engineering, Zhejiang University, Hangzhou, Zhejiang, China	Dr. Xiaodong Li, Dr. Shengyong Lu, Dr. Tong Chen, Dr. Jianhua Yan
10124	P234-T	08/24/2017	09:15 - 09:45	Toxicology	Exhibit Hall	Perfluorooctanesulfonate (PFOS) activates mast cell-mediated allergic reaction	YJ Lee	Catholic University of Daegu, Daegu, Korea, Republic of	Mr. SJ Park, Prof. JH Yang
10128	P235-T	08/24/2017	09:15 - 09:45	Toxicology	Exhibit Hall	Potential PCB toxicity to wild bird embryos	CR Swegelaar	National Metrology Institute of South Africa, Pretoria, Gauteng, South Africa	Dr. LP Quinn, Dr. A Polder, Prof. R Pieters, Prof. H Bouwman
10065	R1-1	08/24/2017	10:00 - 10:20	Ecotoxicology	Grand Ballroom AB	Interactions of climate change and contaminants on the endocrinology and behaviour of seabirds at their southern range limits in the Canadian Arctic	K Fernie	Ecotoxicology and Wildlife Health, Environment and Climate Change Canada , Burlington, Ontario, Canada	Dr. R Letcher, Dr. B Braune, Dr. J Head, Dr. K Elliott
10195	R2-1	08/24/2017	10:00 - 10:20	Total Fluorine Analysis and Total Organic Fluorine Analysis	Grand Ballroom CD	Mass balance analysis of organofluorine in sewage samples from Swedish Wastewater treatment plants	Leo W.Y. Yeung	MTM Research Centre, Örebro University, Örebro, Sweden	Dr. Ulrika Eriksson, Dr. Anna Kärman
10189	R3-1	08/24/2017	10:00 - 10:20	Remediation, Best Available technology	Junior Ballroom AB	Exploratory study on removal of perfluorinated and polyfluorinated alkyl substances from stormwater in rain garden utilizing activated carbon produced from sewage sludge	LY Li	University of British Columbia, Vancouver, B.C., Canada	Mr. C Johnston, Ms. MS Hedayati
9691	R4-1	08/24/2017	10:00 - 10:20	Metabolomics and Systems Biology	Junior Ballroom C	Use of a proteomics chip to discover mechanisms of actions for different polychlorinated biphenyls in humans	L Lind	Department of Medical Sciences, Cardiovascular Epidemiology, Uppsala University, Uppsala, Sweden	Dr. S Salihovic, Dr. M Lind



9676	R5-1	08/24/2017	10:00 - 10:20	Persistent Organic Pollutants (POPs)	Junior Ballroom D	PBDES STATUS OF SOUTHERN GROUND-HORNBILL (BUCORVUS LEADBEATERI) AND WATTLED CRANE (BUGERANUS CARUNCULATUS) IN SOUTH AFRICA	P Daso	1Department of Environmental, Water & Earth Sciences, Faculty of Science, Tshwane University of Technology, Pretoria, Gauteng, South Africa	Prof. R Jansen, Prof. OJ Okonkwo
10217	R6-1	08/24/2017	10:00 - 10:20	Spatial and Temporal Trends of POPs	Parksville	Spatial and Temporal Trends of POPs in Abiotic Compartments: An Overview	Bommanna Loganathan	Murray State University, Murray, Kentucky, USA	Mr. Kenneth Sajwan
9704	R1-2	08/24/2017	10:20 - 10:40	Ecotoxicology	Grand Ballroom AB	Early-life exposure to a current-use flame retardant in Japanese quail: Effects on the thyroid system, growth, metabolic rate, and behaviour	MF Guigueno	McGill University, Sainte-Anne-de-Bellevue, Québec, Canada   Environment and Climate Change Canada, Canada Centre for Inland Waters, Burlington, Ontario, Canada	Dr. JA Head, Dr. L Peters, Ms. AMK Hanas, Mr. F Ste-Marie Chamberland, Dr. RJ Letcher, Dr. KJ Fernie
10083	R2-2	08/24/2017	10:20 - 10:40	Total Fluorine Analysis and Total Organic Carbon	Grand Ballroom CD	Validation and Application of a Standards-Enhanced Total Oxidizable Precursor Assay	B Chandramouli	SGS AXYS Analytical Services, Sidney, BC, Canada	Dr. M B Woudneh, Dr. M C Hamilton, Dr. E F Houtz
9963	R3-2	08/24/2017	10:20 - 10:40	Remediation, Best Available technology	Junior Ballroom AB	Perfluorooctanoic acid (PFOA) degradation in sewage sludge using microwave assisted persulfate oxidation	H Hamid	University of British Columbia, BC, Canada	Dr. L Y Li
9839	R4-2	08/24/2017	10:20 - 10:40	Metabolomics and Systems Biology	Junior Ballroom C	Non-Targeted Metabolomic Profiling to Study Possible Metabolic Effects of PFASs in a Population-based Study	S Salihovic	Department of Medical Sciences and Science for Life Laboratory, Molecular Epidemiology Unit, Uppsala University, Uppsala, Sweden	Dr. T Fall, Dr. A Ganna, Dr. CD Broeckling, Dr. JE Prenni, Dr. B van Bavel, Dr. PM Lind, Dr. E Ingelsson, Dr. L Lind
9950	R6-2	08/24/2017	10:20 - 10:40	Spatial and Temporal Trends of POPs	Parksville	Methodology for Comprehensive Non-Target Screening and Time Trend Analysis of Sewage Sludge	C Veenaas	Umeå University, Umeå, Sweden	Prof. A Bignert, Dr. CMJ Gallampo, Prof. P Haglund
9988	R1-3	08/24/2017	10:40 - 11:00	Ecotoxicology	Grand Ballroom AB	The importance of age when studying persistent organic pollutants in white-tailed eagle nestlings	M. E Løseth	Norwegian University of Science and Technology (NTNU), Trondheim, Norway	-- N. Briels, Dr. G. Malarvannan, Dr. G. Poma, Prof. A. Covaci, -- T. V. Johnsen, Prof. B. M.
10178	R2-3	08/24/2017	10:40 - 11:00	Total Fluorine Analysis and Total Organic Carbon	Grand Ballroom CD	Closing the PFAS Mass Balance: The Total Oxidizable Precursor (TOP) Assay	K Buechler	TestAmerica, West Sacramento/CA, United States	Mr. E Redman, Dr. E Houtz
9664	R3-3	08/24/2017	10:40 - 11:00	Remediation, Best Available technology	Junior Ballroom AB	Source Apportionment of Atmospheric Polycyclic Aromatic Hydrocarbons (PAHs) in PM2.5 at Different Area in Taiwan	Hsin Yu Yang	Institute of Environmental and Occupational Health Sciences, National Yang Ming University, Taipei 112, Taiwan	Miss Shih Yu Pan, Dr. Wei Ting Hsu, Dr. Pao Chen Hung, Dr. Chuan Yao Lin, Prof. Charles C.k. Chou, Dr. Yu Chi Lin, Dr. Tzu Yi Lee, Prof. Kai
9968	R4-3	08/24/2017	10:40 - 11:00	Metabolomics and Systems Biology	Junior Ballroom C	Metabolome analyses reveal a distinctive metabolomic signature in mice ancestrally exposed to TBT	Daniel Zalko	INRA Toxalim, Toulouse, 31100, France	Dr. Raquel Chamorro-García, Dr. Cécile Canlet, Mr. Bassem Shoucri, Dr. Marie Tremblay-Franco, Ms. Roselyne Gautier, Dr. Isabelle
9815	R5-3	08/24/2017	10:40 - 11:00	Persistent Organic Pollutants (POPs)	Junior Ballroom D	Characteristics of ambient PCDD/Fs measured in a tropical city during rainy season	Nguyen Duy Dat	Graduate Institute of Environmental Engineering, National Central University, Zhongli, Taoyuan,	Mr. Minh Man Trinh, Prof. Moo Been Chang
9991	R1-4	08/24/2017	11:00 - 11:20	Ecotoxicology	Grand Ballroom AB	Plasma proteomics provides a retrospective glimpse into the recovery of fish health in Jackfish Bay, Lake Superior	DBD Simmons	Department of Chemistry, McMaster University, Hamilton, ON, Canada	Dr. JP Sherry
9769	R2-4	08/24/2017	11:00 - 11:20	Total Fluorine Analysis and Total Organic Carbon	Grand Ballroom CD	Non-Target Analysis of Ambient Air Using Cryogenic Air Sampler	N Yamashita	National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki, Japan	Dr. E Yamazaki, Dr. S Taniyasu, Mr. T Enomoto
10028	R3-4	08/24/2017	11:00 - 11:20	Remediation, Best Available technology	Junior Ballroom AB	In Situ Chemical Oxidation for Remediation of PFASs in Groundwater	Thomas Bruton	University of California Berkeley, Berkeley, CA, United States   Green Science Policy Institute,	Dr. David Sedlak
9972	R4-4	08/24/2017	11:00 - 11:20	Metabolomics and Systems Biology	Junior Ballroom C	Developmental neurotoxic effects of pesticides, MeHg, and PFHxS combining behavior studies in mice with metabolomic pathway analysis	P Leonards	VU University, Amsterdam, Netherlands	Dr. H Viberg, Dr. I Lee, Dr. S Buratovic, Dr. P Eriksson
9841	R5-4	08/24/2017	11:00 - 11:20	Persistent Organic Pollutants (POPs)	Junior Ballroom D	Air and soil levels of pesticides in an agricultural community in Chile	S. Cortés	Departamento de Salud Pública, Facultad de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile   Advanced Center for Chronic	Dr. K Pozo, Dr. P Přibyllová, Dr. J Kohoutek, Dr. J Klánová, Dr. J Jorquera
10043	R6-4	08/24/2017	11:00 - 11:20	Spatial and Temporal Trends of POPs	Parksville	VERTICAL DISTRIBUTION OF DIOXIN AND FURANS (PCDD/F) IN COLIUMO BAY SEDIMENTS, BIO BIO REGION. CENTRAL CHILE.	Marco Salamanca	Laboratory of Chemical Oceanography, Concepción, Chile   Department of Oceanography, Concepción, Chile   Marine Monitoring Program Nueva Aldea,	Dr. Cristian Chandia, Mr. Rodrigo Loyola, Miss Claudia Figueroa

12957	R1-5	08/24/2017	11:20 - 11:40	Ecotoxicology	Grand Ballroom AB	The biological effects of the anti-sea lice chemotherapeutant Salmosan on the Pacific spot prawn, <i>Pandalus platyceros</i>	K Mill	Department of Biology, Simon Fraser University , Burnaby, BC, Canada	Dr. C Kennedy
10216	R2-5	08/24/2017	11:20 - 11:40	Total Fluorine Analysis and Total	Grand Ballroom CD	Detection of ultra-short chain perfluoroalkyl substances in Swedish environmental waters	IE Jogsten	MTM, School of Science and Technology, Örebro University, Örebro, Sweden	Dr. M Kvist, Dr. L Yeung
9930	R3-5	08/24/2017	11:20 - 11:40	Remediation, Best Available tech	Junior Ballroom AB	HUMAN HEALTH RISK ASSESSMENT OF DIOXIN FROM SOIL CONTAMINATION IN A LUOI DISTRICT IN MIDDLE REGION OF VIETNAM	Terry Grim	Hanoi University of Natural Resource and environment, Hanoi, Viet Nam	Dr. Le Thi Hai Le
10005	R4-5	08/24/2017	11:20 - 11:40	Metabolomics and Systems Biolo	Junior Ballroom C	Deciphering metabolic modulations induced by pollutants using computational biology and omics approaches	Fabien Jourdan	Toxalim, Université de Toulouse, INRA (Institut National de la Recherche Agronomique), Toulouse, France	Dr. Nathalie Poupin, Mr. Clément Frainay, Dr. Nicolas Cabaton, Dr. Cécile Canlet, Dr. Marie Tremblay-Franco, Prof. Ana M. Soto, Dr. Daniel
10089	R5-5	08/24/2017	11:20 - 11:40	Persistent Organic Pollutants (PO	Junior Ballroom D	A First Report of Perfluoroalkyl Substances (PFASs) In A Large West Flowing River In Southern India	K Balakrishna	Manipal Institute of Technology, Manipal University, Manipal, Karnataka, India	Mr. KR Binu, Dr. N Yamashita, Dr. KS Guruge, Mr. VP Prabhasankar, Mr. Y
10105	R6-5	08/24/2017	11:20 - 11:40	Spatial and Temporal Trends of P	Parksville	Distribution and profiles of polybrominated diphenyl ethers (PBDEs), hexabromocyclododecanes (HBCDs) and non-PBDE brominated flame retardants in sediment from Ulsan and Onsan Bay in Korea	Hyun-Kyung Lee	Department of Marine Science and Convergence Engineering, College of Science and Convergence Technology, Hanyang University, Ansan, Gyeonggi-do, Korea, Republic of	Mr. Woochang Jeong, Mr. Sunggyu Lee, Ms. Hyun Jin Cho, Ms. Jae-Eun Lim, Prof. Hyo-Bang Moon
9976	R1-6	08/24/2017	11:40 - 12:00	Ecotoxicology	Grand Ballroom AB	Aquatic toxicity of 2,4,6-Tribromophenol	C Koch	University Duisburg-Essen, Essen, Germany	Prof. B Sures
9894	R2-6	08/24/2017	11:40 - 12:00	Total Fluorine Analysis and Total	Grand Ballroom CD	Novel PFAS Alternatives PFECAs and PFESAs: Environmental Occurrence in Worldwide Surface Water	Y Pan	Institute of Zoology, Chinese Academy of Sciences, Beijing, China	Miss Q Cui, Miss N Sheng, Prof. J Dai
9892	R3-6	08/24/2017	11:40 - 12:00	Remediation, Best Available tech	Junior Ballroom AB	Combined Use of Soil Washing and Incineration for Remediation of Dioxin Contaminated Soils in Southern Vietnam	Mitsuo Mouri	Shimizu Corporation, Chuo-ku, Tokyo, Japan	Mr. Shinichi Ozaki
10087	R4-6	08/24/2017	11:40 - 12:00	Metabolomics and Systems Biolo	Junior Ballroom C	A Multi-omic Approach to the Analysis of Organism Responses to Great Lakes Sediment, Effluent and Surface Waters Containing Persistent Organic Pollutants	B Chandramouli	SGS AXYS Analytical Services, Sidney, BC, Canada	Ms. H J Butler, Dr. J R Cosgrove, Dr. T Watson-Leung, Dr. S Kleywegt, Dr. D B D Simmons, Dr. C Helbing
9967	R5-6	08/24/2017	11:40 - 12:00	Persistent Organic Pollutants (PO	Junior Ballroom D	New and emerging POPs in the Group of Latin America and Caribbean (GRULAC) Region	C Rauert	Environment and Climate Change Canada, Toronto, ON, Canada	Dr. T Harner, Dr. J. K Schuster, Dr. G Fillmann, Dr. L. E Castillo, Dr. O Fentanes, Dr. M Villa Ibarra, Dr. K. S. B Miglioranza, Dr. I Moreno
10156	R6-6	08/24/2017	11:40 - 12:00	Spatial and Temporal Trends of P	Parksville	Poly- and Perfluoroalkyl Substances (PFASs) in Seawater and Plankton from the Northwest Atlantic Margin	X Zhang	Harvard University, Cambridge, MA, United States	Dr. R Lohmann, Dr. EM Sunderland
9809	R1-7	08/24/2017	13:00 - 13:20	Alternate Flame Retardants: Envi	Grand Ballroom AB	Urinary biomonitoring of organophosphate flame retardants in Japanese children and correlations with house dust concentrations	A Covaci	University of Antwerp, Wilrijk, Belgium	Mr. M Bastiaensen, Dr. N Van den Eede, Dr. A Araki, Dr. Y Ait Bamai, Prof. R Kishi
9992	R2-7	08/24/2017	13:00 - 13:20	Short and Medium Chain Chlorin	Grand Ballroom CD	Global emission estimates for short-chain chlorinated paraffins based on their reported production and use volumes	Juliane Glüge	ETH Zurich, Zurich, Switzerland	Dr. Zhanyun Wang, Dr. Christian Bogdal, Prof. Martin Scheringer, Prof. Konrad Hungerbühler
10214	R3-7	08/24/2017	13:00 - 13:20	Polycyclic Compounds	Junior Ballroom AB	Multiple lines of evidence for PAH fingerprinting and source apportionment of crude oil spills	C. Sandau	Chemistry Matters Inc., Calgary, AB, Canada	
9733	R4-7	08/24/2017	13:00 - 13:20	POPs in the Arctic	Junior Ballroom C	Highlights from the new AMAP Assessment report on Chemicals of Emerging Arctic Concern	C.A. de Wit	Department of Environmental Science and Analytical Chemistry (ACES), Stockholm University, Stockholm,	Ms. J. Balmer, Dr. D. Muir, Dr. K. Vorkamp, Dr. S. Wilson
9922	R5-7	08/24/2017	13:00 - 13:20	Persistent Organic Pollutants (PO	Junior Ballroom D	SPATIAL AND TEMPORAL VARIATIONS IN THE ATMOSPHERIC CONCENTRATIONS OF POLYCHLORINATED BIPHENYLS IN KUWAIT.	B Gevao	Kuwait Institute for Scientific Research, Environment and Life Sciences Research Center, Kuwait Institute for Scientific Research, P. O. Box 24885, Safat 13109,	Dr. M Porcelli, Dr. K Gujjarro , Mr. M Bahloul, Mrs. S Rajagopalan, Mrs. D Krishnan, Mr. J Zafar

9713	R6-7	08/24/2017	13:00 - 13:20	Exposure to POPs in Urban, Indo	Parksville	Human exposure to legacy and emerging halogenated flame retardants via inhalation and dust ingestion in a Norwegian cohort	Joo Hui Tay	Department of Environmental Science and Analytical Chemistry (ACES), Stockholm University, Stockholm, Sweden	Dr. Ulla Sellström, Dr. Eleni Papadopoulou, Dr. Juan Antonio Padilla-Sánchez, Dr. Line Småstuen Haug, Prof. Cynthia de Wit
9949	R1-8	08/24/2017	13:20 - 13:40	Alternate Flame Retardants: Envi	Grand Ballroom AB	Assessing Children's Exposure to Emerging Flame Retardants in North Carolina	A. L. Phillips	Duke University, Durham, NC, United States	Miss S. C. Hammel, Dr. K. Hoffman, Miss A. M. Lorenzo, Dr. T. F. Webster, Dr. H. M. Stapleton
9925	R2-8	08/24/2017	13:20 - 13:40	Short and Medium Chain Chlorin	Grand Ballroom CD	Baking ovens are a relevant source of medium-chain chlorinated paraffins (MCCPs) in household kitchens	W Vetter	University of Hohenheim, Institute of Food Chemistry, Stuttgart, Germany	Mr. C Gallistl, Mr. J Sprengel
9845	R3-8	08/24/2017	13:20 - 13:40	Polycyclic Compounds	Junior Ballroom AB	PAHs depositions in the environment of a waste incinerator	A Arkenbout	NGO ToxicoWatch Foundation, Harlingen, Friesland, Netherlands	Dr. P Behnisch
9857	R4-8	08/24/2017	13:20 - 13:40	POPs in the Arctic	Junior Ballroom C	Atmospheric Transport and Deposition of Bromoanisoles Along a Temperate to Arctic Gradient	T.F. Bidleman	Chemistry Dept., Umeå University, Umeå, Sweden	Dr. E. Brorström-Lundén, Dr. K. Hansson, Dr. H. Laudon, Dr. O. Nygren, Dr. M. Tysklind
9983	R5-8	08/24/2017	13:20 - 13:40	Persistent Organic Pollutants (PO	Junior Ballroom D	ENVIRONMENTAL BURDENS FOR NEW POPS AND THEIR ALTERNATIVES IN THE GRULAC REGION	K Pozo	Masaryk University, Recetox, Brno, Czech Republic   Universidad Catolica, Concepcion, Chile	Dr. L Maranhão, Dr. D Moledo de Souza Abessa, Dr. P Karásková, Dr. P Přebilová, Dr. V Gomez, Dr. G Lammel, Dr. J Klanova
9799	R6-8	08/24/2017	13:20 - 13:40	Exposure to POPs in Urban, Indo	Parksville	Assessment of PCB levels in serum from Iowa, USA construction workers	RF Marek	IHR-Hydrosience and Engineering, University of Iowa, Iowa City, IA, United States	Ms. S Flor, Dr. SH Enayah, Prof. KC Hornbuckle, Dr. K Kelly, Prof. K Wang, Prof. L Fuortes, Prof. G
9694	R1-9	08/24/2017	13:40 - 14:00	Alternate Flame Retardants: Envi	Grand Ballroom AB	Screening of organic flame retardants in Swedish rivers	J Gustavsson	Swedish University of Agricultural Sciences, Uppsala, Sweden	Mr. E Ribeli, Mr. MA Nguyen, Dr. S Josefsson, Prof. K Wiberg, Dr. L Ahrens
9634	R2-9	08/24/2017	13:40 - 14:00	Short and Medium Chain Chlorin	Grand Ballroom CD	The CP/CO problem: Three methods to resolve severe mass interferences of chlorinated paraffins (CPs) and chlorinated olefins (COs)	L Schinkel	Empa, Dübendorf, Switzerland   ETH Zurich, Zurich, Switzerland	Mr. S Lehner, Dr. N Heeb, Ms. E Lesquin, Dr. P Marchand, Dr. R Cariou, Prof. K McNeill, Dr. C Bogdal
10119	R3-9	08/24/2017	13:40 - 14:00	Polycyclic Compounds	Junior Ballroom AB	Concentration, distribution and gas/particle partitioning of atmospheric PAHs in rural, urban and industrial sites of northern Taiwan	Nguyen-Duy Dat	Graduate Institute of Environmental Engineering, National Central University (NCU), Zhongli, 320, Taiwan	Prof. Moo-Been Chang
9700	R4-9	08/24/2017	13:40 - 14:00	POPs in the Arctic	Junior Ballroom C	Persistent organic pollutants in two species of white-blooded Antarctic fish	M Zennegg	Empa, Swiss Federal Laboratories for Materials Science and Technology, Laboratory for Advanced Analytical Technologies, Dübendorf, Switzerland	Dr. A Strobel, Dr. P Schmid, Prof. H Segner, Prof. P Burkhardt-Holm
9675	R5-9	08/24/2017	13:40 - 14:00	Persistent Organic Pollutants (PO	Junior Ballroom D	TRICLOSAN DETECTION IN WATER USING nZnO IMMOBILIZED ONTO CARBON ELECTRODE WITH MULTIWALLED CARBON NANOTUBE	OJ Okonkwo	2Department of Environmental, Water, and Earth Sciences, Tshwane University of Technology, Pretoria, Gauteng, South Africa	Prof. M Moyo, Miss F Lehutso
9838	R6-9	08/24/2017	13:40 - 14:00	Exposure to POPs in Urban, Indo	Parksville	Indoor contamination in a former PCB-manufacturing region of Slovakia	L Melymuk	Research Centre for Toxic Compounds in the Environment (RECETOX), Masaryk University, Brno,	Dr. S Vojta, Ms. M Vykoukalova, Dr. GP Codling, Dr. AC Ionas, Dr. T Trnovec, Dr. L Murinova,
9961	R1-10	08/24/2017	14:00 - 14:20	Alternate Flame Retardants: Envi	Grand Ballroom AB	Global atmospheric concentrations of BFRs and OPFRs from the GAPS Network	C Rauert	Environment and Climate Change Canada, Toronto, ON, Canada	Dr. J. K Schuster, Ms. A Eng, Dr. T Harner
9753	R2-10	08/24/2017	14:00 - 14:20	Short and Medium Chain Chlorin	Grand Ballroom CD	Detection and Quantification of Chlorinated Paraffins in Food Samples using GC-Orbitrap Mass Spectrometry	K Kraetschmer	European Union Reference Laboratory for Dioxins and PCBs in Feed and Food, Freiburg, Baden-Wuerttemberg, Germany   University of Hohenheim, Institute of Food Chemistry, Stuttgart, Baden-	Dr. CI Cojocariu, Mr. P Silcock, Dr. A Schaechtele, Prof. W Vetter
10170	R3-10	08/24/2017	14:00 - 14:20	Polycyclic Compounds	Junior Ballroom AB	METHOD DEVELOPMENT FOR QUANTITATION OF POLYCYCLIC AROMATIC HYDROCARBONS AND THEIR ALKYLATED CONGENERS IN ORGANIC TISSUE BY TWO-DIMENSIONAL GAS CHROMATOGRAPHY HIGH RESOLUTION TIME OF FLIGHT MASS SPECTROMETRY	I Idowu	Centre for Oil and Gas Research and Development, University of Manitoba, Winnipeg, MB, Canada	-- W Johnson, -- O Francisco, -- P Thomas, Dr. C Marvin, Dr. J Stetefeld, Dr. G Tomy
9977	R4-10	08/24/2017	14:00 - 14:20	POPs in the Arctic	Junior Ballroom C	Persistent Organic Pollutants and Chemicals of Emerging Concern in Canadian Arctic Air	H. Hung	Air Quality Research Processes Section, Environment and Climate Change Canada, Toronto, Ontario,	Dr. F. Wong, Dr. E. Sverko, Dr. E. Barresi, Ms. H. Dryfhout-Clark, Mr. P. Fellin

10135	R5-10	08/24/2017	14:00 - 14:20	Persistent Organic Pollutants (POPs)	Junior Ballroom D	ESTIMATED QUANTITIES OF POLYCHLORINATED DIBENZO-P-DIOXINS AND POLYCHLORINATED DIBENZOFURANS RELEASES IN GHANA	S Adu-Kumi	Environmental Protection Agency, Accra, Ghana	Dr. R Weber, Mr. J C Edmund, Mrs. E Nerquaye-Tetteh
10016	R6-10	08/24/2017	14:00 - 14:20	Exposure to POPs in Urban, Indoor	Parksville	Indoor Sources of and Human Exposure to Brominated Flame Retardants (BFRs), Organophosphate Esters (OPEs), and Phthalate Esters (PAEs)	C Yang	Department of Earth Sciences, University of Toronto, Toronto, Ontario, Canada	Dr. S Harris, Dr. L Jantunen, Miss D Tsirlin, Mrs. L Latifovic, Mr. B Fraser, Miss R De La Campa, Mr. H You, Mr. R Kulka, Dr. M Diamond
9860	P236-A	08/24/2017	14:20 - 14:50	Analysis of emerging and legacy POPs	Exhibit Hall	Detection of wood preservatives in soil using AIQS target screening method from debris storage areas of the 2016 Kumamoto Earthquake, Japan	Daisuke Ueno	Saga University, Saga, Japan	Dr. Shusuke Koyano, Dr. Takashi Miyawaki, Dr. Kiwao Kadokami, Dr. Natsuko Kajiwara, Dr. Katsuhisa Sato, Dr. Kenichi Tobo, Dr. Haruhiko Nakata
12941	P237-A	08/24/2017	14:20 - 14:50	Analysis of emerging and legacy POPs	Exhibit Hall	ASSESSMENT OF THE AUTOMATED CLEAN-UP SYSTEM DEXTech + FOR DETERMINATION OF PBDEs ALONG WITH PCDD/Fs AND PCBs IN ENVIRONMENTAL SAMPLES	J Muñoz-Arnanz	Department of Instrumental Analysis and Environmental Chemistry, Institute of Organic Chemistry (IQOG-CSIC), Madrid, Spain	Ms. M Ros, Dr. B Jiménez
12933	P238-A	08/24/2017	14:20 - 14:50	Analysis of emerging and legacy POPs	Exhibit Hall	Screening for Dioxin-Like Compounds in Sediment Using Modified QuEChERS and a GC-TOF Mass Spectrometer with Atmospheric Pressure Chemical Ionization	L Haimovici	Ministry of the Environment and Climate Change, Toronto, Ontario, Canada	Dr. E Reiner, Dr. K Jobst, Ms. K MacPherson, Mr. J Cochran
9646	P239-A	08/24/2017	14:20 - 14:50	Analysis of emerging and legacy POPs	Exhibit Hall	Determination of short chain chlorinated paraffins (SCCPs) in commercial chlorinated paraffins (CPs) products using comprehensive two-dimensional gas chromatography coupled with tandem mass spectrometry	Yun Zou	Shimadzu China MS Center, Shimadzu (China) Co. LTD., Beijing, China	Mr. Naoki Hamada, Dr. Yuki Hashi, Dr. Liang Dong, Mr. Wenlong Yang, Mr. Pengjun Xu
9938	P240-A	08/24/2017	14:20 - 14:50	Analysis of emerging and legacy POPs	Exhibit Hall	Atmospheric Concentrations of Synthetic Musks in Canada	F Wong	Environment and Climate Change Canada, Toronto, ON, Canada	Ms. C Shunthirasingham, Mr. N Alexandrou, Mr. A Pajda, Mr. J Okeme, Mr. T Rodgers, Dr. LM
9726	P242-A	08/24/2017	14:20 - 14:50	Analysis of emerging and legacy POPs	Exhibit Hall	Characterizing Additional Compounds When Evaluating Source Contribution of PCBs	Rock Vitale	Environmental Standards, Valley Forge, PA, United States	
10042	P243-E	08/24/2017	14:20 - 14:50	Ecosystems and wildlife species	Exhibit Hall	Bioaccumulation of persistent halogenated organic pollutants in insects: Metamorphosis significantly alters pollutant pattern in a common way for different insects	Xiao-Jun Luo	Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, Guangzhou, China	Dr. Yu Liu, Dr. Bi-Xian Mai
10004	P244-E	08/24/2017	14:20 - 14:50	Environmental levels, transport and fate	Exhibit Hall	ANALYSIS ON GLOBAL DISTRIBUTION AND ENVIRONMENTAL IMPACTS OF DBDPE IN ELECTRICAL AND ELECTRONIC PRODUCTS FROM CNIHA	K.H Shen	Peking University, Beijing, China	Prof. J.G. Liu, Dr. L Li
9898	P245-E	08/24/2017	14:20 - 14:50	Environmental levels, transport and fate	Exhibit Hall	Size-resolved gas-particle partitioning for polybrominated diphenyl ethers	Pengtuan Hu	International Research Center for Arctic Environment and Ecosystem (IRC-AEE), Academy of Environment and Ecology, Harbin Institute of Technology, Harbin, Heilongjiang, China   International Joint Research Center for Persistent Toxic Substances (IJRC-PTS), State Key Laboratory of Urban Water Resource and Environment, Environment School, Harbin Institute	Ms. Lina Qiao, Dr. Yi-Fan Li
9707	P246-E	08/24/2017	14:20 - 14:50	Environmental levels, transport and fate	Exhibit Hall	Development of sediment certified reference material for PCDD/Fs analysis	G Zhao	Department of Water Environment, China Institute of Water Resources and Hydropower Research, Beijing,	Miss Q Liu , Dr. H Zhou , Dr. J Zhao, Mr. J Gao , Mr. Y Hao
10150	P247-E	08/24/2017	14:20 - 14:50	Environmental levels, transport and fate	Exhibit Hall	PCDD, PCDF and PCB monitoring in São Paulo City (Brazil) using passive air sampler as part of the Global Monitoring Plan	MY Tomimaga	CETESB-São Paulo State Environmental Company, São Paulo/SP, Brazil	Ms. CR Silva, Ms. JP Melo, Ms. NA Niwa, Dr. MIZ Sato
9843	P248-E	08/24/2017	14:20 - 14:50	Environmental levels, transport and fate	Exhibit Hall	Pre-Feasibility Study on Environmental Photolysis of p,p'-DDT and ?-HCH	N Hanari	National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan	Dr. J Falandysz, Dr. E Yamazaki, Dr. N Yamashita

10012	P250-E	08/24/2017	14:20 - 14:50	Environmental levels, transport and exposure	Exhibit Hall	Preliminary Assessment of New POPs in the Air of Sao Paulo City, Brazil	JV De Assuncao	University of São Paulo, São Paulo, Brazil	Dr. AP Francisco, Ms. CR Silva, Dr. MY Tominaga, Dr. CR Pesquero
9806	P251-E	08/24/2017	14:20 - 14:50	Environmental levels, transport and exposure	Exhibit Hall	Passive sampling of POPs in the Black Sea	K Okonski	RECETOX, Faculty of Science, Masaryk University, Brno, Czech Republic	Mr. B Vrana, Mr. R Prokes, Mr. J Urik, Ms. P Pribylova, Ms. M Belhacova, Ms. J Becanova,
9837	P252-E	08/24/2017	14:20 - 14:50	Environmental levels, transport and exposure	Exhibit Hall	Levels of PFOS and the other perfluorinated organic compounds in Polish inland waters and Baltic Sea coastal waters	I Wójcik	Institute of Geography, Jan Kochanowski University, Kielce, Poland	Prof. A Grochowalski, Prof. W Krzyński, Dr. M Rybka, Prof. T Kalicki
12945	P253-H	08/24/2017	14:20 - 14:50	Human exposure and epidemiology	Exhibit Hall	Maternal Perinatal Serum PFASs and Daughter's Breast Cancer	Barbara Cohn	Child Health and Development Studies, Public Health Institute, Berkeley, California, United States	Dr. Michele La Merrill, Dr. Russell Hovey, Ms. Nicklou Krigbaum, Dr. Miaomiao Wang, Dr. June-Soo Park, Dr. Myrto Petreas, Dr. Gregory Yeh, Ms. Lauren Zimmermann, Ms. Piera Cirillo
9744	P254-H	08/24/2017	14:20 - 14:50	Human exposure and epidemiology	Exhibit Hall	Time Trend and Spatial Distribution of Polybrominated Biphenyl Ethers and Polychlorinated Biphenyls in Human Milk from China under the Stockholm Convention	Jingguang Li	China National Center for Food Safety Risk Assessment, Beijing, China	Dr. lei zhang, Miss shuaixing yin, Dr. zhixiong shi, Dr. yunfeng zhao, Dr. yongning wu
10237	P255-H	08/24/2017	14:20 - 14:50	Human exposure and epidemiology	Exhibit Hall	The long-term consequences of herbicides and defoliants used in Vietnam during the war time	Tran Ngoc Tam	Vietnam Association for Victims of Agent Orange/Dioxin, Hanoi, Viet Nam	Dr. Nguyen Thi Ngoc Phuong
12338	P256-R	08/24/2017	14:20 - 14:50	Regulation, policy, risk assessment	Exhibit Hall	Evaluation of Treatment Possibility for Waste Containing Perfluorinated Compounds by Using Thermal Method	Jisu Bae	NIER, Incheon, Korea, Republic of	Dr. Youngsam Yoon, Mr. Eunhye Kwon, Dr. Taewan Jeon, Dr. Sunkyoung Shin
9774	P257-R	08/24/2017	14:20 - 14:50	Regulation, policy, risk assessment	Exhibit Hall	Analysis of BFRs and dioxins and dioxin-like PCBs on a dual column GC-MS/MS system	Masato Takakura	Shimadzu Corporation, Kyoto, Japan	Mr. Kouki Tanaka, Mr. Haruhiko Miyagawa
9910	P259-S	08/24/2017	14:20 - 14:50	Sources, formation and transformation	Exhibit Hall	Thermal Treatment Experiments of Solid Waste Containing Decabromodiphenyl Ether-treated Fabric using a Pilot-scale Incinerator	N Kajiwara	National Institute for Environmental Studies (NIES), Tsukuba, Japan	Dr. H Matsukami, Dr. G Suzuki
10041	P260-T	08/24/2017	14:20 - 14:50	Toxicology	Exhibit Hall	SIGNALING PATHWAYS ASSOCIATED WITH PFC-INDUCED APOPTOSIS OF NEURONAL CELLS	JH YANG	CATHOLIC UNIV. OF DAEGU, DAEGU, Korea, Republic of	Dr. YJ LEE
9666	P261-T	08/24/2017	14:20 - 14:50	Toxicology	Exhibit Hall	Characteristics of PCB congeners accumulated in Yusho patients and estimation of their cytochrome P450-dependent metabolism by in silico docking simulation	S Hirakawa	Fukuoka Institute of Health and Environmental Sciences, Dazaifu, Fukuoka, Japan	Mr. T Miyawaki, Mr. T Hori, Mr. J Kajiwara, Mr. S Katsuki, Mr. M Hirano, Ms. Y Yoshinouchi, Mr. H Iwata, Ms. C Mitoma, Mr. M Furue
10161	P262-T	08/24/2017	14:20 - 14:50	Toxicology	Exhibit Hall	ENUMERATION OF THE CONSTITUTIONAL ISOMERS OF SUBSTITUTED POLYCYCLIC AROMATIC COMPOUNDS	W Johnson	University of Manitoba, Winnipeg, MB, Canada	-- I Idowu, -- O Francisco, Dr. C Marvin, -- P Thomas, Dr. J Stetefeld, Dr. G Tomy
9719	P263-T	08/24/2017	14:20 - 14:50	Toxicology	Exhibit Hall	First Steps Towards Characterization of Halogenated Alkene Flame Retardants	D.C.G. Muir	Environment and Climate Change Canada, Burlington, ON, Canada	-- A.L. Myers, -- E.J. Reiner, -- K. Jobst, -- J. Byer, -- H. Steer, -- A.O. De Silva
11282	P264-T	08/24/2017	14:20 - 14:50	Toxicology	Exhibit Hall	Application of bioinformatics as a tool for understanding the remediation of persistent organic pollutants	Z Basharat	Fatima Jinnah Women University, Rawalpindi, Punjab, Pakistan   University of British Columbia, Vancouver, British Columbia, Canada	Prof. A Yasmin
9741	P265-A	08/24/2017	15:05 - 15:30	Analysis of emerging and legacy pollutants	Exhibit Hall	Selective extraction of estrogens in water samples using a nano grafted membrane with molecular imprinted polymer	P. Fernandez	UNED, Madrid, Spain	Dr. R.M. Garcinuño, Dr. G. Paniagua, Dr. J.C. Bravo
9723	P266-A	08/24/2017	15:05 - 15:35	Analysis of emerging and legacy pollutants	Exhibit Hall	Development of Cherry tomato Analytical Reference Material For Proficiency test of Pesticide Residue Analysis	Su-Myeong Hong	National Institute of Agricultural Science, Wanju, Korea, Republic of	Mr. Jonh-Hwan Kim, Dr. Hye-Young Kwon, Mr. Hyo-Sub Lee
9674	P267-A	08/24/2017	15:05 - 15:35	Analysis of emerging and legacy pollutants	Exhibit Hall	Domestic cats as sentinels for PFAS exposure	JL Reiner	NIST, Charleston, SC, United States	Mr. PC Bost, Dr. MJ Strynar, Dr. AB Lindstrom,

9979	P268-A	08/24/2017	15:05 - 15:35	Analysis of emerging and legacy	Exhibit Hall	Method Development of a 2-Dimensional Liquid Chromatography High Resolution Mass Spectrometry Method for The Analysis of Organophosphorus Flame Retardants in Water Samples	L Mullin	Waters Corporation, Milford, MA, United States   MTM Research Centre, Örebro University, Örebro, Sweden	Dr. C Mallet, Dr. R Plumb, Dr. J Burgess, Dr. I Ericson Jogsten
9939	P269-A	08/24/2017	15:05 - 15:35	Analysis of emerging and legacy	Exhibit Hall	Extended Abstract - Simultaneous determination of 10 types of per- and polyfluoroalkyl substances with wide range of pKa values in human serum without pretreatment	Ke Gao	State Key Laboratory of Environmental Chemistry and Ecotoxicology, Research Center for Eco-Environmental Sciences Chinese Academy of Sciences, Beijing, China	Dr. Jianjie Fu, Prof. Aiqian Zhang
9864	P270-A	08/24/2017	15:05 - 15:35	Analysis of emerging and legacy	Exhibit Hall	Eco-toxicological evaluation of 4-nonylphenol diastereomers with delayed luminescence in the green alga <i>Pseudokirchneriella subcapitata</i>	Koji Arizono	Pref Univ Kumamoto, Kumamoto, Japan	Mr. Ryo Omagari, Dr. Yasuhiro Ishibashi, Dr. Masakazu Katsumata
9797	P271-A	08/24/2017	15:05 - 15:35	Analysis of emerging and legacy	Exhibit Hall	High Accurate Analysis of Organochlorine Pesticides and Polychlorinated Biphenyls Using Triple Quadrupole GC-MS/MS	R Kitano	Shimadzu Scientific Instruments, Inc., Columbia, MD, United States	Mr. B Prakash, Dr. C Friedrich, Dr. M Citriglia, Dr. T Ogura, Dr. W Lipps
10103	P272-E	08/24/2017	15:05 - 15:35	Ecosystems and wildlife species	Exhibit Hall	Organohalogen contaminants in common loons ( <i>Gavia immer</i> ) breeding in western Alberta, Canada	T.M. Brown	Simon Fraser University, Burnaby, BC, Canada	Dr. S.I. Lord, Dr. J.E. Elliott, Dr. D.W. Schindler
10076	P273-E	08/24/2017	15:05 - 15:35	Environmental levels, transport a	Exhibit Hall	Alternative Flame Retardants in House Dust Collected from Residential Houses and Kindergartens in Japan	M Furukawa	University of Shizuoka, Shizuoka, Japan	Dr. Q Wang, Dr. M Tokumura, Dr. Y Miyake, Prof. T Amagai, Dr. Y Takahashi
9855	P273-E	08/24/2017	15:05 - 15:35	Ecosystems and wildlife species	Exhibit Hall	Simultaneous Removal of PCDD/Fs, PCP and Mercury from Contaminated Sediment via Pyrolysis	Moo-Been Chang	National Central University,, Chungli, National Central University, Chungli 320, Taiwan	Miss Yen-Chen Hsu, Mr. Shu-Hao Chang, -- N duy dat
9748	P274-E	08/24/2017	15:05 - 15:35	Environmental levels, transport a	Exhibit Hall	Quantitative Analysis of HBCD Diastereomers in Technical HBCD Mixtures using UPLC-MS/MS	Song-Yee Baek	KRISS, Daejeon, Korea, Republic of	Dr. Sunyoung Lee, Dr. Seonghee Ahn, Dr. Byungjoo Kim
9940	P275-E	08/24/2017	15:05 - 15:35	Environmental levels, transport a	Exhibit Hall	Trends of selected POP concentrations in Japanese air: a panel data analysis	Nguyen Thanh Dien	Environment Preservation Research Center, Kyoto University, Kyoto, Japan	Prof. Yasuhiro Hirai, Prof. Shin-ichi Sakai
9829	P276-E	08/24/2017	15:05 - 15:35	Environmental levels, transport a	Exhibit Hall	Neutral and Ionic Per- and Polyfluoroalkyl Substances (PFASs) in the Atmosphere: Occurrence and Distribution Associated with Particulate Matter	Yiming Yao	MOE Key Laboratory of Pollution Processes and Environmental Criteria, College of Environmental Science and Engineering, Nankai University, Tianjin, China	Prof. Hongwen Sun
10266	P277-E	08/24/2017	15:05 - 15:35	Environmental levels, transport a	Exhibit Hall	Distribution and transport of perfluoroalkyl and polyfluoroalkyl substances in the lower atmosphere and surface waters of the Chinese Bohai Sea, Yellow Sea, and Yangtze River Estuary	Zhen Zhao	MOE Key Laboratory of Pollution Processes and Environment Criteria, College of Environmental Science and Engineering, Nankai University, Tianjin, China	Dr. Jianhui Tang, Dr. Zhiyong Xie, Dr. Chongguo Tian, Dr. Gan Zhang, Dr. Ralf Ebinghaus, Dr. Hongwen Sun
10035	P278-E	08/24/2017	15:05 - 15:35	Environmental levels, transport a	Exhibit Hall	Distribution and levels of polybrominated diethyl ethers (PBDEs) in sediment and biota of Lagos Lagoon, Nigeria	Adebola A Adeyi	University of Ibadan, Ibadan, Nigeria   Basel Convention Coordinating Centre for Training and Technology Transfer for Africa Region, University of	Mr. Basit Olayanju, Prof. Oladele Osibanjo
9879	P282-R	08/24/2017	15:05 - 15:35	Regulation, policy, risk assessme	Exhibit Hall	Developing a standardized assessment protocol for potentially polluting wrecks	J Lonsdale	Cefas, Lowestoft, Suffolk, Great Britain	Ms. F Goodsir, Mr. P Mitchell, Dr. R Surhing, Dr. A Farcas, Mr. M Kirby
10061	P284-R	08/24/2017	15:05 - 15:35	Regulation, policy, risk assessme	Exhibit Hall	Relative potency of polychlorinated naphthalene (PCN) to 2,3,7,8-TCDD in in vitro reporter gene assay with rat hepatoma cell line	Go Suzuki	National Institute for Environmental Studies, Tsukuba 305-8506, Japan	Dr. Hidenori Matsukami, Ms. Chieko Michinaka, Mr. Hiroo Takagi, Dr. Natsuko Kajiwara
9673	P285-S	08/24/2017	15:05 - 15:35	Sources, formation and transfor	Exhibit Hall	Effects of activated carbon injection on emission characteristics and relationship between PCDD/Fs and chlorobenzenes from a municipal solid waste incinerator in China	TJ Wang	State Key Laboratory of Clean Energy Utilization, Institute for Thermal Power Engineering, Zhejiang University, Hangzhou, Zhejiang Province, China	Dr. T Chen, Mr. BB Lin, Dr. XQ Lin, Dr. MX Zhan, Dr. XD Li

10158	P286-S	08/24/2017	15:05 - 15:35	Sources, formation and transform	Exhibit Hall	OCCURRENCE OF PAHs IN AIR SURROUNDING A COAL-FIRED THERMAL POWER PLANT IN SOUTH-WEST COAST OF INDIA	Minal Gune	Manipal Institute of Technology, Manipal, Karnataka, India	Dr. Balakrishna K, Dr. Wan-Li Ma, Dr. Wenlong Li, Dr. Yi-Fan Li, Dr. Udayashankar HN
9703	P287-T	08/24/2017	15:05 - 15:35	Toxicology	Exhibit Hall	Decabromodiphenyl Ether (BDE-209) and Ultrasonic Vocalization in rat pups	H Wada	Graduate School of Letters, Hokkaido University, Sapporo, Hokkaido, Japan	Mr. Y Qi
9653	P288-T	08/24/2017	15:05 - 15:35	Toxicology	Exhibit Hall	Identification of compounds in WAF extract to induce DNA damage to flat fish according to polarity and Kow.	Hyojin Lee	Department of MarineEnvironmental Engineering, Gyeongsang National University, Korea, Tongyeong, Korea, Republic of	Mr. Hae Jin Jeong, Ms. Yu Lee Jang, Prof. Gi Beum Kim
9817	R1-11	08/24/2017	15:35 - 15:55	Capacity Building in Developing C	Grand Ballroom AB	Bi-ennial Global Interlaboratory Assessment on Persistent Organic Pollutants – Third Round 2016/2017, Dioxin-like POPs and Perfluorinated Alkyl Substances	H. Fiedler	Örebro University, School of Science and Technology, MTM Research Centre, SE-701 82 Örebro, Sweden	Ms. I. van der Veen, Dr. J. de Boer
9699	R2-11	08/24/2017	15:35 - 15:55	Short and Medium Chain Chlorin	Grand Ballroom CD	Medium-chain and long-chain chlorinated paraffin products predominate in Swedish coastal sediment cores over the past 50 years	C.A. de Wit	Department of Environmental Science and Analytical Chemistry, Stockholm University, Stockholm, Sweden	Dr. B Yuan, Dr. V Brüchert, Dr. A Sobek
12958	R3-11	08/24/2017	15:35 - 15:55	Polycyclic Compounds	Junior Ballroom AB	Determination of polycyclic aromatic hydrocarbons in surface water using a simplified liquid-liquid micro-extraction and pseudo-MRM GC/MS/MS	M Kim	Agilent Technologies, Ontario, Canada	-- J Yan, -- M Haberl, -- H Kwok, -- P Brunswick, -- C MacInnis, -- G van Aggelen, Dr. D Shang
10152	R4-11	08/24/2017	15:35 - 15:55	POPs in the Arctic	Junior Ballroom C	Metabolomic and transcriptomic consequences of elevated PCB exposure in ringed seals ( <i>Pusa hispida</i> ) in Labrador	T.M. Brown	Simon Fraser University, Burnaby, BC, Canada	Dr. J.R. Cosgrove, Dr. B. Chandramouli, Dr. H. Butler, Dr. C.C. Helbing, Dr. P.S. Ross, Dr. K.J. Reimer, Dr. A.T. Fisk
9660	R5-11	08/24/2017	15:35 - 15:55	Persistent Organic Pollutants (PO	Junior Ballroom D	Assessing Human Exposure to PM10-Bound Polycyclic Aromatic Hydrocarbons During Fireworks Displays	Siwatt Pongpiachan	NIDA, Bangkok, Thailand	
10066	R6-11	08/24/2017	15:35 - 15:55	Exposure to POPs in Urban, Indo	Parkville	Organophosphate Esters Levels in House Dust samples from Canada, Egypt and Turkey	PB Kurt-Karakus	Bursa Technical University, Bursa, Turkey	Dr. LM Jantunen, Dr. T Shoeib, Dr. GM Webster, Ms. Y Hassan, Dr. S Tepe, Dr. M Usluy, Dr. C
9998	R1-12	08/24/2017	15:55 - 16:15	Capacity Building in Developing C	Grand Ballroom AB	Bi-ennial Global Interlaboratory Assessment on Persistent Organic Pollutants – Third Round 2016/2017, Organochlorine Pesticides, PCBs and Brominated Flame Retardants	J de Boer	Vrije Universiteit, Amsterdam, Netherlands	Mrs. I Van der Veen, Prof. H Fiedler
10109	R2-12	08/24/2017	15:55 - 16:15	Short and Medium Chain Chlorin	Grand Ballroom CD	Interlaboratory Study On The Analysis of Short Chain Chlorinated Paraffins	L.M. van Mourik	Environmental Health (E&H), Vrije Universiteit, Amsterdam, Netherlands   Queensland Alliance for Environmental Health Science (QAEHS), The University of Queensland, Brisbane, Australia	Ms. I. van der Veen, Prof. J. de Boer, Dr. S. Crum
9751	R3-12	08/24/2017	15:55 - 16:15	Polycyclic Compounds	Junior Ballroom AB	Congener-Specific Characterization of Polychlorinated Naphthalenes in Soil surrounding a Secondary Copper Metallurgical Facility: Indication Multiple Sources	Hu Jicheng	College of life and environmental science, MinZu university of China, Beijing, 100081, China	Miss Wu Jing, Mr. Wang Shijie, Miss Jin Jingxi
10213	R4-12	08/24/2017	15:55 - 16:15	POPs in the Arctic	Junior Ballroom C	Perfluoroalkyl acids in Arctic Caribou and Reindeer	M Gamberg	Gamberg Consulting, Whitehorse, Yukon, Canada	-- DCG Muir, -- Y Lind, -- A Karrman, -- C Cuyler, -- F Rigét, -- R Bossi, -- P Carlsson, -- A Roos
9711	R5-12	08/24/2017	15:55 - 16:15	Persistent Organic Pollutants (PO	Junior Ballroom D	Organohalogen pollutants in surface particulates from workshop floors of four major e-waste recycling sites in China and implications for emission lists	yanhong zeng	State Key Laboratory of Organic Geochemistry, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences, Guangzhou, Guangdong, China	Prof. xiaojun luo, Prof. bixian mai
10068	R6-12	08/24/2017	15:55 - 16:15	Exposure to POPs in Urban, Indo	Parkville	Preliminary assessment of occupational exposure to flame retardants in Canadian e-waste recycling facility	ML Diamond	Department of Earth Sciences, University of Toronto, Toronto, Ontario, Canada   Department of Physical and Environmental Sciences, University of Toronto Scarborough, Toronto, Ontario, Canada   Dalla Lana School of Public Health, University of Toronto,	Ms. LV Nguyen, Dr. C Yang, Dr. LM Jantunen, Dr. WA Stubbings, Dr. J Guo, Dr. M Venier, Dr. L Melymuk, Prof. VH Arrandale

10064	R1-13	08/24/2017	16:15 - 16:35	Capacity Building in Developing Countries	Grand Ballroom AB	From e-Waste Smelting Processes to the Implementation of CALUX Bioassay	E. M. Coyanis	Mintek, Randburg, Johannesburg, South Africa	Dr. D. Saku, Miss S. Abrahams
10154	R2-13	08/24/2017	16:15 - 16:35	Short and Medium Chain Chlorinated Paraffins	Grand Ballroom CD	Short-Chain Chlorinated Paraffins (SCCPs), a Toxic Industrial Chemical Included for Global Prohibition, Contaminate Children's Toys	P.K. Miller	Alaska Community Action on Toxics, Anchorage, Alaska, USA	Dr. J. DiGangi, Dr. J. Pulkrabová, Dr. J. Tomasko
9671	R3-13	08/24/2017	16:15 - 16:35	Polycyclic Compounds	Junior Ballroom AB	Occurrences and Characteristics of Chlorinated and Brominated Polycyclic Aromatic Hydrocarbons in Stack Gas of Waste Incinerators	Rong Jin	State Key Laboratory of Environmental Chemistry and Ecotoxicology, Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences	Dr. Guorui Liu, Dr. Minghui Zheng
10153	R4-13	08/24/2017	16:15 - 16:35	POPs in the Arctic	Junior Ballroom C	Brominated flame retardants in air at Toolik Lake, Arctic	KJ Hageman	Department of Chemistry, University of Otago, Dunedin, Otago, New Zealand	Dr. CL Davie-Martin, Dr. YP Chin, Mr. BJ Nistor, Dr. H Hung
9794	R5-13	08/24/2017	16:15 - 16:35	Persistent Organic Pollutants (POPs)	Junior Ballroom D	Airborne PAHs and PCBs along a coastal, urban-industrial gradient in Rio de la Plata Estuary, Argentina	J.C. Colombo	Laboratorio de Química Ambiental y Biogeoquímica (LAQAB-UNLP), La Plata, Buenos Aires, Argentina   Comisión de Investigaciones Científicas (CIC), Buenos Aires	Dr. M. Astoviza, Ms. M.C. Migoya, Mr. M. Morrone, Mr. C. Bilos
10073	R6-13	08/24/2017	16:15 - 16:35	Exposure to POPs in Urban, Indoor and Outdoor Environments	Parkville	Elucidating Levels and Pathways of Human Exposure in Ireland to POP-BFRs and PFOS (ELEVATE)	N Wemken	National University of Ireland, Galway, Galway, Ireland	Dr. D Drage, Dr. M Coggins, Dr. M Abdallah, Prof. S Harrad
10225	R2-14	08/24/2017	16:35 - 16:55	Short and Medium Chain Chlorinated Paraffins	Grand Ballroom CD	Characterization of placental transfer of short- and medium-chain chlorinated paraffins in paired maternal and cord serum	Lin Qiao	Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, Beijing, China	Dr. Lirong Gao, Dr. Dan Xia, Dr. Minghui Zheng
9853	R3-14	08/24/2017	16:35 - 16:55	Polycyclic Compounds	Junior Ballroom AB	Atmospheric Polycyclic Aromatic Hydrocarbons (PAHs) in the Capital City of Seoul, South Korea: Spatial Distribution, Seasonal Variation, and Source Identification	S-J Kim	Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea, Republic of	Mrs. H-J Park, Mr. S-J Lee, Mr. C-H Kim, Dr. S-B Lee, Prof. S-D Choi
10116	R4-14	08/24/2017	16:35 - 16:55	POPs in the Arctic	Junior Ballroom C	Climatic Influence on temporal trends of polychlorinated biphenyls (PCBs) and organochlorine pesticides in landlocked char from lakes in the Canadian High Arctic	Derek Muir	Environment & Climate Change Canada, Water Science & Technology Directorate, Burlington, ON, ON, Canada	Dr. Ana Cabrerizo Pastor, Dr. Günter Köck, Mr. Debbie Iqaluk, Mr. Xiaowa Wang
9913	R5-14	08/24/2017	16:35 - 16:55	Persistent Organic Pollutants (POPs)	Junior Ballroom D	Atmospheric levels of polybrominated diphenyl ethers (PBDEs) and hexabromocyclododecane (HBCDDs) in Gauteng Province, South Africa using passive air samplers.	ZJ Katima	Tshwane University of Technology, Pretoria, Gauteng Province, South Africa   University of Dar es Salaam, Dar es Salaam, Tanzania, United Republic of	Prof. OJ Okonkwo, Dr. OI Olukunle, Dr. AP Daso
10090	R6-14	08/24/2017	16:35 - 16:55	Exposure to POPs in Urban, Indoor and Outdoor Environments	Parkville	Emission rates of HBCD isomers from EPS and XPS insulation foams	H Kuramochi	National Institute for Environmental Studies, Tsukuba, Ibaraki, Japan	Mr. T Motoki, Dr. H Matsukami, Dr. T Sakurai, Dr. N Kajiwara
12951	PL-6	08/25/2017	08:30 - 09:15	Plenary VI	Grand Ballroom	Contamination and human exposure to micropollutants including dioxin-related compounds in informal recycling sites for e-waste and end-of-life vehicles	S Takahashi	Ehime University, Matsuyama, Japan	

**NOTE, PRESENTATIONS TAKING PLACE IN THE EXHIBIT HALL ARE POSTER PRESENTATIONS.**



# **Persistent, bioaccumulative and toxic contaminants in marine mammals: a legacy concern for conservationists**

Ross PS<sup>1</sup>

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The Stockholm Convention is a remarkable international treaty that was founded on good scientific research, concerns about health impacts in aquatic wildlife and on the safety of traditional seafoods for aboriginal communities, and the recognition that many persistent, bioaccumulative and toxic chemicals are travelling into remote regions of the world. Our work on marine mammals in Europe, the Arctic and the NE Pacific has shed light on the nature of food web bioaccumulation of POPs, and on the effects of PCBs on the endocrine and immune systems of different species. However, most troubling perhaps is our prediction that the Southern Resident Killer Whales frequenting the waters off Vancouver and Seattle will not be 'safe' from PCB-related health risks until the late 21<sup>st</sup> Century. This is one chemical among hundreds of thousands on the market. Such findings are highly relevant to conservationists dealing with real world threats to wildlife populations, but they also raise profound questions about the vulnerability of long-lived, high trophic level species, and about the effectiveness of chemical regulation and risk assessment paradigms. Simply put, short-term, lab-based toxicity testing with laboratory species fails to deliver the data needs of risk assessors, and we continue to conduct large-scale experiments in the natural world. A more precautionary approach to regulatory oversight would better capture such key considerations as trophic level, longevity, mobility and the relationship between endocrine disruption and the traditional measures of effects (growth, reproduction and mortality) before chemicals enter the marketplace.

## DIOXIN AND THE AHR: THE BEGINNINGS AND NO END IN SITE

Safe S<sup>1</sup>

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### Otto Hutzinger – The Early Days

In the late 1960's, Otto Hutzinger was a newly hired Research Officer at the National Research Council (NRC) Regional Laboratory on the campus of Dalhousie University in Halifax, Nova Scotia. His interest in PCBs and Dioxins resulted from a conversation with Vlado Zitko, a scientist with the Fisheries Research Board in St. Andrews New Brunswick. Vlado indicated his concern regarding organochlorine environmental contaminants and suggested that environmental chemistry and impact of these compounds would be a "hot" area of research. I was also a Research Officer at NRC and Otto persuaded me to get involved in this new area of environmental research which would give us independence from our immediate supervisors and also be lots of fun. I reluctantly agreed, and from 1971-1974, we coauthored 35 refereed publications, at least 10 review articles, and two books, "The Chemistry of PCBs" (Hutzinger, Safe and Zitko) and "Mass Spectrometry of Pesticides and Pollutants" (Safe and Hutzinger) and founded a small company. Some of this early work described the first studies showing that PCBs could be photodegraded and metabolized (1-3), and these collaborative studies were continued after Otto was appointed Professor Environmental Chemistry at the University of Amsterdam in 1975 and I joined the University of Guelph in 1973. One of the lessons I learned from Otto was his attitude toward senior authorship and credit – he always favored his colleagues over himself.

After leaving NRC, Otto continued his studies on organohalogen pollutants and was the first to discover the formation and emissions of polychlorinated dibenzo-*p*-dioxins (PCDDs) and dibenzofurans (PCDFs) from municipal waste incinerators. Otto was an original thinker and mentor to a generation of environmental scientists at the Universities of Amsterdam and Bayreuth, and he was continually organizing research conferences (starting with Dioxin 1 in Rome), editing journals (e.g. *Chemosphere*), and books (e.g. *The Handbook of Environmental Chemistry*). Otto was one of a kind and is greatly missed.

### Dioxin and the Ah Receptor

The combination of several poisoning incidents due to occupational and accidental release of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) and contaminated PCBs in Fukuoka (Yusho poisoning), Taiwan (Yucheng poisoning), and Seveso (TCDD) coupled with their widespread environmental contamination, stimulated scientific, regulatory and legal concerns about halogenated aromatics. All of these issues and their resolution were presented and discussed during the annual "Dioxin Symposia". Although some occupational exposures and the Seveso accident primarily involved a single toxicant, TCDD, other accidents and environmental exposures to persistent organic pollutants (POPs) involved TCDD and many other individual PCDD, PCDF and PCB congeners. The analytical approaches included development of high resolution separation and detection approach which are now routinely used to quantify POP congeners from multiple sources at the sub-parts-per-trillion level. Since human and other biota are exposed to complex mixtures of POPs, it was imperative to develop hazard and risk assessment paradigms that could quantitatively assess mixture-induced responses. Pioneering work by Dr. Alan Poland (4)

showed that the mechanism of action of TCDD and structurally related PCBs, PCDDs and PCDFs involved initial binding to an intracellular protein designated as the aryl hydrocarbon receptor (AhR). This was later confirmed in AhR knockout mouse models where the characteristic AhR-mediated toxicities for TCDD and structurally related compounds were observed in wild-type but not AhR-knockout (AhRKO) mice. Thus, it was possible to develop a dioxin or toxic equivalents (TEQ) approach for risk assessment of TCDD- or dioxin-like compounds (DLCs), where

$$TEQ = \sum[(DLC_i) \times (RP_i)]$$

the dioxin equivalents is equal to the summation of the individual concentrations of the DLC ( $DLC_i$ ) times their relative potency ( $RP_i$ ) compared to TCDD (arbitrarily set at 1.0) (5). This initial approach has been continually refined and modified as new data become available and has been used extensively by regulatory agencies to reduce emissions and environmental/human exposures to DLCs. The TEQ approach was invaluable for estimating the potential toxicity of an important sub-class of POPs (i.e. DLCs); however, evaluation of the potential adverse effects of non-DLCs is still a major regulatory problem

#### **The AhR and Its Ligands: Health and Therapy**

Although AhRKO mice are viable and reproduce, initial studies by Bradfield and others have identified an increasing number of defects in these animals, demonstrating that the receptor may play a role in organ/tissue homeostasis (6,7). For example, AhR-deficient mice exhibit a decreased liver size but only during development due to defects in closure of the ductus venosus. AhRKO mice have difficulty in maintaining pregnancy, they have an increased susceptibility to infection indicating a role for the AhR in the immune system function and the AhR also plays a role in stem cell development. Moreover, there is extensive evidence from transgenic animal studies that the AhR plays a critical role in intestinal health via interactions with microbiota-derived AhR metabolites and the AhR exhibits tissue-specific promotion or protection from cancer (8). Ongoing research continues to add to the growing list of AhR functions in animal models and to a lesser extent in humans and this makes the AhR an ideal target for drug development.

Receptors such as the estrogen receptor are among the most well developed targets for drug development since receptor-mediated adverse effects can be treated with receptor antagonists and receptor-mediated health benefits can be enhanced by receptor agonists. Although AhR-interactions with TCDD and related compounds lead to well characterized toxicities, the AhR also binds several endogenous biochemicals, health promoting phytochemicals, AhR-active pharmaceuticals, multiple microbiota-derived AhR ligands and synthetic AhR antagonists (9). These compounds are selective AhR modulators (SAhRMs) that exhibit tissue-specific AhR agonist or antagonist activities and can be exploited for treatment of multiple diseases including cancer, inflammatory bowel disease, immune and autoimmune diseases and expansion of stem cells. Development of AhR-active drugs has been a "cautionary tale" due to concerns of "dioxin-like" side effects; however, some of the current AhR-based drugs in clinical trials include Laquinimod for treatment of multiple sclerosis and StemRegenin 1 (SR1), an AhR antagonist use for production of hemopoietic stem cells.

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## **Environmental Forensics of Persistent Organics Pollutants**

Gwen O'Sullivan, David Megson, Court Sandau, Donald Patterson

Environmental forensics is a fast growing field of science which incorporates interdisciplinary knowledge to assess the source, age and timing of release of a contaminant(s). Environmental forensic investigations are methodical assessments of multiple lines of information, which may be used in litigation, to allocate responsibility for contamination. Environmental forensic studies can range in complexity; the simplest form may involve the identification of a source of contamination based on the presence or absence of chemical markers. More complex cases may involve mixed sources and environmental weathering which require advanced statistical interpretation to detangle distinctive signatures. Environmental forensics not only involves litigious matters but may also be applied to publicly disputed issues to support a particular claim or a position.

In toxicological studies it is important to separate the World Health Organisation 12 dioxin like polychlorinated biphenyls (WHO 12). However in environmental forensics studies a greater number of congeners are often needed to be separated to identify processes such as microbial degradation, volatilisation, and biotransformation in humans. Advancements in analytical techniques, including single and multidimensional time of flight mass spectrometry, has allowed for such congener profile development at trace levels. The amount of data generated from such analyses is vast and can require advanced multivariate statistical analysis techniques to discern patterns/source, differentiate background influences, and apportion contributions/liability.

This presentation will examine the development of environmental litigation including key treaties, statutes, regulations and case law pertaining to the control of persistent organic pollutants. A review of the interdisciplinary requirements of environmental forensic investigations including legal sampling techniques, analytical advancements, fate and transport, and statistical presentation in court will be provided. The presentation will conclude with discussions on advancements, limitations and recommendations for the development of the field of Environmental Forensics.

Science and Policy of POPs through Passive Air Sampling  
Tom Harner

**Abstract:**

Since its inception in 2000, the polyurethane foam (PUF) disk passive air sampler has greatly advanced our understanding of the occurrence, transport and fate of persistent organic pollutants (POPs) and emerging chemicals. The ability to collect spatial information on both gas-phase and particle-associated POPs in a simple and cost-effective way has led to vast datasets for improving our understanding of regional and global-scale transport of POPs through models. This integration of passive air sampling data with models and emissions, coupled with the adoption of the PUF disk sampler by numerous research programs around the world, has led to the promulgation of the sampler under the Global Monitoring Plan (GMP) of the Stockholm Convention for addressing policy needs related to chemical risk assessment and risk management. The Global Atmospheric Passive Sampling (GAPS) network, which has been operating since 2005 at more than 50 sites on all seven continents, provides a unique global-scale picture on POPs. This plenary presentation will be a historical perspective of the PUF disk passive air sampler over the last 17 years. It will touch on the motivations for this technology, the early adoption that led to widespread use today, and the intersection of the science with policy needs at the international scale under the Stockholm Convention on POPs. We will also look to the future to some novel and exciting applications and approaches of passive air sampling.

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Contamination and human exposure to micropollutants including dioxin-related compounds in informal recycling sites for e-waste and end-of-life vehicles

Shin TAKAHASHI

Effective management of electronic waste (e-waste) has become a major issue of the modern world from both economic and environmental perspectives. Recently, end-of-life vehicles (ELV) has also become a matter of increasing concern because of their trade and management for reuse and recycling. E-waste and ELV contain valuable and reusable/recyclable components and material but requires appropriate handling and recycling because of the high content of many hazardous substances, including toxic heavy metals as well as polychlorinated biphenyls (PCBs), brominated flame retardants (BFRs) and other toxic additives. However, informal recycling for e-waste/ELV using primitive techniques, which have been noted in developing or newly industrialized countries, results in environmental release of not only hazardous substances contained in these 'modern' wastes but also toxic secondary contaminants, including complex mixtures of dioxin-related compounds (DRCs), polychlorinated dibenzo-*p*-dioxins/dibenzofurans (PCDD/Fs) and their brominated and mixed brominated/chlorinated analogues (PBDD/Fs and PXDD/Fs), as well as chlorinated/brominated polyaromatic hydrocarbons (Cl-/Br-PAHs). Assessing the environmental and human health impacts related to these pollutants from informal waste recycling activities is challenging due to the large number of compounds and the big data gap regarding their toxic potency. For the last several years, we conducted environmental and human monitoring in informal recycling sites for e-waste and ELV in northern Vietnam and Ghana, to evaluate environmental release of micropollutants including various DRCs and to assess their human health risk. I will present some details on the occurrence and contamination status of micropollutants in the e-waste/ELV recycling sites in northern Vietnam and discuss toxic identification and evaluation in view of dioxin-like toxicities using the dioxin receptor-CALUX *in vitro* bioassay. In addition, our recent results on targeted and non-targeted analysis for DRCs and Cl-/Br-PAHs in soil from an e-waste burning site in Ghana will be reviewed.

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# Estimation of Polychlorinated dibenzo-p-dioxin, dibenzofuran, and biphenyl sources in Chinese mitten crabs

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## Introduction

In September 2016, the Hong Kong Centre for Food Safety found PCDD/F and PCB concentrations in Chinese mitten crabs (*Eriocheir sinensis*) imported from Jiangsu Province, China, higher than the relevant food safety standard (6.5 pg toxic equivalent (TEQ) g<sup>-1</sup> wet weight (ww)) [1]. PCDD/F and PCB pollution events involving food or animal feed have caused great public concern [2].

Chinese mitten crab is a traditional savory food that is now commonly eaten in China [3]. Mitten crabs require specific environmental conditions to grow well [4,5]. They are omnivorous and mature mitten crabs migrate to saline water [6]. Humans usually eat the white meat and the brown meat (including the hepatopancreas and the gonads). Clark et al. found higher PCDD/F and PCB concentrations in brown meat than white meat from mitten crabs [7].

The objective of this study was to produce an inventory of PCDD/F and PCB concentrations in brown meat from Chinese mitten crabs collected in different areas. Identify potential sources of PCDD/Fs and PCBs to mitten crabs. Evaluate the health risks posed by PCDD/Fs and PCBs in Chinese mitten crabs to humans consuming the crabs.

## Materials and methods

Chinese mitten crabs were collected from Taihu Lake, Hongze Lake, Yangcheng Lake, and Gehu Lake, in Jiangsu Province. A total of 32 mitten crabs, each of a commercially appropriate size (around 100 g), were collected. The brown meat from two crabs of the same sex and from the same sampling site was mixed to form one sample for PCDD/F and PCB analysis. A total of 16 brown meat samples were therefore produced. Samples of the main materials consumed by crabs were collected and analyzed, including CuSO<sub>4</sub>, ZnSO<sub>4</sub>, broken corn, aquatic biota, crab particles with feed (later simply called feed), water, and sediment.

The PCDD/F and PCB concentrations were determined following US Environmental Protection Agency methods 1613 and 1668A using an Agilent 6890 high-resolution gas chromatograph (Agilent Technologies, Santa Clara, CA,



USA) coupled to a Waters Autospec Ultima high-resolution mass spectrometer (Waters Corporation, Milford, MA, USA). We evaluated the risks posed by PCDD/Fs and PCBs to humans consuming crabs from the study area. The mean daily PCDD/F and PCB intakes in crab brown meat (in pg TEQ kg<sup>-1</sup> body weight (bw) d<sup>-1</sup>) were estimated by multiplying the PCDD/F and PCB TEQ (in pg TEQ g<sup>-1</sup> ww) by the mean daily amount of crab brown meat consumed (g d<sup>-1</sup>) and dividing the results by the typical adult body weight (60 kg). A person will typically consume 3–100 g of brown and white crab meat in a meal, and it is considered reasonable to assume that 50 g crab meat is consumed per person per meal containing between two and three crabs [5]. Brown meat typically contributes 71% of total crab meat, meaning that it is reasonable to assume that 36 g of crab brown meat is consumed per person per meal.

### Results and discussion

The PCDD/F and dioxin-like (dl) PCB TEQs in the brown meat samples were 1.3–15 pg TEQ g<sup>-1</sup> with the mean concentration of 5.7 pg TEQ g<sup>-1</sup>. The indicator PCB concentrations were 1.5–8.7 ng g<sup>-1</sup> with the mean level of 5.2 ng g<sup>-1</sup>. The indicator PCB concentrations did not exceed the current European Union maximum levels for fish and fishery products (75 ng g<sup>-1</sup>) in any of the meat samples. However, the PCDD/F and dl-PCB TEQs in some of the samples were higher than the relevant limits (3.5 pg TEQ g<sup>-1</sup> for PCDD/Fs and 6.5 pg TEQ g<sup>-1</sup> for the sum of the PCDD/F and dl-PCB TEQs) [5]. The PCDD/F and dl-PCB congener profiles in the brown meat samples from the different lakes are shown in Figure 1.

The sources of PCDD/Fs and PCBs to Chinese mitten crabs were evaluated to allow the primary source of PCDD/Fs and PCBs to the crabs to be identified. A material balance for crab feeding was calculated, and the results are shown in Figure 2. The calculated total PCDD/F and dl-PCB TEQ in crab brown meat was 44 ng per ha. Using a mean feed dose of 95 kg per ha gave a PCDD/F and dl-PCB input of 94 ng TEQ per ha. The total PCDD/F and dl-PCB TEQs for CuSO<sub>4</sub>, ZnSO<sub>4</sub>, broken corn, aquatic biota, sediment, and water per ha of crab pond were 2.3, 0.61, 2.3, 0.17, 7212, and 2.7 ng, respectively. The PCDD/F and dl-PCB inputs were much higher than the outputs taking all potential sources into consideration. The excess PCDD/Fs and PCBs were assumed to be deposited in the aquatic environment, particularly the sediment.

Wang et al. found high PCDD/F concentrations (8.6–41 pg g<sup>-1</sup>) in feed-grade CuSO<sub>4</sub>, meaning that feed-grade CuSO<sub>4</sub> transfers PCDD/Fs into the food chain [2]. The same is true of ZnSO<sub>4</sub>. Sediment is the final sink for many organic pollutions [8,9]. The release of pollutants from sediment will pose ecological risks [8]. Water is an intermediate medium through which pollutants can be transferred from the external environment to the sediment, so water plays an important role in the environmental behaviors of pollutants [10]. PCDD/Fs and PCBs are hydrophobic, so they easily enter the organic matter in aquatic environments [11].

We assumed that a person would consume crab once each day, meaning 36 g brown meat per day. The calculated mean PCDD/F and dl-PCB TEQ exposure was 3.4 pg TEQ kg<sup>-1</sup> bw d<sup>-1</sup> (range 0.78–9.1 pg TEQ kg<sup>-1</sup> bw d<sup>-1</sup>, median 2.6 pg TEQ kg<sup>-1</sup> bw d<sup>-1</sup>). The mean was only 0.24 times the European Union tolerable weekly intake (14 pg TEQ kg<sup>-1</sup> bw d<sup>-1</sup>) [12], and the maximum was only 0.65 times the tolerable weekly intake. The consumption of mitten crabs therefore appears to be safe, but the consumption of crabs by a person already consuming large amounts of fish products may give that person a high PCDD/F and PCB body burden.

### Acknowledgements

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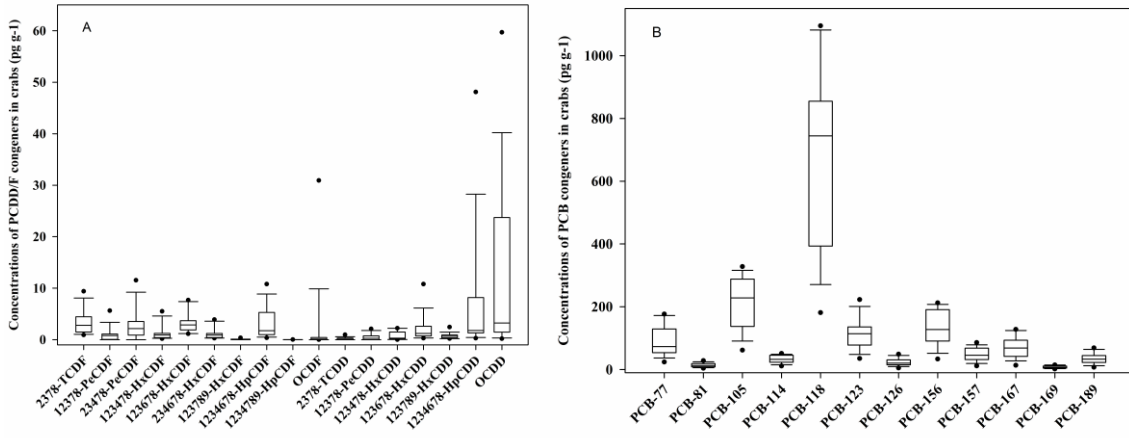


Figure 1. Concentrations of PCDD/Fs (A) and dl-PCBs (B) in the crab brown meat samples

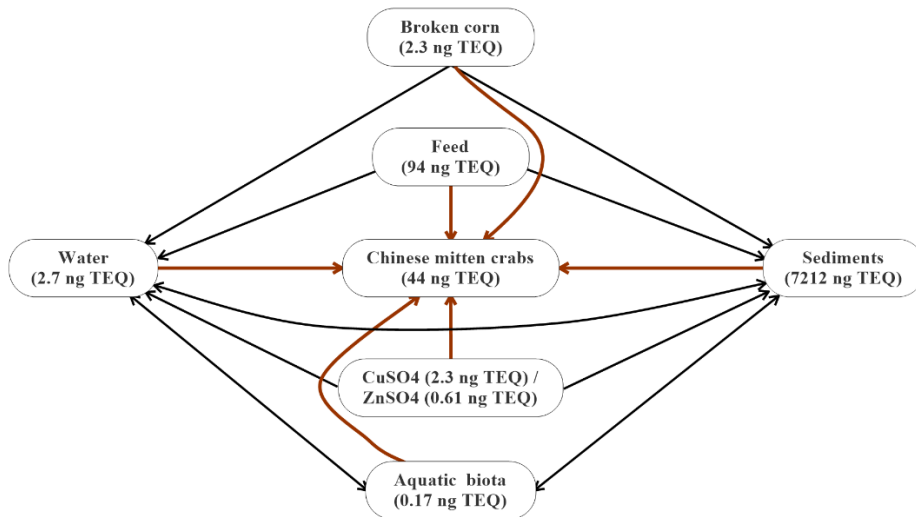


Figure 2. Relationships between the PCDD/Fs and dl-PCBs in potential sources and in Chinese mitten crabs

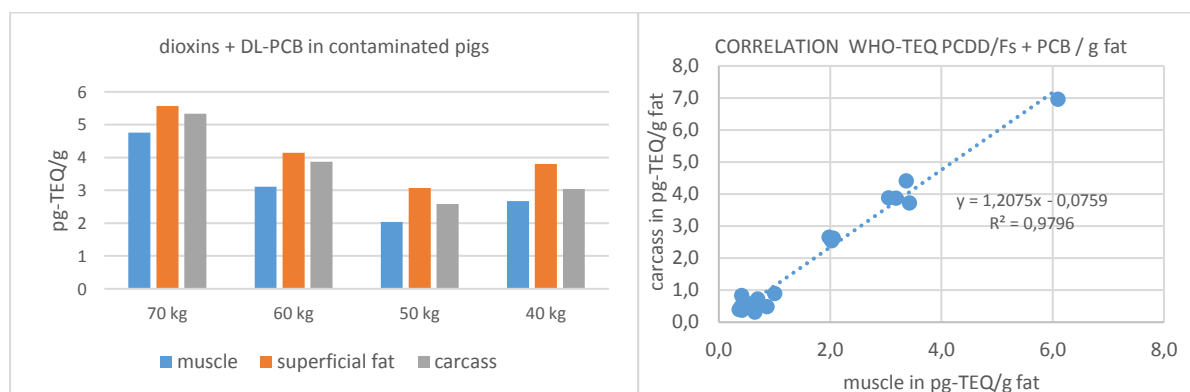
## Decontamination of pigs exposed to an environmental source of PCB

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In 2016, a French national monitoring plan highlighted a PCB contamination in a pig farming. The relevant National Reference Laboratory together with veterinary services conducted extended investigations to determine the contamination source at the farm level. A selection of samples representative of potential contamination sources was collected (pig fats, feed, materials, dust and soil) and, eventually, the feed storage tank paints were identified as the PCB source responsible of the pig's feed contamination. Paints presented upon characterization tremendous DL-PCB amounts ( $>1 \mu\text{g}\cdot\text{g}^{-1}$  of matrix).

In parallel, complementary studies aiming at understanding and evaluating the pig's decontamination were conducted according to controlled conditions. Twenty pigs belonging to four different weight groups (40 kg, 50 kg, 60 kg and 70 kg) and corresponding to four age groups (13, 16, 18 and 20 weeks old, respectively) were selected from the farm. Eight of them, used as control animals, were immediately slaughtered in order to evaluate the lipid content and the dioxins and PCBs contamination level prior to decontamination. The level of contamination was, as expected, above the EU established level (reg 1259/2011/EC) set at  $1.25 \text{ pg-TEQ/g}$  fat for the dioxins and DL-PCB sum (Figure 1).



**Figure 1:** level of contamination in different tissues.

**Figure 2:** correlation in different tissues.

The other twelve pigs were fattened in an uncontaminated environment and slaughtered after two (n=3) or three (n=9) months. Muscle, subcutaneous fat, peritoneal fat, liver, blood and a half carcass were systematically collected. PCDD/Fs and PCBs analyses were performed by GC-HRMS according to ISO 17025 accredited method on each sample [1,2]. Obtained results permitted to determine a decontamination kinetic, to study the contamination levels between the different compartments (correlation) and to evaluate the global contamination in the animal (half carcass) (Figure 2).

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## Persistent organic pollutants in two species of white-blooded Antarctic fish

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### Introduction

Persistent organic pollutants (POPs) are ubiquitous environmental chemicals and can be found even at very remote areas such as the Antarctic Ocean. Via long-range atmospheric transport (LRAT), global distillation processes and cold condensation POPs reach the Antarctic ecosystem and bioaccumulate in aquatic biota [1 – 3]. Polychlorinated biphenyls (PCBs), polybrominated diphenyl ethers (PBDEs), and former widely used pesticides such as  $\gamma$ -hexachlorocyclohexane ( $\gamma$ -HCH), hexachlorobenzene (HCB), and *p,p'*-DDT are lipophilic organic chemicals with high potential for bioaccumulation. Antarctic fish which hold high trophic positions, appear to exhibit low endogenous elimination rates for POPs and are therefore expected to show increasing levels of these chemicals with rising exposure to POPs and climate warming [4 – 8]. Therefore, two fish species of Antarctic icefish originating from the Southern Ocean around Elephant Island, were caught and analyzed for their levels of PCBs, PBDEs, HCB, HCHs, and DDTs in muscle tissue and ovaries. Additionally, toxic equivalents (TEQs) and bioanalytical equivalents (BEQs) were determined and compared. We used two species with different feeding habits and trophic web positions: the planktivorous *Champscephalus gunnari* and the piscivorous *Chaenocephalus aceratus*.

### Materials and methods

Two species of white-blooded icefish (*Channichthyidae*) were caught during a cruise with the research vessel *Polarstern* during March 13 to April 9, 2012, around Elephant Island and the South Shetland Islands. POPs were analyzed in muscle and ovary tissue of mature, female fish. All tissue samples were wrapped in aluminum foil and stored at -20°C until analysis. Muscle and gonad samples were defrosted, cut into small pieces and lyophilized at 33 Pa for 72 h until constant weight. Dried tissue of muscle or gonads was ground with anhydrous sodium sulfate and quartz sand to obtain a fine powder. The homogenate was extracted using a speed-extractor (E-914, Büchi, Switzerland) with a mixture of *n*-hexane/dichloromethane (1:1) as described by Hartmann [9]. After the evaporation of the solvents, the amount of lipids was determined gravimetrically. After the addition of <sup>13</sup>C<sub>12</sub> labeled internal standards and dilution with *n*-hexane the solution was treated with 3 mL of oleum (7% SO<sub>3</sub> in conc. sulfuric acid). The suspension was centrifuged at 5'000 rpm for a few minutes and the *n*-hexane layer with the target analytes was collected; this extraction step was repeated twice. After evaporation of the solvents to 0.5 mL the extract was chromatographically purified on a multilayer mini silica gel column. The column was eluted with 5 mL *n*-hexane followed by 5 mL *n*-hexane/dichloromethane (1:1). Subsequently, the solvent was evaporated to 30  $\mu$ L and the recovery standard (<sup>13</sup>C<sub>12</sub> labeled PCB-70) was added. Quantitative determination of the target analytes was carried out by gas chromatography/high resolution mass spectrometry (GC/HRMS) at a mass resolution of 8'000 as described in the literature [10, 11]. The same extracts that were used for chemical analysis were used in the DR-CALUX bioassay for the determination of bioequivalent values (BEQs). The bioassay was performed by BioDetection Systems b.v. in Amsterdam (The Netherlands).

## Results and discussion

All samples contained detectable levels of the target compounds. Most analyte concentrations and the TEQs and BEQs were clearly below levels in temperate species. Concentrations were about 15 to 110 times higher when calculated on a lipid weight basis compared to fresh weight basis. Our results revealed higher contaminant levels in ovary than in muscle tissues of both species. Overall, PCBs were the predominant group among all compounds measured in this study followed by the DDTs, PBDEs, HCB and  $\gamma$ -HCH (see Table 1 and Figure 1). Comparison with data from the literature points to higher PCB and DDT concentrations than those measured in icefish in the 1990ies.

Among the PCBs, PCB 153 contributed by 28% in muscle and by 26% in ovaries to all PCBs in both species. The second most abundant PCB were PCB 138 (26%) and 101 (21%). No significant difference in the PCB pattern of tissues, muscle and ovaries, and the two species of icefish was detectable (see Figure 2).

In the ovaries, levels of *p,p'*-DDE, *o,p'*-DDT, and *p,p'*-DDT were significantly higher in *C. aceratus* compared to those of *C. gunnari*. Moreover, DDT was significantly higher in muscle and ovaries of *C. aceratus* compared to *C. gunnari*. Among the DDTs, *p,p'*-DDE showed the highest concentration of up to 57% in muscle of *C. aceratus* (see Figure 1 and 2).

For  $\gamma$ -HCH, no difference was noticeable between the tissues of the two icefish when considered on the lipid weight basis. HCB concentrations (ng/g lw) were higher in muscle and ovaries of *C. aceratus* than in *C. gunnari* (see Figure 1). In case of the PBDEs, the pattern was dominated in both icefish by BDE 47 (59% in muscle, 54% in ovaries), followed by BDE 99 with approximately 20% and BDE 100 with approximately 12% (see Figure 2). This pattern is in line with the BDE congener distribution found in fish around the globe and is similar to the composition of the technical pentabromo diphenyl ether product [10, 12, and 13].

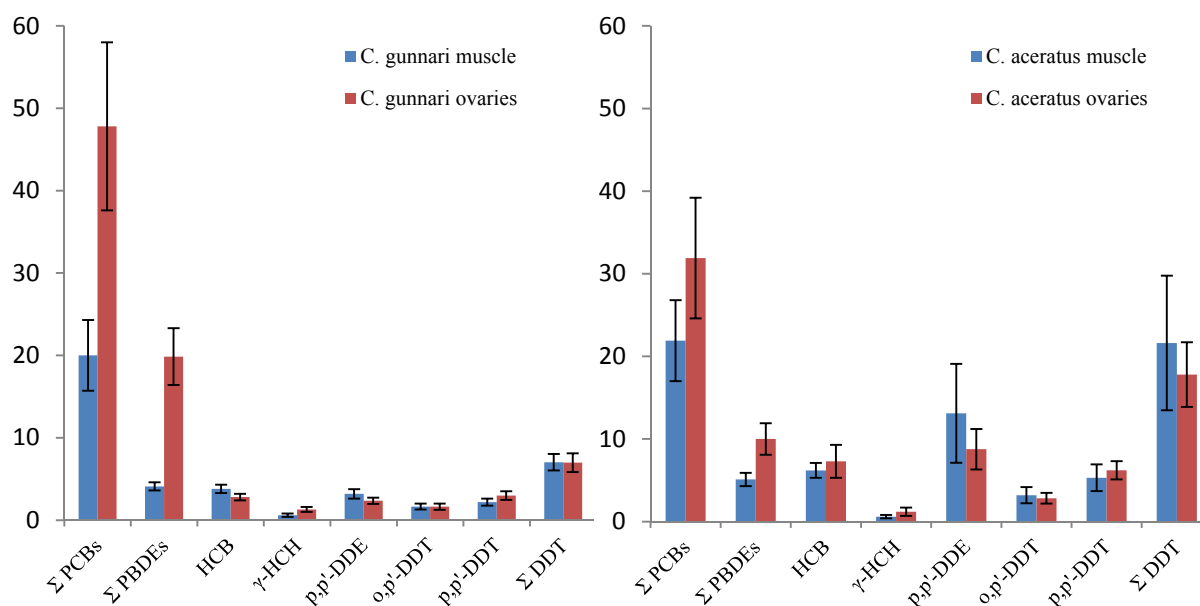


Figure 1: Mean concentrations ( $\pm$  sem) of  $\Sigma$  PCBs (28, 52, 101, 138, 153 and 180),  $\Sigma$  PBDEs (28, 47, 99, 100, 153, 183 and 197), HCB,  $\gamma$ -HCH, and  $\Sigma$  DDT (*p,p'*-DDE, *o,p'*-DDT and *p,p'*-DDT) in muscle and ovaries of the two icefish *C. gunnari* (n=11) and *C. aceratus* (n=10) in ng g<sup>-1</sup> lipid weight.

Table 1: Mean levels of organic contaminants in tissues of two Antarctic icefish species in ng g<sup>-1</sup> lw. TEQs and BEQs reported in pg g<sup>-1</sup> fw.

	<i>C. gunnari</i> muscle	<i>C. gunnari</i> ovaries	<i>C. aceratus</i> muscle	<i>C. aceratus</i> ovaries
Lipid content %:	2.13	6.93	1.45	2.64
TEQ	0.47	0.07	0.16	0.53
BEQ	0.20	5.14	0.15	0.57
Σ PCBs	20.04	47.82	21.91	31.87
Σ PBDEs	4.08	19.85	5.01	10.03
HCB	3.82	2.84	6.22	7.37
γ-HCH	0.59	1.25	0.58	1.18
<i>p,p'</i> -DDE	3.19	2.36	13.11	8.76
<i>o,p'</i> -DDT	1.65	1.64	3.20	2.83
<i>p,p'</i> -DDT	2.19	2.98	5.31	6.21

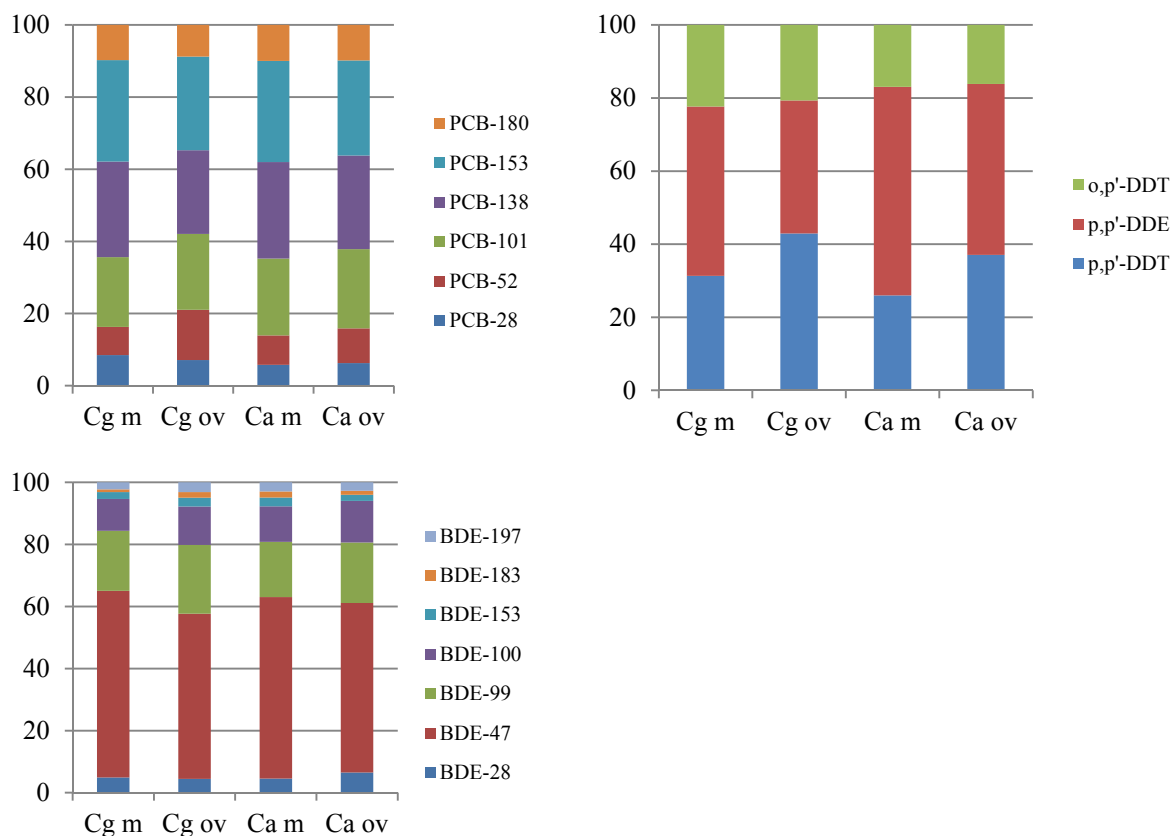


Figure 2: Congener composition (percentage) of PCBs, DDTs and BDEs in muscle (m) and ovaries (ov) of *C. gunnari* (Cg) and *C. aceratus* (Ca).

Long-term observations of POP levels in Antarctic biota are scarce. Similar studies as the present work were published by Weber and Goerke [5, 14]. From 1987 to 1996, these authors reported an increase of PCB 153 and PCB 180 levels in *C. aceratus* but not in *C. gunnari*. In the present study, we found three times higher concentrations of the same PCB congeners in the tissues of our two icefish species than in the previous study from 1996 published by Weber and Goerke [5]. In contrast, the HCB levels show a declining trend from the 1987 study to our current measurements. A similar pattern of stable and declining HCB levels by up to 2.5% per year has also been observed in Arctic biota since the late 1980ies [15]. In *C. aceratus*, levels of *p,p'*-DDE had already increased from 1987 to 1996, and the values we measured in both tissues of *C. aceratus* were almost twice as high as in 1996 [5, 15]. On the other side *p,p'*-DDE concentrations in *C. gunnari* remained at similar levels from 1987 over 1996 to the present study. Despite this, overall DDT levels were increasing from 1987 to 1996 in both icefish species, and the herein presented values are also slightly higher than those in 1996, suggesting an increasing trend of DDTs in icefish in the Antarctic region of Elephant Island and South Shetland Islands. Conclusively, PCB and DDT concentrations tend to rather increase than decrease in tissues of *C. aceratus* and *C. gunnari* from Antarctica. Additionally, worldwide climate change contributes to an increased volatilization of POPs, and via long range atmospheric transport these toxic contaminants reach even very remote regions like the Low and High Antarctica. Concurrently, accelerated melting of glaciers and ice masses in the Antarctica may contribute to increased release of stored POPs and thereby lead to a progressive contamination of the Southern Ocean and its biota.

### Acknowledgements

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# What wild bird eggs tell us about persistent organic pollutants in South Africa?

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## Introduction

Since the original release of Rachel Carson's book, *Silent Spring* in 1962, birds have been recognized as sentinel species for persistent organic pollutants (POPs). Birds are specifically sensitive to POPs. As birds inhabit almost every conceivable habitat and feeding niche, they make excellent indicators for the status of POPs within a specific environment. Birds not only indicate the presence of POPs, but through the investigation of distribution of pollutants within various species representing different habitats, they also indicate possible sources of these chemicals.

Bird eggs are considered good indicators of organohalogen compounds in the environment owing to their high lipid and protein content. Therefore, eggs as a matrix represent both the standard accumulation pattern associated with POPs in lipids, as well as the accumulation of perfluorinated compounds (PFCs) in proteins. During egg formation, pollutants are transferred from the female bird to her eggs, reflecting the body burden of the female bird indicating the level of these pollutants in the environment.

Since the early 2000s, numerous studies on the concentrations of POPs in birds' eggs collected in South Africa have been conducted [1,2,3,4,5,6]. These studies focused on numerous classes of POPs (polychlorinated biphenyls (PCBs), organochlorine pesticides (OCPs), PFCs, brominated flame retardants (BFRs), and dioxins). Here, we review the concentrations of POPs in wild bird eggs from South Africa. The contamination profile, species-specific differences, and the influence of different feeding guilds and habitat was investigated.

## Materials and methods

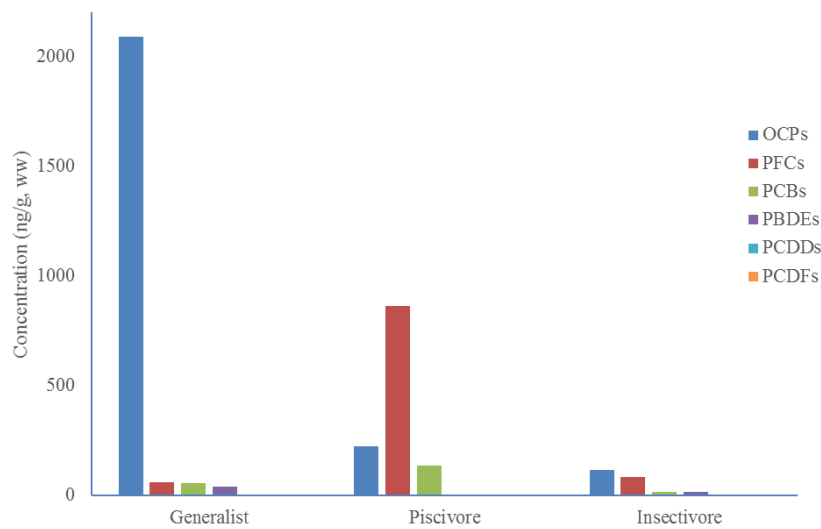
The analyses of BFRs, OCPs, and PCBs were performed using gas chromatography mass spectrometry (GC-MS) and gas chromatography coupled to electron capture detectors ( $\mu$ -ECD) at the Laboratory of Environmental Toxicology at the Department of Food Safety and Infection Biology, Norwegian University of Life Sciences, Norway. The laboratory is accredited by the Norwegian Accreditation for testing biological material of animal origin according to the requirements of the NS-EN ISO/IEC 17025.

PFCs were analysed at the National Metrology Institute of South Africa (NMISA). Briefly, subsamples of homogenized eggs were extracted in duplicate with methanol, spiked with internal standard, and purified using dispersive solid phase extraction with activated carbon (EnviroCarb™). Thereafter, samples were concentrated, filtered, and analysed on an Agilent 1100 Series HPLC coupled to a Waters Micromass Quattro Micro electrospray ionization tandem MS, using a fluorinated reverse phase column. For a calibration curve to be used for quantification an  $R^2$  greater than 0.99 had to be obtained. Blank matrix, method blank, and spiked matrix-matched recovery control samples were included with each batch to ensure the quality of the extraction and analytical runs.

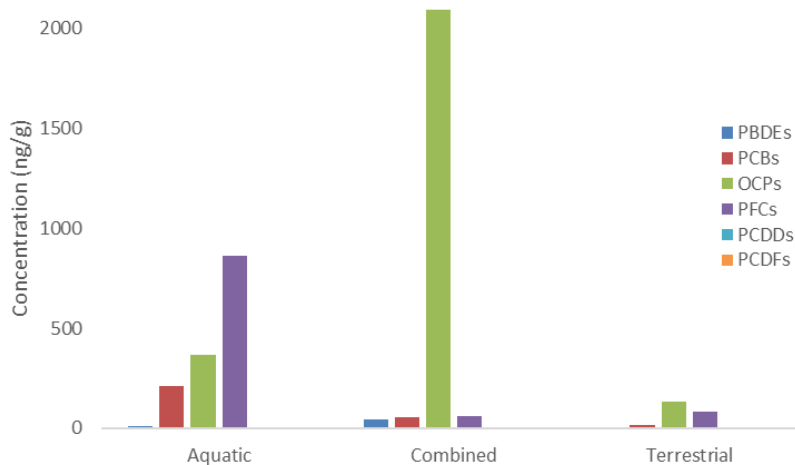
## Results and discussion

All of the bird eggs analysed had quantifiable levels of one or more of the POPs, irrespective of the species or the sampling location. As expected, the feeding guild and habitat of the wild birds had a statistically significant effect on the POPs concentrations (ANOVA;  $p < 0.05$ ; Figures 1 and 2). OCPs and BFRs were more prevalent in species that were opportunistic feeders (termed generalist that utilized both the aquatic and terrestrial environment for feeding), whereas PFCs and PCBs were prevalent in piscivores.

It is generally expected that concentrations of more recently regulated POPs such as PFCs and BFRs will be higher than classic POPs such as PCBs and OCPs. This is the case in wild bird eggs from central and western South Africa. In these areas, PFCs had the highest concentrations, followed by OCPs, PCBs, and the lowest concentrations were for BFRs. However, this was not the case in areas where DDT is still used for malaria control. In these regions, OCPs are generally an order of magnitude higher than any of the other POPs measured. The highest concentrations measured for POPs in wild bird eggs were 20 000 ng/g wm for OCPs, followed by 2 900 ng/g wm for PFCs; 540 ng/g wm for PCBs; 220 ng/g wm for BFRs and 0.01 ng/g wm for dioxins.



**Figure 1:** The distribution of POPs in eggs of wild birds from various feeding guilds



**Figure 2:** The distribution of POPs in wild bird eggs according to habitat use

As expected for higher trophic levels, PFCs and PCBs dominated in piscivore eggs. OCPs were higher in generalist eggs in areas where DDT is actively used for malaria control. Concentrations of BFRs were strongly influenced by the degree of association of the wild birds with humans: species (such as the Sacred Ibis) that feed on or close to human refuse dumps had the highest concentrations. High concentrations of PFCs in wild bird eggs are indicative of more recent exposure (as in the case of DDT), with these chemical classes being of highest concern within the South African environment.

The presence and variety of POPs in wild bird eggs indicate that these species are continually being exposed to a mixture of POPs. This signifies an environment impacted by anthropogenic activity. Even though the concentration of a specific compound may lie below the observable effects limit, the toxicity of the chemicals combined could negatively affect not only the bird species in these areas but also the environment as a whole and therefore human health.

### **Acknowledgements**

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# NATIONAL AND CONTINUOUS DIOXIN AIR MONITORING NETWORK IN TAIWAN (2006-2016): SPATIAL, TEMPORAL VARIATION AND EMISSION SOURCES APPORTIONMENT VIA POSITIVE MATRIX FACTORIZATION

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## Introduction

Polychlorinated dibenzo-*p*-dioxins and dibenzofurans (PCDD/Fs) are formed and released unintentionally from anthropogenic sources, and may be transported long distances to other environmental compartments, so the atmosphere is a major pathway for the transport and deposition<sup>1</sup>. Due to the reasons, it is important to monitor the atmospheric PCDD/Fs concentrations and evaluate the potential sources. The Environmental Protection Administration of Taiwan established the ambient dioxin air monitoring network in 2006. The objective was to determine the concentrations of PCDD/Fs of different regions in Taiwan. Recently, the monitoring of atmospheric dioxin is just in the representative areas, including the industrial areas and adjacent areas. Furthermore, the winter monsoon and dust storm event not only brings cold air but also transports air pollutants and dust over long distances from mainland China to Taiwan<sup>2, 3</sup>. Receptor models are statistical methods to analyze the relationship between receptor sites and emission sources. Positive Matrix Factorization (PMF) is a multivariate receptor method and it was developed by Paatero and Tapper in 1994<sup>4</sup>. The PMF statistical results can be interpreted quantitatively and estimate the relative contribution of the various possible sources. Applications of PMF receptor modeling have been widely employed in air pollution and sediment pollution studies<sup>5,6</sup>. The objective of this study is to determine the concentrations and congener profiles of atmospheric PCDD/Fs and to identify the spatial and temporal characteristics, moreover, estimate the relative contribution of various emission sources by applying the PMF receptor modeling to apportion of PCDD/Fs in atmospheric in Taiwan.

## Materials and methods

The Environmental Protection Administration of Taiwan established the ambient dioxin air monitoring network in 2006. Ambient air sampling was conducted from 2006 to 2016, and there are 86 air monitoring stations at different regions in Taiwan (Fig.1), 26 stations in northern, 8 stations in northwestern, 14 stations in central, 12 stations in southwestern, 19 stations in southern, 3 stations in northeastern, 3 stations in eastern and one background station in Mt. Lulin (2,862 m above mean sea level). Based on the Taiwan EPA standard method (NIEA A809.11B), ambient air samples for both PCDD/F compounds and total suspended particles were collected using high-volume sampling trains equipped with quartz fiber filters for collecting solid-phase PCDD/Fs. Polyurethane foam (PUF) plugs were used to retain PCDD/F compounds in the vapor phase. In this study, the analysis tool was used to reconstruct plausible contamination source of PCDD/F fingerprint patterns and calculate fraction contribution of plausible sources with PMF that is a receptor model and a multivariate method. The PMF 5.0<sup>7</sup> was used in this study which is provided by US EPA, to establish and analysis of the data set.

## Results and discussion

Annual variations (2006-2016) in atmospheric PCDD/Fs I-TEQ concentrations measured at all stations in Taiwan were shown in Fig.2. The mean concentrations decreased gradually, particularly during 2010-2013. The annual mean concentrations were  $48.1 \pm 44$  and  $31.7 \pm 31$  fg I-TEQ/m<sup>3</sup> in 2007 and 2016, respectively, decreasing of 35% in ten years. From 2006 to 2016, the annual mean concentrations of PCDD/Fs for all regions was shown in Fig.3. At different regions, there was the highest and lowest concentrations in central Taiwan and background station at Mt. Lulin, respectively. The median concentrations of dioxin for other regions were 16.0 (n=195), 24.0 (n=116), 38.0 (n=165), 41.0 (n=190), 40.0 (n=147), 13.5 (n=38), 11.0 (n=69) and 1.47 (n=185) fg I-TEQ/m<sup>3</sup> in northern, northwestern, central, southwestern, southern, northeastern, eastern and background station, respectively. The average concentrations of PCDD/Fs at all regions in Taiwan were lower than the Japanese annual standard (600 fg WHO-TEQ/m<sup>3</sup>)<sup>8</sup> and the national Germany target value (150 fg I-TEQ/m<sup>3</sup>)<sup>9</sup>. The seasonality of PCDD/Fs in atmospheric in Taiwan, where the levels in autumn and winter were higher than which in spring and summer (Fig.3). The mean concentrations were  $31.5 \pm 28.5$ ,  $26.5 \pm 23.0$ ,  $37.3 \pm 33.2$ , and  $61.5 \pm 48.3$  fg I-TEQ/m<sup>3</sup> in spring, summer, autumn, and winter, respectively. Due to the increase of industrial activities and the seasonal variations were the likely causes. Fig. 4 demonstrated that the distribution of OCDD, OCDF, 1,2,3,4,6,7,8-HpCDF at all regions in Taiwan, which accounted for 50-60%. The factor numbers of PMF model in Taiwan and in the different regions are presented in Table 1, respectively. The factor numbers selected could adequately reproduce the data set. The PCDD/F fingerprint patterns of the plausible sources (factors) in Taiwan was generated by PMF model. In Taiwan, the dioxin emissions from different stationary sources had been monitored by Taiwan EPA since 1999. The results indicated that the high abundances of PCDFs in the stack gas were observed in sinter plant and electric arc furnace (EAF), moreover, the difference between them were the amounts of PCDDs which were significantly higher in EAF compared to sinter plant emission. The difference between the municipal solid waste incinerator (MSWI) and the industrial waste incinerator (IWI) were the proportion of PCDFs. Generally, the abundances of PCDFs in IWIs were higher than in MSWIs in Taiwan. On the other hand, the secondary aluminum smelt plant (SAS) was characterized by higher amounts of OCDD, OCDF and 1,2,3,4,6,7,8-HpCDD, and the amount of PCDFs were higher than PCDDs. In contrast to SAS, the secondary zinc smelting plant (ZS) was characterized by higher amounts of OCDD, 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, and the amount of PCDDs were higher than PCDFs<sup>10</sup>. The PCDD/Fs in stack gases from cement kilns (CK) were characterized by higher amounts of 1,2,3,4,6,7,8-HpCDF, 2,3,7,8-TCDF, 1,2,3,7,8-PeCDF, and 2,3,4,7,8-PeCDF, and the amount of PCDFs were higher than PCDDs. Kuo<sup>12</sup> investigated the characteristics of PCDD/Fs in stack-flue gases from coal-fired power plants in Taiwan, indicated that characterized by higher amounts of OCDF, OCDD, 1,2,3,4,6,7,8-HpCDF, and 1,2,3,4,6,7,8-HpCDD, and the amount of PCDFs were also higher than PCDDs. Based on the previous atmospheric measurements during the long-range transport (LRT) events such as winter monsoon and dust storm event<sup>2,3</sup>, the similar features of the atmospheric PCDD/F profiles can be observed. The results indicated mainly dominated by the high-chlorinated PCDD/F congeners of OCDD, 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, and OCDF, moreover, the fraction of total PCDFs were higher than the total PCDDs. Black et al.<sup>12</sup> indicated the characteristics of PCDD/Fs from open burning and biomass burning (BB), indicated that characterized by higher amounts of PCDFs and PCDDs, respectively. Considering these observations, in this present study, those factors were hypothesized to describe the individual contributions. The result indicated that the major contributors were EAF (50.8%), LRT (25.0%), MSWI/IWI (14.2%), BB (9.2%), and sinter plant (0.81%) in Taiwan. From 2006 to 2013, the major contributors were EAF (33.3%~67.5%), MSWI/IWI (9.1%~44.1%), LRT (1.7%~36.7%) in Taiwan. In addition, the candidate sources contributed to atmospheric PCDD/Fs at different regions in Taiwan were listed in Table 1. For different regions, the major contributors were MSWI (62.9%), EAF (60.1%), EAF(69.5%), IWI (62.6%), EAF (55.7%), LRT (51.9%), and co-combustion (86.1%) in

northern, northwestern, central, southwestern, southern, northeastern, eastern and background station in Taiwan, respectively. The PCDD/F concentrations tended to decrease, but there were high concentration observed particularly in central Taiwan. It is important to continuous monitoring at the regular and futher control in industrial areas.

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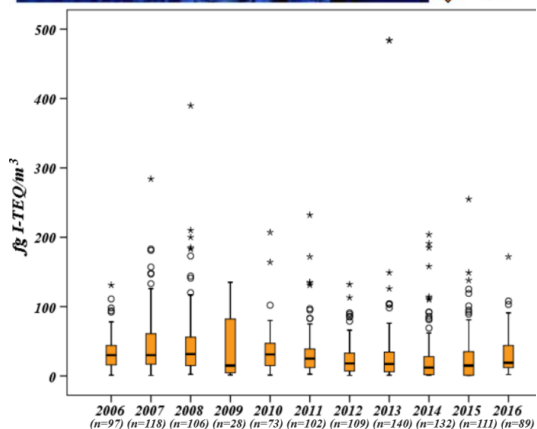
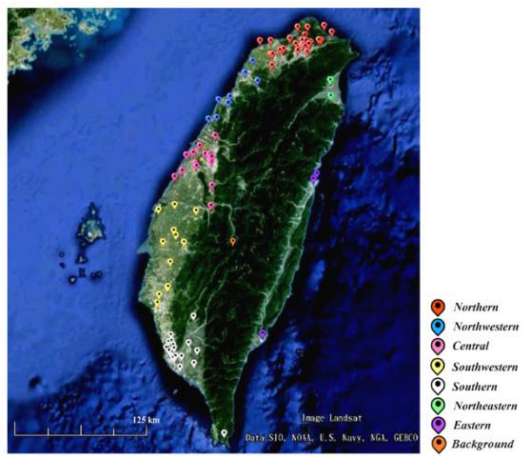


Figure 1. Ambient air monitoring network stations in Taiwan.

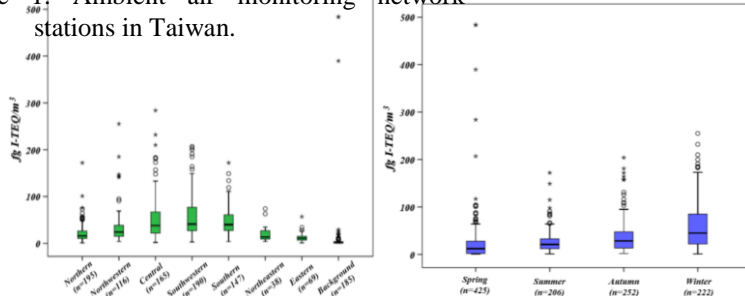


Figure 3. Variation of Atmospheric PCDD/Fs at different regions and season in Taiwan.

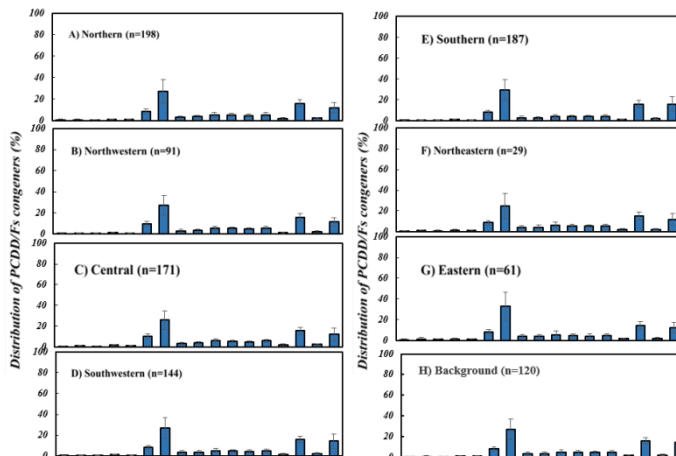


Figure 2. Annual variation of atmospheric PCDD/Fs in Taiwan during 2006 to 2016. (Any data not included between the whiskers would be plotted as an outlier with ○ and ★.)

Figure 4. Congener profiles for PCDD/Fs in atmospheric of different regions in Taiwan.

(Any data not included between the whiskers would be plotted as an outlier with ○ and ★.)

Table 1. The possible sources contributed to atmospheric PCDD/Fs at different regions in Taiwan.

Regions	Factor	Candidate source	Contribution (%)	Regions	Factor	Candidate source	Contribution (%)
Northern	A	MSWI	62.9	Southwestern	A	BB	23.2
	B	EAF	19.6		B	Power plant	14.1
	C	LRT	17.5		C	IWI	62.6
Northwestern	A	EAF	60.1	Northeastern	A	LRT	51.9
	B	MSWI	17.5		B	EAF	4.2
	C	LRT	22.4		C	MSWI	33.7
Central	A	Power plant	15.3	Eastern	A	Co-combustion	86.1
	B	EAF	69.5		B	CK	8.4
	C	MSWI	15.1		C	BB	5.5
Southern	A	SAS	21.9	Background	A	BB	52.4
	B	SZS	21.3		B	Open-B	25.4
	C	EAF	55.7		C	Unknown	22.2
	D	Sinter plant	1.2				



## Characteristics of ambient PCDD/Fs measured in a tropical city during rainy season

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### Introduction

Polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzo-furans (PCDFs) have received much public concern worldwide during the past 30 years due to their high toxicity and bioaccumulation. Exposure to PCDD/Fs can lead to heart problems, cause cancer and affect the unborn children even with the exposures to low-concentration PCDD/Fs. Major PCDD/Fs emission sources include combustion activity (fossils fuel combustion, municipal, hazardous and medical waste incineration, open burning, vehicle), metal smelting, chemical producing and re-emission from water body, sediment and soil [1]. Ambient air is an important transportation pathway of PCDD/Fs from the emission source to other environmental matrixes and then bio-accumulate via food chains. Studies in Asian cities indicate that ambient PCDD/F concentration range from 18 to 1170 fg I-TEQ m<sup>-3</sup> while those of PCBs range from 2 to 15 fg I-TEQ m<sup>-3</sup>. Atmospheric gas/particle partitioning influences the fate of these POPs such as the deposition, chemical reaction, long-range transport and human and ecosystem health effects [2, 3]. Various studies indicate that PCDD/Fs in ambient air strongly distribute in particle phase, accounting for 70% to 80%. Therefore, it is essential to understand the gas/particle partitioning models and the effects of environmental parameters on gas/solid partitioning. In addition, industrial activities without strict environmental management in developing countries release significant amount of PCDD/Fs into various environmental compartments. Relocation of industrial manufactory and facility from China to South East Asia due to increasing wage has been significant in recent few years, however, studies focusing on level of PCDD/Fs in environment matrixes of South East Asia countries are limited. Therefore, it is important to conduct sampling and analysis to better understand POPs contamination in this area. As the biggest city in Vietnam, Hochiminh city has the population over 10 million in 2016 and the amount of motor vehicles is over 8 million. Beside traffic emission, dozens of industrial parks surrounding Hochiminh city could affect the local PCDD/Fs level in ambient air. The purpose of this study is to investigate the gas/particle partitioning of PCDD/Fs at different sites in Hochiminh city, Vietnam, including a historical Agent Orange spraying area during Vietnam conflict. In addition, the influence of meteorological parameters on POPs gas/particle distribution is also assessed and possible sources of these compounds are identified.

### Methodology

Hochiminh city is located in sub equatorial climate zone with high temperature and humidity throughout the year. Southern Vietnam in general and Hochiminh city in particular is classified as “Tropical Monsoon” climate in the Koppen climate classification. Average temperature and relative humidity are 28°C and 80%, respectively. The period starting from May to October is regarded as “rainy season” when monsoon bring high rainfall (nearly 2000 mm/year) to the city. Samples were collected simultaneously in commercial site (site A) and industrial site (site B) of Hochiminh city. In addition, the third sampling site (site C) is located in rural area in which 1.017.515 gallons of chemicals including Agent Orange was sprayed during the war. Detailed information of sampling sites is described in Figure 1. The sampling period began from July 25 to August 15, 2016 in rainy season of this city. Samples were collected using high volume samplers (Tisch PS1) complying with US EPA Method TO-9A and around 565 to 916 m<sup>3</sup> air volume was collected for a typical sampling duration of 2-3 days for each sample. PCDD/Fs in particle phase

was collected by quartz fiber filter (Whatman, 1851-101.6 mm) while those in gas phase was collected by polyurethane foam (PUF) plugs. Once the sampling was completed, they were spiked with known amounts of US EPA Method 23 internal standard solution before Soxhlet extraction with toluene for 16 h. The toluene extract was then concentrated to about 1 mL by rotary evaporation and was replaced by 5 mL hexane for pretreatment process. The PCDD/Fs sample was pretreated and fractionated by a series of clean-up columns including sulfuric acid silica gel column, Cape<sup>®</sup> column and active carbon column. Finally, the cleaned up solution of PCDD/Fs was spiked with known amounts of M23 recovery standard solution, and then analyzed for seventeen 2,3,7,8-substituted PCDD/Fs congeners with HRGC/HRMS.

### Results and discussion

Table 1 indicates that the average total solid particle (TSP) measured during the sampling time in Hochiminh city are  $37.25 \mu\text{g m}^{-3}$ ,  $47.75 \mu\text{g m}^{-3}$ ,  $20.03 \mu\text{g m}^{-3}$  in urban site, industrial site and rural site, respectively. The TSP concentration are significantly lower than those measured in Asian countries. High rainfall (from 165 to 295 mm during sampling period) which causes scavenging effect on ambient particles could be the reason of low particulate level in Hochiminh city during the sampling time. The levels of PCDD/Fs measured in rainy season were  $2515 \text{ fg m}^{-3}$  ( $108.7 \text{ fg-WHO-TEQ m}^{-3}$ ),  $3943 \text{ fg m}^{-3}$  ( $200.9 \text{ fg-WHO-TEQ m}^{-3}$ ) and  $514.2 \text{ fg m}^{-3}$  ( $29.96 \text{ fg-WHO-TEQ m}^{-3}$ ) at commercial site, industrial site and rural site, respectively, and all results were lower than the ambient air quality standard of  $600 \text{ fg TEQ m}^{-3}$  as proposed by Japan and South Korea but level in industrial site was higher than  $150 \text{ fg WHO-TEQ m}^{-3}$  as proposed by Germany. Figure 2 indicate that OCDD contributed around 40% of total PCDD/Fs at all three sites. This result matches the conclusions proposed by previous studies in other countries in North America, Asia and South America. In rainy season, the results of gas-particle partitioning (Figure 3) indicate that particle-phase PCDD/Fs accounts for 68.36 %, 73.65% and 50% in commercial, industrial and rural site, respectively. The low ratio of particle-phase PCDD/Fs compared to other studies could be attributed to the low TSP, resulting from strong scavenging of particles by heavy rainfall. For congeners profile of PCDD/Fs in each phase, the highest contribution comes from OCDD, accounting for 54.63% in particle phase and 1,2,3,4,6,7,8-HpCDD, accounting for 13.06% in gas phase. The contribution of PCDFs in gas phase increases from commercial site (12.13%) to industrial site (18.36%) and to rural site (24.90%). Lohmann and Jones [3] suggest that the closer to the combustion source, the higher contribution of PCDFs is in the sample. Because there are no major combustion sources in the vicinity of the rural sampling site, we can assume that high PCDFs contribution in this area can be attributed to the open burning activities to remove wastes in rural site of Hochiminh city.

### Acknowledgements:

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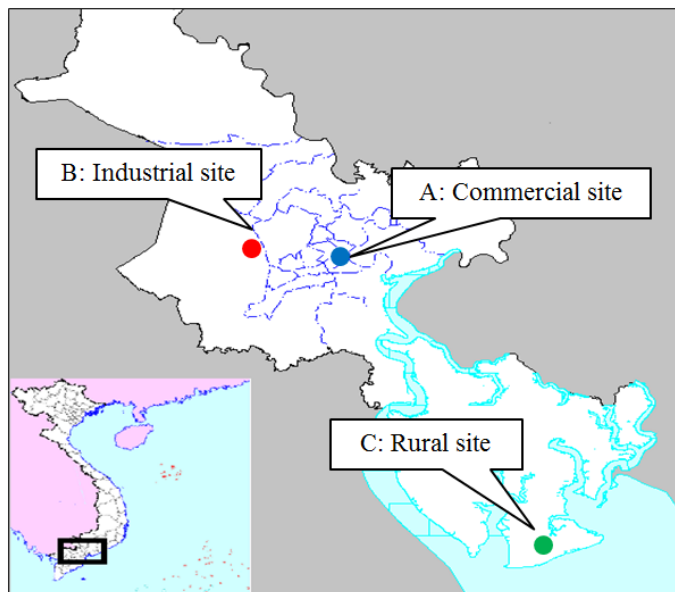


Figure 1. Locations of sampling sites in Hochiminh city.

Table 1 The PCDD/Fs and dl-PCBs concentrations in ambient air in rainy season in Hochiminh city

Sampling period	Sampling site	Meteorological data			TSP ( $\mu\text{g m}^{-3}$ )		PCDD/Fs
		Wind direction	Rainfall (mm)	Temp ( $^{\circ}\text{C}$ )	(fg $\text{m}^{-3}$ )		(fg-WHO-TEQ $\text{m}^{-3}$ )
27-29/07/16	A	South West	185	27.2	34.90	2905	114.0
	B				39.56	3230	84.51
29-31/07/16	A	South West	165	28.3	36.72	2247	85.11
	B				41.76	2763	137.2
31/7-2/8/16	A	West	203	29.6	39.56	2784	131.9
	B				55.50	5124	317.1
04-11/08/16	C	West South West	250	27.7	18.65	612.4	37.71
	C	West South West	250	27.7	18.66	497.2	27.15
	C	West South West	295	28.8	21.40	415.9	22.21

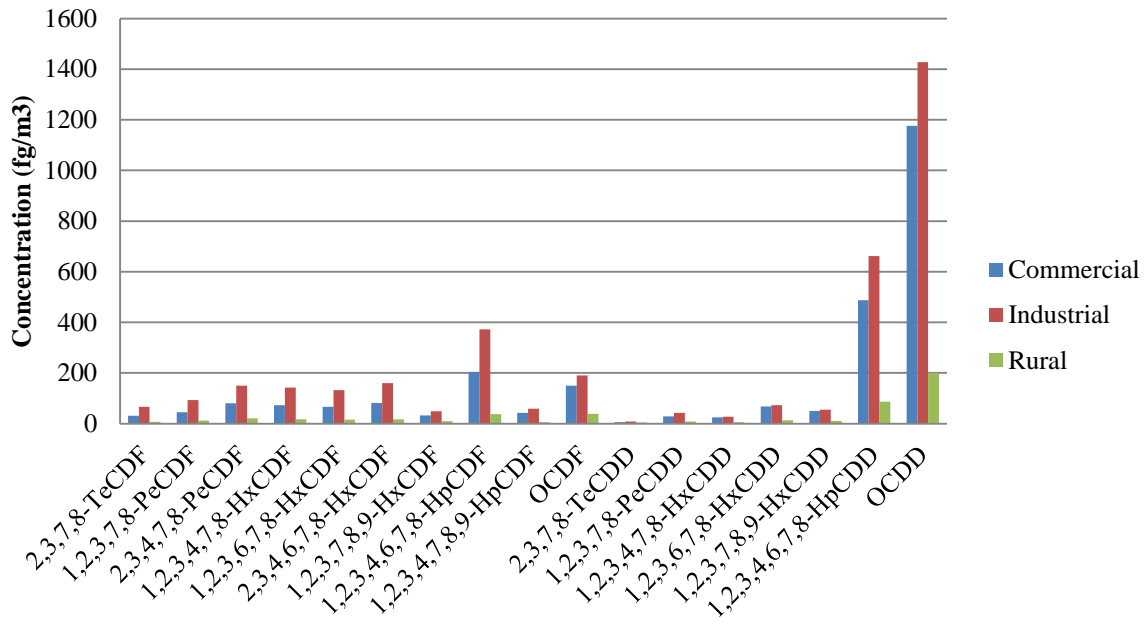


Figure 2. PCDD/Fs congeners profile in ambient air in rainy season

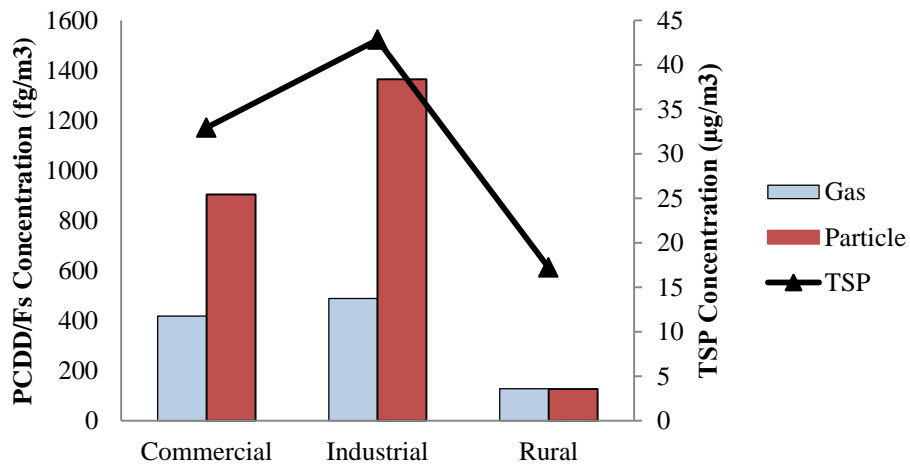


Figure 3. Gas-particle partitioning of PCDD/Fs in commercial, industrial and rural site

## Composition of PM<sub>2.5</sub> and Variation of Atmospheric PCDD/Fs in Northern Taiwan during Winter Monsoon and Local Pollution Events in 2015-2016

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### Introduction

Polychlorinated dibenzo-p-dioxin and dibenzofurans (PCDD/Fs) are persistent organic pollutants (POPs) that are formed and released unintentionally from anthropogenic sources [1-3]. A previous study [1] has indicated that higher than 60% of PCDD/Fs in the atmosphere are essentially bounded to particles. In regions with low or no precipitation or during times of low or no precipitation, airborne PCDD/Fs are transported more effectively. Among 210 PCDD/F congeners, 17 have chlorine substitution in the 2, 3, 7, and 8 positions, are toxic to the human endocrine system, can cause adverse health effects [3,4]. Moreover, due to their susceptibility to seasonal weather changes, they undergo atmospheric long-range transport (LRT) which can lead to cross-border pollution [1]. Taiwan is an island in the subtropics that is located off the southeast coast of Mainland China. In the winter and spring (October to March), the country and its surrounding areas are often influenced by the northeasterly winter monsoon winds that originate from Central Asia [5]. The winter monsoon not only brings cold air to Taiwan, but also transports air pollutants and dust over long distances to Taiwan as well as throughout the Northwestern Pacific area [6-8]. When monsoons and cold-air masses reach Taiwan, their speeds and directions change in a manner that weakens them because of the geographical uniqueness of the island. Poor atmospheric dispersion is resulting in rapid accumulation of locally emitted pollutants in the atmosphere and bring about local pollution (LP). This study investigated the effects of the long-range transport of air pollutants by northeastern monsoons and local pollution episodes on atmospheric PM<sub>2.5</sub>, PCDD/Fs concentrations and composition in northern Taiwan during the winters of 2015 and 2016.

### Materials and methods

To investigate the chemical composition of PM<sub>2.5</sub> in ambient, four sampling sites, named Urban, Suburban, Rural 1 and Rural 2 (Fig. 1), were selected in northern Taiwan during the northeastern monsoon period in 2015 and 2016. During winter monsoons, Rural 1 (Fugui Cape) in northern Taiwan are thus in the direct path of the long range transportation (LRT), whose air-current trajectory covered northern China, Japan, and Korea. The sampling procedure followed by European Union EN-14907 PM<sub>2.5</sub>, and used high volume sampler (Analytica HVS-PM<sub>2.5</sub>) equipped with Whatman quartz fiber filters (150 mm) and polyurethane foam (PUF) set the flow rate at 500L/min. The total volume of the air sample was more than 700 m<sup>3</sup> for a typical sampling duration in 24 hours. In this study, the seventeen 2,3,7,8-substituted PCDD/F congeners were analyzed by high-resolution gas chromatography (HRGC)/high-resolution mass spectrometry (HRMS) (JEOL JMS-700). The quartz fiber filter was used to determine a range of elements (Al, Fe, Na, Mg, K, Ca, Sr, Ba, Ti, Mn, Co, Ni, Cu, Zn, Mo, Cd, Sn, Sb, Tl, Pb, V, Cr, As, Y, Se, Zr, Ge, Rb, Cs, Ga, La, Ce, Nd) by inductively coupled plasma-mass spectrometry (ICP-MS) (NexIon 300X, Perkin-Elmer). About water-soluble ions (Na<sup>+</sup>, NH<sub>4</sub><sup>+</sup>, K<sup>+</sup>, Mg<sup>2+</sup>, Ca<sup>2+</sup>, Cl<sup>-</sup>, NO<sub>3</sub><sup>-</sup>, PO<sub>4</sub><sup>3-</sup>, SO<sub>4</sub><sup>2-</sup>) was analyzed by ion chromatography (IC). Organic carbon (OC) and elemental carbon (EC) were measured with IMPROVE\_A thermal/optical reflectance (TOR) protocol. Besides, positive matrix factorization (PMF) model,

potential source contribution function (PSCF) and source regional apportionment (SRA) were used to identify and quantify the emission sources and potential source area.

## Results and discussion

The results showed the hourly air quality and meteorology data from Taiwan Air Quality Monitoring Network in Table 1. Compared with normal periods, the concentration of PM<sub>2.5</sub>, NO<sub>x</sub>, CO, O<sub>3</sub> and wind speed were higher and ambient temperature was lower during LRT event. In Table 2, the highest PM<sub>2.5</sub> concentration were measured in Urban (27.7±19.6 µg/m<sup>3</sup>) and Suburban site (46.4±6.62 µg/m<sup>3</sup>) during LRT and LP, respectively. However, the results in Urban site were not only with the highest PCDD/F concentration measured during both LRT (55.2±36.3 fg I TEQ/m<sup>3</sup>) and LP (95.1±48.1 fg I TEQ/m<sup>3</sup>), but also with the highest PCDD/F content in PM<sub>2.5</sub> (2,178-3,779 pg I-TEQ g<sup>-1</sup>) during all period. According to the distribution of PCDD/F congeners in Figure 2, the significantly higher distribution of PCDFs were measured at all sampling site. However, the higher contribution of PCDDs were observed at Rural 1 and 2 sites during normal periods. At urban site, there is not any significantly different of the PCDD/F congener distribution between LRT, LP and normal period. Therefore, the impact of air quality in rural and suburban sites was quite serious than urban site during the LRT and LP events. All the measurements indicated that the atmospheric PCDD/Fs measured in this study were all lower than the air quality standards for PCDD/Fs in Japan (0.6 pg-TEQ/m<sup>3</sup>). The composition of water-soluble ions (WSI) measured in PM<sub>2.5</sub> collected in this study were shown in Figure 3. The main component were SO<sub>4</sub><sup>2-</sup>, NO<sub>3</sub><sup>-</sup>, NH<sub>4</sub><sup>+</sup> and Na<sup>+</sup> in WSI and crustal element such as Al, Fe, Na, Mg, Ca and K in trace metal, especially for urban site. The result of PMF analysis indicated that the atmospheric PCDD/Fs in northern Taiwan around 7.8%, 32.6%, 8.5%, 45.8% and 5.3% were provided from crematorium, coal-fired power plant and sinter plant, traffic emission, long range transport event and waste incinerator, respectively. In addition, the results of SRA analysis (Table 3) suggested around 80% of PCDD/Fs transported from Mongolia and China during LRT period. The results of this study serve as a reference for further research exploring the effect of LRT and LP on air quality impact and human health.

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Table 1. Statistics of weather and air quality condition (hourly data) measured in northern Taiwan for LRT, LP and normal periods.

	n	PM <sub>2.5</sub> (µg/m <sup>3</sup> )	WS (m/s)	RH (%)	Temperature (°C)	SO <sub>2</sub> (ppb)	NO <sub>x</sub> (ppb)	CO (ppm)	O <sub>3</sub> (ppb)
<b>LRT</b>	697	19.8±13.0	5.43±2.90	79.1±11.0	17.2±4.57	2.01±2.12	5.35±3.22	0.31±0.11	45.5±9.51
<b>LP</b>	361	15.8±13.1	2.21±1.38	81.7±10.0	18.5±3.25	2.50±1.57	9.53±6.59	0.30±0.10	35.9±15.1
<b>Normal</b>	169	6.25±4.46	3.81±2.50	84.2±7.35	21.9±4.07	2.51±1.81	5.78±3.88	0.16±0.06	34.4±14.1

Table 2. PM<sub>2.5</sub> and atmospheric PCDD/F concentrations measured at different sampling site.

	PM <sub>2.5</sub> (µg/m <sup>3</sup> )			PCDD/Fs (fg I-TEQ/m <sup>3</sup> )		
	LRT	LP	Normal	LRT	LP	Normal
<b>Rural 1</b>	22.4±10.1	23.8±12.8	9.11±4.86	29.1±19.1	66.6±47.9	7.65±5.32
<b>Rural 2</b>	15.4±9.12	27.9±11.7	5.92±1.55	10.6±6.08	8.9±1.96	3.41±1.66
<b>Suburban</b>	18.4±13.3	<b>46.4±6.62</b>	8.01±4.87	12.5±8.27	27.2	22.7±21.3
<b>Urban</b>	<b>27.7±19.6</b>	29.1±13.2	7.26	<b>55.2±36.3</b>	<b>95.1±48.1</b>	20.8

Table 3. Regional contributions for each emission source via SRA analysis during LRT event.

Location	Factor 1 Crematorium 7.8%	Factor 2 Coal-fired power plant and sinter plant 32.6%	Factor 3 Traffic emission 8.5%	Factor 4 Industrial emission 45.8%	Factor 5 Waste incinerator 5.3%	Total
<b>Mongolia &amp; Northern China</b>	0.54%	2.27%	0.59%	3.18%	0.4%	<b>6.6%</b>
<b>Western China</b>	0.13%	0.56%	0.15%	0.79%	0.1%	1.6%
<b>Central China</b>	6.01%	25.3%	6.60%	35.4%	4.1%	<b>73.3%</b>
<b>Northeast Asia</b>	0.18%	0.74%	0.19%	1.04%	0.1%	2.2%
<b>Southeast Asia</b>	0.33%	1.39%	0.36%	1.95%	0.2%	<b>4.0%</b>
<b>Taiwan</b>	0.45%	1.90%	0.50%	2.66%	0.3%	<b>5.5%</b>
<b>Pacific Ocean</b>	0.12%	0.51%	0.13%	0.72%	0.1%	1.5%

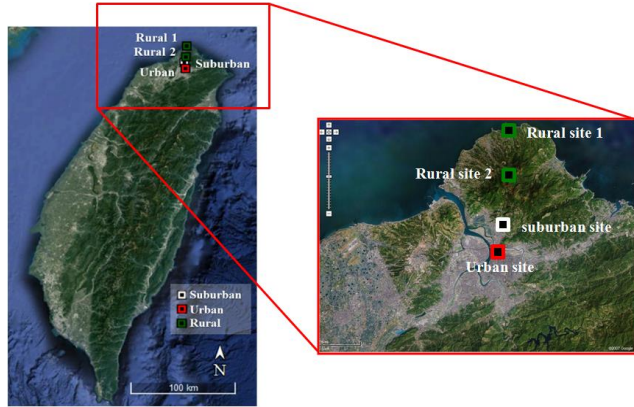


Figure 1. Locations of atmospheric sampling sites selected in Taiwan.

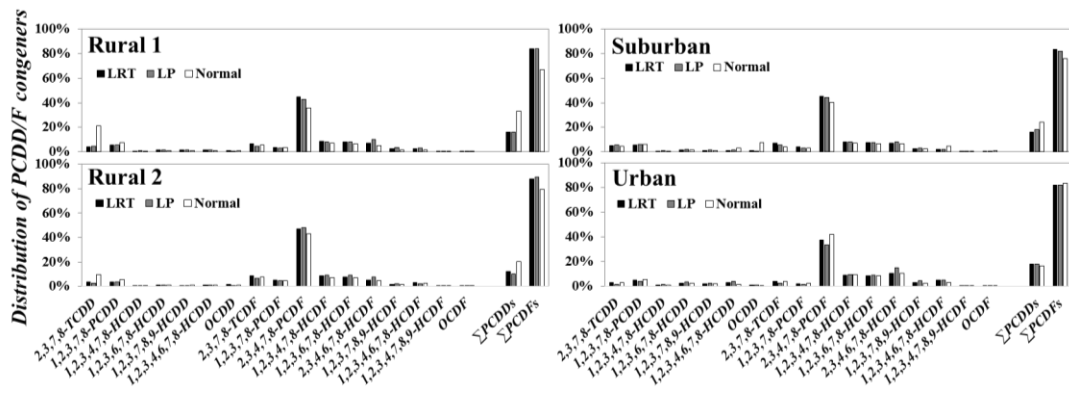


Figure 2. Distribution of PCDD/F congener measured in northern Taiwan during LRT, LP and Normal period.

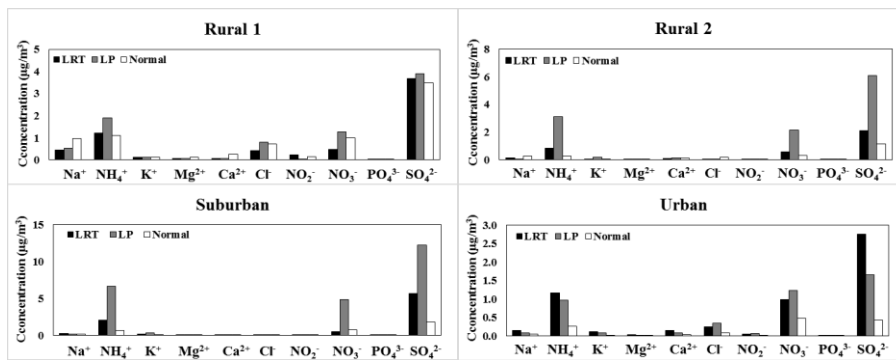


Figure 3. Composition of water-soluble ions in  $PM_{2.5}$  measured in northern Taiwan during LRT, LP and Normal period.