

出國報告（出國類別：開會）

參加2010年第5屆環境科技國際研討會

【5th International Conference on Environmental Science and Technology 2010】

服務機關：中油公司探探研究所

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派赴國家：美國

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報告日期：99年9月23日

參加 2010 年第 5 屆環境科技國際研討會

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摘 要

本奉准出國案，期間自 99 年 7 月 11 日起至 7 月 18 日止，主要目的是參加由美國科學學院（American Academy of Sciences, AAS）所舉行之 2010 年第 5 屆環境科技國際研討會（5th International Conference on Environmental Science and Technology 2010），藉以學習環境工程之污染監測、分析、處理與整治技術評估，以及生物處理、減廢、碳排放與生質能等相關環境科技發展議題；同時於會中發表本公司研究成果論文－「The study of decomposition of BTEX in groundwater by persulfate - Analysis of chloro-alkyl derivatives」，宣達中油公司於環境保護與工程技術領域之研發成果。

有鑑於近年來因油氣洩漏所造成的環境浩劫愈見嚴重，尤其新近英國石油公司於墨西哥灣的深海生產油井爆炸崩塌及中國遼寧省大連新港石油管線爆炸，大量原油的洩漏及污染，均讓當地環境及生態都面臨極大的生存危機。台灣地狹人稠，一旦發生環境污染事件，衝擊及影響勢必更為深遠，因此，身為台灣重要能源供應者的中油公司本應更正面、積極、遠瞻的處理環境議題，而探探研究所具有油氣探勘專長，以及對地下地質、油氣移棲與油品成份的瞭解，已建立多項環境污染偵測、分析、鑑別與整治技術，除可協助迅速辨識、截斷污染源外，也能提供污染場址之整治技術評估。未來並將朝開發乾淨新能源、建立生物復育技術、碳捕獲與封存先導性試驗等環境友善科技方向發展，共同為環境永續盡最大的心力。

參加 2010 年第 5 屆環境科技國際研討會

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壹、目的

本出國案主要目的是赴美國休士頓參加由美國科學學院（American Academy of Sciences, AAS）所舉行之 2010 年第 5 屆環境科技國際研討會（5th International Conference on Environmental Science and Technology 2010）。是項研討會主要提供一個跨學科的論壇與平台，使環境科學研究與工程技術應用能相互結合，以解決愈來愈複雜之環境污染、環境倫理、環境法律、環境經濟與環境管理等問題，而對於可再生能源之發展與全球氣候變遷之影響，也透過研討會的舉辦進行技術交流，同時檢視各個研究計畫與開發技術之可行性及有效性，引導研究、現場工程、制度建立及決策管理能更貼近環境生態的需求，也對我們賴以生存的地球村有所幫助。

藉由參與此次國際會議，除蒐集最新環境工程科技及設備發展趨勢資訊，提昇本所研究水準之外，並與全球相關領域之專家、學者進行技術交流，獲取實務經驗，以強化面臨各項環境問題之技術應用及解決能力，進一步支援及服務公司各事業部對於環境保護與工程之需求，降低公司營運風險。而本所最新研究成果論文「The study of decomposition of BTEX in groundwater by persulfate - Analysis of chloro-alkyl derivatives」的發表，也有效增加中油公司在國際環境保護與工程技術領域之能見度。

貳、過程

2010 年第 5 屆環境科技國際研討會於休士頓北郊的希爾頓飯店舉行，會議主席由美國俄亥俄州辛辛那提大學的 George A. Sorial 教授擔任，來自世界各地環境科技領域近千名的科學家與研究員，參與為期 5 天（7 月 12~16 日，議程詳如表 1 及附錄 1），17 項主要及 64 分項環保議題的國際研討（詳如附錄 2）。

開幕式中 George A. Sorial 教授首先歡迎來自世界各地的環境科學領域專家，就水質、空氣品質、廢水處理、土壤整治、生物降解、分析技術、遙測、模式模擬、生態、資源再利用、永續發展等廣泛之環境議題進行經驗及技術交流，並藉此尋求專業夥伴合作的可能性，以及建立長期且固定的合作關係。

表 1 5th ICEST 2010 議程 (Presentation & Conference Schedule)

Presentation Schedule					
Date/Time	Raphael Ballroom C	Raphael Ballroom D Salon 3 (July 16)	Salon 1	Conference Center	Salon 2
Monday, 7/12					
1:00p.m. - 6:00p.m.	Registration				
Tuesday, 7/13					
Morning					
9:10a.m. - 11:50a.m.	Plenary Meeting				
Afternoon	01-9 Water Quality Assessment/Management	03-3 In-Situ Remediation	02-1 Aerosol /02-2 Air Quality Assessment		
1:30p.m. - 6:05p.m.		03-4 Solid Waste Management / Polymer Waste Recycling and Management	02-4 Waste Gas Control Techniques		
Evening	7:30p.m. - 9:30p.m. Poster I (Sessions 01-01-01-09, 02-1-02-3, 03-1-03-3, 11, 12, 13, 14, 15, 16). Location: Atrium Lobby				
Wednesday, 7/14					
Morning					
8:00a.m. - 12:10p.m.	01-06 Wastewater Discharge Management	03-1 Contaminants in the Subsurface/ 03-6 Landfill/ 03-7 Permeable Reactive Barriers/ 03-8 Waste Recycling	02-3 Transport of Pollutants		
	01-08 Drinking Water	03-2 Natural Attenuation of Contaminants	02-6 Hazardous Gas Biofiltration		
		03-5 On-site and Off-site Remediation	02-7 Air Pollution Prevention and Management		
Afternoon	01-10 N-P Wastewater Bioremediation	04-1 Ecosystem Assessment	02-5 Air Pollutant Monitoring		
1:30p.m. - 6:05p.m.	01-11 Sludge Treatment	04-2 Restoration of Ecosystems			
	01-12 Municipal Wastewater Bioremediation	06-1 Wetland Conservation	08-1 Global Warming and its Impacts		
	01-13 Industrial Wastewater Bioremediation	06-2 Wetlands for Wastewater Treatment	08-2 Carbon Discharge Reduction		
Evening	7:30p.m. - 9:30p.m. Poster II (Sessions 01-09 - 01-16, 02-4-02-6, 03-4-03-6, 04, 05, 06, 07, 08, 09, 10). Location: Atrium Lobby				
Thursday, 7/15					
Morning					
8:00a.m. - 12:10p.m.	01-14 Adsorption/Desorption for Wastewater	09-1 Metal Distribution	11-1 GIS for Environmental Assessment	11-1 Environmental Simulation	
		09-2 Metal Removal and Remediation	12-2 Data Management and Statistics	11-2 Water Quality Modeling	
			12-5 Environmental Remote Sensing Applications	01-1 Rivers, Lakes and Estuary Systems	
Afternoon	01-16 Reactions and Degradation of Wastewater Contaminants	09-3 Speciation, Bioavailability and Accumulation	14-1 Society and the Environment	01-2 Watershed Management	
1:30p.m. - 6:05p.m.		09-4 Phytoremediation	14-2 Environmental Ethics, Law and Education	01-3 Water Resources and Assessment	
		05-1 Human Exposure / 05-2 Bio-response and Bioavailability / 05-3 Microbiology and Microbial Degradation	16-1 Wind Energy / 16-2 Solar Energy	01-4 Groundwater	
	01-17 Nanotechnology Applications		16-3 Bio-fuels and other Technologies	01-5 Non-point Sources	
Evening	7:30p.m. - 8:30p.m. Paper/Poster Award Announcement				
Friday, 7/16					
Morning					
8:00a.m. - 12:10p.m.		17-1 (Film) Peak Oil & the Coming Global Crisis	10-01 Degradation of Persistent Organic Pollutants		15-1 Environmental Quality and Planning/ 15-2 Energy-related Environmental Problems / 15-3 Environmental Policy and Management
			01-15 Physico-chemical Wastewater Treatment		13-1 Environmental Analytical Technologies / 13-2 New Method Applications / 13-3 Environmental Monitoring
Conference Schedule					
	12-Jul	13-Jul	14-Jul	15-Jul	16-Jul
Morning		Plenary Meeting	Platform Sessions	Platform Sessions	Platform Sessions
Noon		Lunch	Lunch		
Afternoon		Platform Sessions	Platform Sessions	Platform Sessions	
Evening		Poster Session I	Poster Session II	Paper/Poster Award Announcement	
8:00a.m. - 6:00p.m.	Registration (from 1:00p.m.)	Registration / Exhibition	Registration / Exhibition	Registration / Exhibition	

叁、心得

以大會登載的論文摘要資料顯示，此次研討會共計發表 497 篇環工專業論文（包括口頭及壁報發表，詳如附錄 3）及 6 家廠商實體展示，有關參與專題演講及分項討論之所得及重點分述如下：

一、專題演講（Plenary Meeting）：

在開幕致詞之後，邀請國際知名的傑出科學家進行專題演講。首位登場的 Dr. Ricardo H. M. Godoi (Professor in Environmental Engineering at Federal University of Paraná, Brazil) 就「Characterization of Atmospheric Particles from South America to Antarctic」研究結果說明取樣自巴西里約熱內盧市區的煙道氣與南極洲大氣的組成成份經以 Electron-probe (電子探針)、low-Z EPMA (低 Z 元素測定) 和 EDXRF (分散能量式 X 螢光射線) 等方式之精密分析後，顯示煙道氣的污染物已透過大氣的流佈，長途傳輸至人煙罕至的南極洲，證實過度砍伐自然林地和工業化的惡果，正破壞著極地環境，也警示區域性的人為污染及破壞，全世界都無法置身事外，尤其是現在大家都要面臨的全球氣候快速變遷與暖化議題。

第 2 位 Dr. Carl G. Enfield (Enfield Environmental Research, USA) 發表「Groundwater-Surface Water Flux Measurements」研究成果，指出在接近地表的位置，微生物的活動及作用力最強，因此準確地測量透過這個界面帶的水流體和化學物質流就顯得十分關鍵，特別是污染場址中水文地質、污染整治效果或是地下水補注量的評估上，都必須借重地表至地下界面帶水通量的量測值；但通常地表

至地下界面帶的流體流速都非常的低，量測很困難，熱脈衝流量計(Heat pulse flow meters)的應用則可克服上述缺點，而且透過實驗室及場址實測數據顯示，可以有效量測環境中的低流速流體 (from < 0.1 mm/day to hundreds of mm/day)。此項研究技術的建立，可改進地層透水性定量化之測定範圍與精確度，提供大地工程、地下水污染及地下水資源保育等環境保護工作之參考依據，但仍必須有效地掌握熱脈衝流量計之測定條件，如低速地下水流及自由對流等環境敏感因素。

另外 Dr. Yutaka Sakakibara (Department Chair of Civil & Environmental Engineering, Waseda University, Japan) 發表「Continuous Treatments of Endocrine Disrupting Chemicals (EDCs) by Artificial and Natural Oxidation Processes」研究成果，指出藥物和化學製品的濫用和任意棄置，使環境賀爾蒙 (EDCs) 充斥於各個水生環境中，尤其是壬基苯酚 (NP)、雙酚 A (BPA) 及合成雌激素 (E2) 等更被證實為影響生物生殖與生理的內分泌干擾物質，因而造成人體健康及環境生態的嚴重危害，因此在聯合國環境計畫 (UNEP) 中，已將此類物質列入『持久性毒物』清單。依據 Dr. Yutaka Sakakibara 研究結果，建議可採用兩種連續之處理方式：屬點源污染的 EDCs 處理，係採用人為的三維電極氧化法，EDCs 可直接於電極表面氧化而去除，相較於傳統氧化法穩定且有效；至於非點源的 EDCs 處理，則採用自然植生整治法 (Phytoremediation)，它是一種利用植栽水生植物的細胞酵素和氧化劑，降解、穩固土壤地下水、河川底泥中污染物的生物技術，也是自然界與生俱來的清除污染技術。EDCs 處理方式的選用，仍需評估適用之環境污染物及其效用。

二、分項討論 (Platform Sessions)：

二氧化碳 (CO₂) 排放減量一直是全世界關注的議題，依據經濟部評估資料顯示，台灣地區 1990 年至 2000 年 CO₂ 的排放量幾乎倍增，且年增率為舉世之冠。此項警訊已促使立法院於 2007 年 5 月 7 日初審通過「溫室氣體減量法」草案部分條文，明訂台灣溫室氣體排放減量應以 2005 年為基準年，並在 2025 年至 2030 年間達成目標，行政院業已配合制定溫室氣體總量排放目標，初步傾向國內溫室氣體在 2025 年總量排放目標訂為 2.54 億公噸，相當於 2007 年排放水準。倘無法達成此減量目標，其後果可能必須支付金額龐大之碳排放費用，同時將遭受國際社會之貿易制裁，對於台灣以國際貿易為主之經濟體系，其發展將受到極大之限制與負面衝擊。本世紀仍以傳統化石能源為動力主要來源，但其也是 CO₂ 排放量最大宗的貢獻者，現階段除了節約能源和增加使用再生能源的手段之外，CCS (二氧化碳捕獲及封存) 技術是國際間公認技術可行性最高、最接近實用化的 CO₂ 減量技術，也是目前美國、歐盟、澳洲、日本等國的研發重點；中油公司身為能源供應者，自不能置身事外，因此探探研究所致力 CCS 技術研發，並配合探探專長，著重於地質封存先導性試驗評估。雖然 CO₂ 捕獲技術並非發展重點，但我們仍持續關注其發展，尤其在效率和成本改善空間上。此次研討會在 Carbon Discharge Reduction 分項討論中，由 Lu Wang (East China University of Science and Technology, Shanghai, China) 發表「13X-APG Zeolite and VTSA Process for Post-Combustion CO₂ Capture」就針對 CO₂ 捕獲的技術發展進行探討，其重點摘錄如下：該研究係採用 13X-APG 沸石 (鈉 X 型晶體結構，分子式 Na₈₆[(AlO₂)₈₆(SiO₂)₁₀₆]

xH₂O，孔徑 0.1 nm，尺寸 2.5~3.2 mm 之球狀顆粒）吸附捕獲煙道（燃燒後捕獲方式）中之低純度 CO₂（約 15%），搭配所研發『五步驟循環真空變壓變溫耦合吸附技術』（Vacuum and Temperature Swing Adsorption, VTSA，參閱圖 1 及圖 2），以實驗測定及評估循環吸附/脫附過程中吸附劑再生率、煙道氣中 CO₂ 回收率、氣量及產品氣中 CO₂ 純度，並與傳統的真空變壓吸附(VSA)技術和變溫吸附(TSA)技術比較；由於 VTSA 在真空脫附的同時可以加熱吸附劑，實驗結果顯示，可減少真空泵的電能損耗 10%及降低捕獲成本 20%，並在 3×10³ Pa 的真空下即可操作，且在 90~150℃下吸附劑之再生率達 97%以上，CO₂ 回收率達 98%以上，吸附劑捕獲的 CO₂ 量可提高至 1.8 mol/kg，是 VSA 技術捕獲氣量的 2 倍，CO₂ 純度提高至 90%以上，再經由壓縮方式至 10 MPa，除去不凝氣後便可直接封存至適合之地下場址。以上研究成果，雖然是實驗室規模之探討，但透過整合 VSA 及 TSA 技術的優點，包括餘熱再利用及循環步驟之應用，使耗能及捕獲成本都能有效下降，CO₂ 捕獲的運轉將更為經濟，極具實用參考價值。

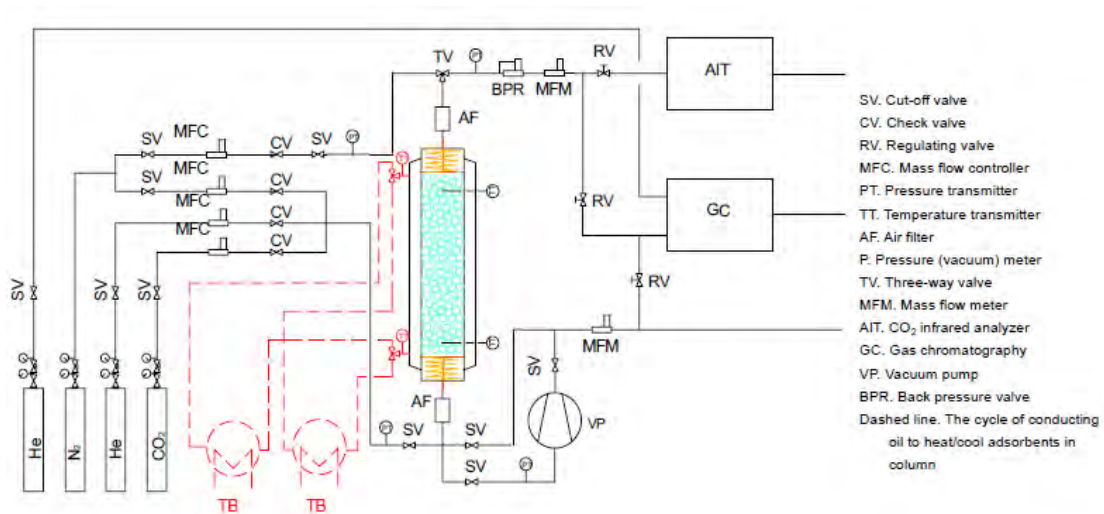


圖 1 真空變壓變溫耦合吸附技術實驗流程圖（摘自 梁輝 2010/04）

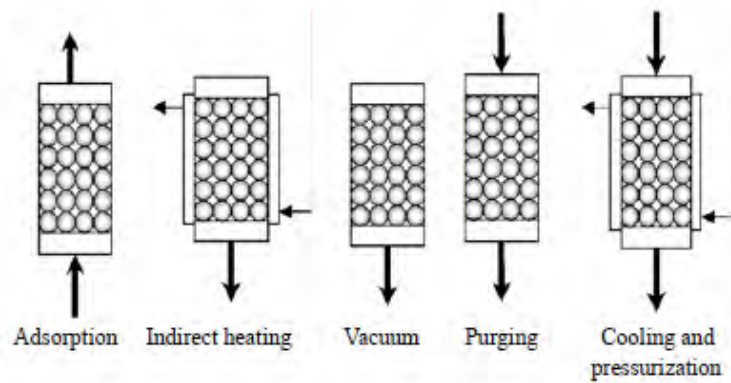


圖 2 真空變壓變溫耦合技術之循環吸附/脫附步驟 (摘自 梁輝 2010/04)

在 Transport of Air Pollutants 分項主題中，Dr. Chung-Ming Liu (National Taiwan University Research Center for Global Change, Taiwan) 與 Dingtai Co., Ltd. 合作發表「A Study on The Effect of Hydraulic- Conductivity JW Pavement on Diluting Air Pollutants from Vehicles」研究成果，內容探討以 JW 空調導水鋪面 (Dingtai Co., Ltd. 開發，參閱圖 3) 為實驗對象，探討對大氣污染物 (如：一氧化碳 CO、二氧化碳 CO₂、硫氧化物 SO₂、氮氧化物 NO) 的降解效果。JW 空調導水鋪面是屬於結構性透水性的道路鋪面，結合不透水混凝土後，抗壓強度可用於供車輛行駛之道路鋪設，孔洞性的設計具有快速排水、雨水回收、土壤涵養、氣候調節及減緩都市熱島效應等優點，但對於污染防治的效能評估則是此項研究之主要目的。實驗結果顯示，在有條件的控制下，鋪設 JW 空調導水鋪面的道路，可直接將 CO、CO₂、SO₂ 及 NO 等空氣污染物削減 40%~78%，持續一段時間後削減可達 46%~90%。雖然現階段仍無法評估大規模實際鋪設後對空氣污染的真正改善效果，但對空氣污染物的捕獲應有一定程度的助益；據 Dingtai Co., Ltd. 研發人員表示，JW 空調導水鋪面可以有類似地表礦化的 CO₂ 封存效果，透過雨水淋洗，再利用地表下土壤環境的微生物作用機制，可有效降解移動式污染源 (機動車輛) 所產生的 CO₂。

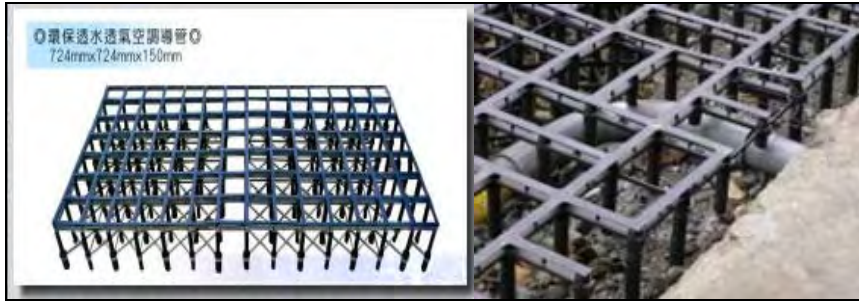


圖 3 JW 空調導水鋪面（摘自 Dingtai Co., Ltd.）

因應傳統化石能源的短缺及減緩溫室效應的環保需求，替代能源的開發及使用已受到國際間的重視，而生質柴油取得容易、低度污染及有效降低對石化燃料的依賴，使其成為普及化的綠色環保能源。中油公司為期能源永續供應，不斷積極投入再生能源的研究，自 97 年 7 月起於國內市售柴油中全面添加 1% 生質柴油（B1），同年 10 月起也積極合作、開發以麻瘋樹作為生質柴油之料源，目的就是要避免以糧食作物提煉而造成糧食短缺及價格上漲問題。但畢竟生質柴油仍供應為燃料使用，其對於大氣及人體的危害，亦應進一步評估，在研討會 Bio-response and Bioavailability 分項主題中，Dr. Ta-Chang Lin（National Cheng Kung University, Taiwan）發表「Emission Characteristics and Cytotoxicity Analysis of Biodiesel Particulate」研究論文，分別自排放微粒重量差異、微粒粒徑分布和多環芳香烴（PAHs）分析評估柴油引擎排氣之化學及生物毒性特徵，利用正常人類肺部支氣管上皮細胞株（BEAS-2B）進行細胞存活率和基因毒性分析之生物毒性測試，以深入了解引擎排放微粒粒徑大小和其生物毒性關係，並評估使用生質柴油對環境和人體的影響。其研究分析結果顯示，引擎排放微粒粒徑大小與基因毒性並無明顯關係，而與燃料油品的選用有關，在使用 B10（石化柴油中添加 10% 生質柴油）所排放的微粒質量濃度較高，但此情況卻可能會導致引擎的磨損，惟此也是

削減生質柴油應用優勢的隱憂。另外在測試之柴油油品中，B10 的 PAHs 毒性當量較低，其微粒造成的細胞毒性和基因毒性亦相對較低，顯示添加適當比例的生質柴油（如 B10 的棕櫚生質柴油），確實能降低引擎排放微粒的生物毒性，這也是使用生質柴油之推廣重點。

本所也藉此次國際研討會 Physico-chemical Wastewater Treatment 分項主題中，發表新近之「The study of decomposition of BTEX in groundwater by persulfate - Analysis of chloro-alkyl derivatives」研究成果論文，主要係探討新近發展應用於土壤及地下水污染整治現地化學氧化技術（In Situ Chemical Oxidation, ISCO）的氧化劑—過硫酸鹽，其實場應用時可能產生鹵烷衍生物的風險。由於過硫酸鹽氧化電位高，可適用污染物範圍廣，且其化學穩定性高、半衰期長，因此可充分延長施作的有效距離；但因過硫酸鹽氧化劑的實場應用案例較少，在整治效率、工程施作參數與可能衍生的副作用等應用可行性方面，確有進一步研究評估之必要。本研究以三種催化劑配方催化過硫酸鹽分解 BTEX 試驗結果發現，以過硫酸鹽氧化 BTEX 成分時，若介質中含有氯離子，則有產生氯烷衍生物的風險，其中以檸檬酸鈉加硫酸亞鐵為催化劑，衍生物生成速度最快，且濃度高，主要為產生 Dichloromethane，其次為 Chloroform 及 1,2-Dichloroethane、1,1,2-Trichloroethane 等，而以硫酸亞鐵為催化劑，其氯烷衍生物形成時間稍慢，主要為產生 Chloroform。以 EDTA 加硫酸亞鐵為催化劑的硫酸鹽氧化 BTEX 過程則相對產生較低的氯烷衍生物，但仍有 Dichloromethane、Chloroform 生成。針對二種螯合劑參與反應的探討發現，檸檬酸鈉加硫酸亞鐵為催化劑的空白試驗顯示，在沒有其他有機化合物存在下，檸檬酸會參與過硫酸鹽氧化反應而生成 Dichloromethane、Chloroform、

1,2-Dichloroethane 及 1,1,2-Trichloroethane 等多種鹵烷化物。在探討過硫酸鹽分解 BTEX 過程中發現，介質中氯化鈉濃度與鹵烷衍生物有正向指數關係，即氯化鈉濃度越高，所形成鹵烷衍生物的濃度越高。根據本研究實驗結果證實，以過硫酸鹽氧化劑配方分解 BTEX 成分不飽和芳香烴，若介質中含有鹵鹽離子，其具有產生二次鹵烷衍生物的風險，其主要為 Dichloromethane 與 Chloroform。基於本研究試驗結果，建議在評估應用過硫酸鹽做為芳香烴 ISCO 處理的氧化劑時，應先針對場址中所存在鹵素鹽類濃度做初步分析篩選，若環境介質中含有鹵素鹽類，則其反應會有產生鹵烷衍生物的風險，由於許多鹵烷有機化合物的生物毒性更甚於石油芳香烴，因此若整治行動具有產生鹵烷衍生物的後遺症，則不建議使用過硫酸鹽配方進行芳香烴的氧化處理。而過硫酸鹽所搭配催化劑配方中，單獨硫酸亞鐵及檸檬酸結合亞鐵都會產生明顯的鹵烷衍生物，而 EDTA 加硫酸亞鐵是相對較安全的催化劑配方（參閱圖 4、圖 5 及圖 6）。

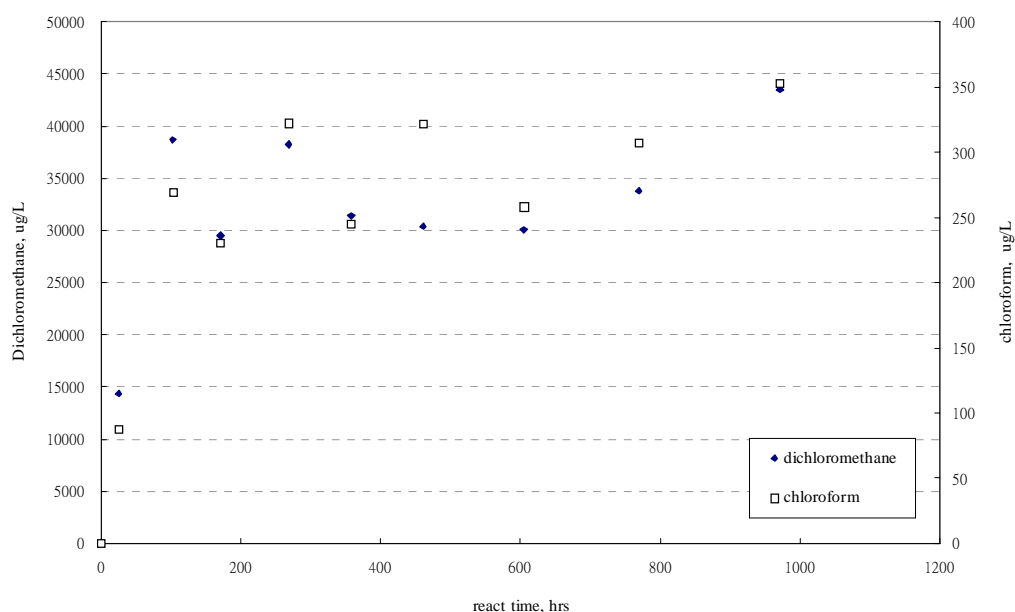


圖 4 在 NaCl 水介質中，添加檸檬酸結合硫酸亞鐵催化劑試驗之 Dichloromethane、chloroform 生成濃度變化情形

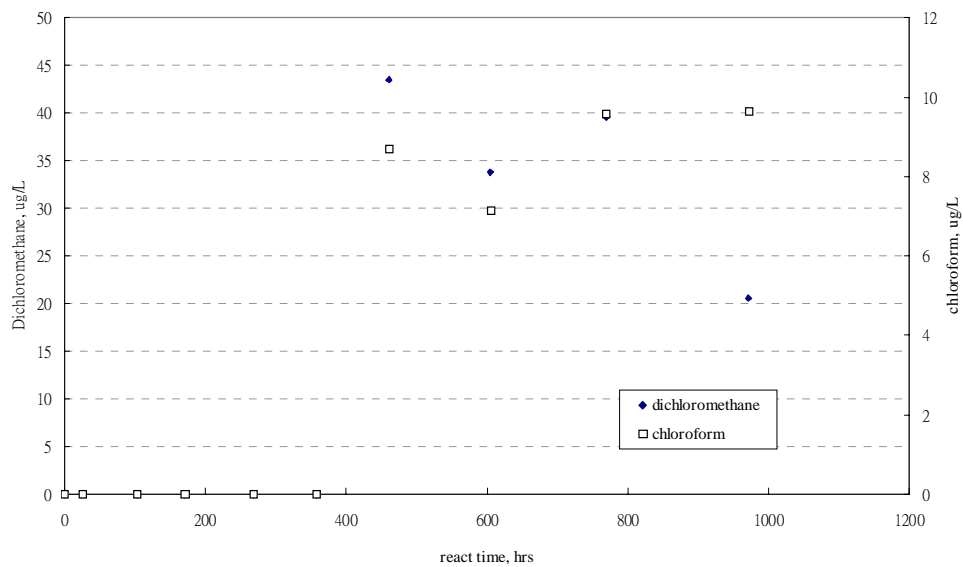


圖 5 在 NaCl 水介質中，添加 EDTA 結合硫酸亞鐵催化劑試驗之 Dichloromethane、chloroform 生成濃度變化情形

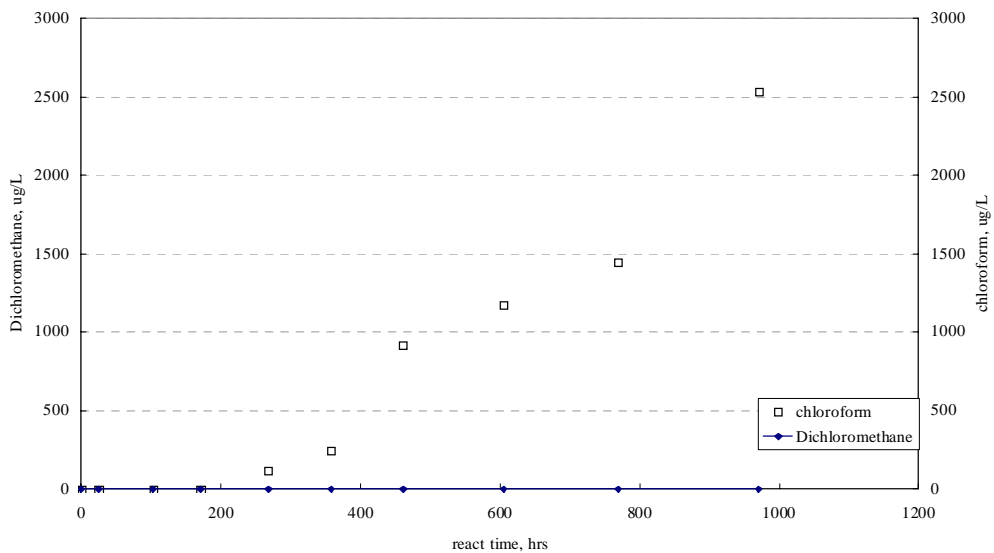


圖 6 在 NaCl 水介質中，僅添加硫酸亞鐵催化劑試驗之 Dichloromethane、chloroform 生成濃度變化情形

肆、建議

由參與此次國際研討會的過程中，學習到許多環境工程相關的新知與新技術，期間也透過與其他國外專家技術交流機會，獲取許多寶貴的經驗，對於未來環工技術研發與實務應用必然有所助益；然而其中也有一些體悟與感想，茲整理以下數點建議作為省思及卓參：

- 一、環工技術的迅速發展，正意味著我們破壞環境的速度也不斷加快，從大氣、水質、土壤等生活環境，到日常所需接觸到的食、衣、住、行、育、樂等生活領域，無一不存在污染問題。人類一方面為解決人口擴增及居住地問題，大量破壞自然屬地，造成許多物種及景觀瀕臨面絕；另一方面透過科技的發展，提供許多生活必需品，但產生的大量廢棄物卻忽略了地球原有的承載壓力。於是全球暖化、氣候變遷、污染流佈等，在在都影響及威脅回人類自身，此次研討會也有部份環境管理項之發表議題，期能形成一種制約或決策的力量，遏止環境的再度惡化。
- 二、環境保護是全球性的議題，各國或各區域實際面臨的環境問題，透過研發科技和經驗交流，對於解決方案必有一定程度之助益；但仍必須注意和考量環工技術在地應用的限制性，避免因過於主觀的想法，反而破壞區域的生態平衡，或衍生出另一污染危害。尤其是現今生物科技的蓬勃發展，人類有能力培育出分解污染的微生物甚或細菌，當我們自以為是的解決污染難題的同時，特別是刻意將菌種異地而殖時，是否也可能造成了另一個環境的浩劫？

在環工生物科技的應用上，可以試著學習尊重大自然與生俱來的淨化和涵容能力，仔細評估當地背景、環境、生態所適用之處理技術，或許才是環工人應有的正確思維。

三、2010年4月20日英國石油公司於墨西哥灣深水礦區之 Macondo MC 252 油井平台爆炸，造成大量原油外洩，據國際能源總署（International Energy Agency）估計，流進海裡的原油大約介於 230 萬至 450 萬桶之間，由於原油對海洋生物具有毒性，未來清理時使用的化學分解劑對生物也具有毒性，已重創墨西哥灣區的生態系統。至 7 月 15 日（ICEST 會議第 4 日）當天傳來階段性的好消息，英國石油公司新的控油裝置已成功罩住水下漏油點，後續仍必須採取靜態封堵及減壓井與漏油油井對接方式永久封堵該油井。事件的發生帶給我們許多震撼，許多專家即指出，美國政府對此發出鑽井禁令，看似為環境保護發聲，但下一階段原油產量高峰（Peak oil）議題來到時，為顧及經濟發展所需，屆時仍會妥協於現實。原本大會於議程最末安排「Blind Spot: Peak Oil and Coming Global Crisis」影片觀賞（後因故取消），探討的就是這個面向的問題。中油公司擔負國內能源供應的重責大任，但我們在貢獻社會能量的同時，也必須許下對環境生態保護及永續發展的承諾；因此他山之石為我們的借鏡，海域的探勘開發工作即將到來，陸上的探探、煉製、行銷仍日常運作，對於工安、環保的注重更應戒慎用心，環境友善技術的研發也要更為精進與重視。

四、另由此次國際研討會中，發現中國大陸及印度等兩個國家，論文發表篇數合計約 210 篇，與會出席也幾近全體出席人數的二分之一(論文發表篇數共 497 篇，註冊參加人數共 747 人)，不管是發表的量與內容的質均有顯著的成長，反觀台灣在此次會議僅 10 餘人次與會及 10 餘篇論文發表，感覺落差頗大。在論文獲獎數，此次研討僅台大碩畢生 Wang, Yung-Chieh 以「A Generalized Likelihood Sensitivity Analysis for Simulating the Water Quality of Constructed Wetlands」論文獲得 Student Paper Award (該生現為美國喬治亞理工學院博士生)，中國 2 篇獲獎，印度 1 篇獲獎。筆者和與會的大學教授們談及此一現象感到有些憂心，尤其在國際學術的能見度若無法提昇，未來國內研究成果的展現也將逐漸失去舞台，與國際學術或研究機構的競爭也可能失去優勢。筆者與公司本次論文發表的共同作者們，也是秉持難得參與國際研討的機會，多學習、充電及交流，以便使自己更有動力的在研究領域中繼續創新。願共勉之！



圖 7 5th ICEST 2010 會議舉辦地點



圖 8 5th ICEST 2010 會場報到處



圖 9 筆者於 5th ICEST 2010 會場

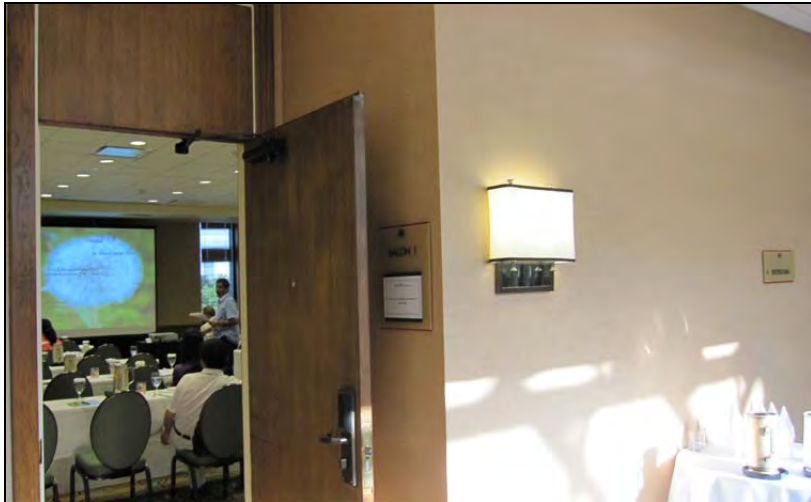


圖 10 5th ICEST 2010 分項討論會場

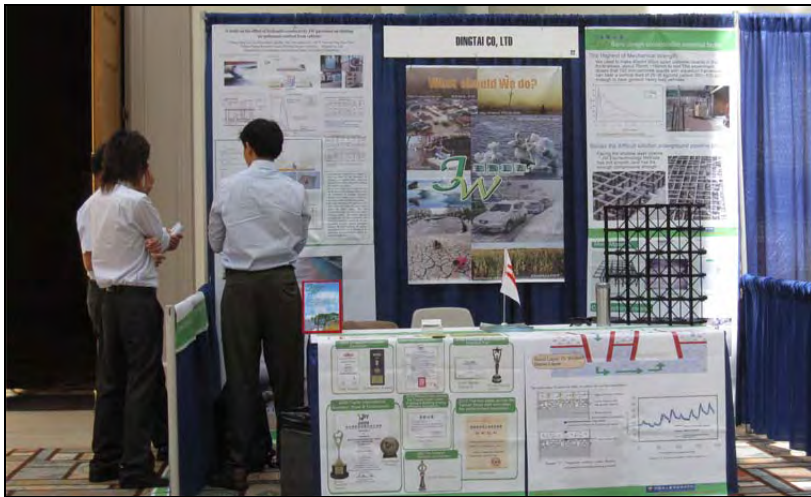


圖 11 5th ICEST 2010 廠商參展區(1)



圖 12 5th ICEST 2010 廠商參展區(2)

附錄 1

5th International Conference on Environmental Science and Technology 2010 July 12-16, 2010 • Hilton Houston North Hotel • Houston, USA

Conference Schedule

	12-July	13-July	14-July	15-July	16-July
Morning 8:00a.m. - 11:55a.m.	Registration	Plenary Meeting	Platform Sessions	Platform Sessions	Platform Sessions
Afternoon 1:30pm. - 6:05p.m.	Exhibition Noon- 8:00p.m.	Platform Sessions	Platform Sessions	Platform Sessions	Free
Evening 7:00p.m. - 9:00p.m.		Poster Session I	Poster Session II	Award Announcement	
7:30a.m. - 8:00p.m.	Registration Exhibition	Registration Exhibition	Registration Exhibition	Registration Exhibition	Registration

Presentation at a Glance

Tuesday, July 13		Session Number	Session Title
Grand Meeting Room	8:00am-11:50am	Session00-01	Plenary Meeting
Meeting Rooms	1:30pm-6:05pm	Session 01-09	Water Quality Assessment/Management
	1:30pm-6:05pm	Session 02-01	Aerosol
	1:30pm-6:05pm	Session 02-02	Air Quality Assessment
	1:30pm-6:05pm	Session 02-04	Waste Gas Control Techniques
	1:30pm-6:05pm	Session 03-03	In-situ Remediation
	1:30pm-6:05pm	Session 03-04	Solid Waste Management / Polymer Waste Recycling and Management
Poster Room	7:00pm-9:00pm	Poster Session I	Sessions 01-01~01-09, 02-1~02-3, 03-1~03-3, 11, 12, 13, 14, 15, 16
Wednesday, July 14			
Meeting Rooms	8:00am-6:05pm	Session 01-08	Drinking Water Management
	8:00am-6:05pm	Session 01-06	Wastewater Discharge Management
	8:00am-6:05pm	Session 01-10	Nitrogen-Phosphorus Wastewater Treatment
	8:00am-6:05pm	Session 01-11	Sludge Treatment
	8:00am-6:05pm	Session 01-12	Municipal Wastewater Treatment
	8:00am-6:05pm	Session 01-13	Industrial Wastewater Biotreatment
	8:00am-6:05pm	Session 02-03	Transport of Pollutants
	8:00am-6:05pm	Session 02-05	Air Pollutant Monitoring
	8:00am-6:05pm	Session 02-06	Hazardous Gas Biofiltration
	8:00am-6:05pm	Session 02-07	Air Pollution Prevention and Management (Catalysts for Reducing Emission, Fuel Gas DeSOx, DeNOx, and Metal Removal, Air Pollution Prevention and Management)
	8:00am-6:05pm	Session 03-01	Contaminants in the Subsurface
	8:00am-6:05pm	Session 03-02	Natural Attenuation of Contaminants
	8:00am-6:05pm	Session 03-05	On-site and Off-site Remediation
	8:00am-10:05am	Session 03-06	Landfill
	8:00am-6:05pm	Session 03-07	Permeable Reactive Barriers
	8:00am-6:05pm	Session 03-08	Waste Recycling
	8:00am-6:05pm	Session 03-10	Radioactive Waste and Land Pollution

	8:00am-6:05pm	Session 04-01	Ecosystem Assessment
	8:00am-6:05pm	Session 04-02	Restoration of Ecosystems
	8:00am-6:05pm	Session 06-1	Wetland Conservation
	8:00am-6:05pm	Session 06-2	Wetlands for Wastewater Treatment
	8:00am-6:05pm	Session 07-1	Remediation of Contaminated Sediments
	8:00am-6:05pm	Session 08-01	Global Warming and its Impacts
	8:00am-6:05pm	Session 08-02	Carbon Discharge Reduction
Poster Room	7:00pm-9:00pm	Poster Session II	Sessions 01-10 ~ 01-17, 02-4~02-10, 03-4~03-12, 04, 05, 06, 07, 08, 09, 10
Thursday, July 15			
Meeting Rooms	8:00am-6:05pm	Session 01-01	Rivers, Lakes and Estuary Systems
	8:00am-6:05pm	Session 01-02	Watershed Management
	8:00am-6:05pm	Session 01-03	Water Resources and Assessment
	8:00am-6:05pm	Session 01-04	Groundwater
	8:00am-6:05pm	Session 01-05	Non-point Sources
	8:00am-6:05pm	Session 01-14	Adsorption/Desorption for Wastewater Treatment
	8:00am-6:05pm	Session 01-16	Reactions and degradation of Wastewater Contaminants
	8:00am-6:05pm	Session 01-17	Nanotechnology Applications
	8:00am-6:05pm	Session 05-1	Human Exposure
	8:00am-6:05pm	Session 05-2	Bio-response and bioavailability
	8:00am-6:05pm	Session 05-3	Microbiology and Microbial Degradation
	8:00am-6:05pm	Session 09-1	Metal Distribution
	8:00am-6:05pm	Session 09-2	Metal Removal and Remediation
	8:00am-6:05pm	Session 09-3	Speciation, Bioavailability and Accumulation
	8:00am-6:05pm	Session 09-4	Phytoremediation
	8:00am-6:05pm	Session 11-1	Environmental Simulation
	8:00am-6:05pm	Session 11-2	Water Quality Modeling
	8:00am-6:05pm	Session 12-1	GIS for Environmental Assessment
	8:00am-6:05pm	Session 12-2	Data Management and Statistics
	8:00am-6:05pm	Session 12-3	Environmental Remote Sensing Applications
	8:00am-6:05pm	Session 14- 1	Society and the Environment
	8:00am-6:05pm	Session 14-2	Environmental Ethics, Laws and Education
	8:00am-6:05pm	Session 16-1	Wind Energy
	8:00am-6:05pm	Session 16-2	Solar Energy
	8:00am-6:05pm	Session 16-3	Bio Fuels and other Technologies
Conference Center	7:30pm-8:30pm	Award Announcement	Including <i>Student Paper Award, Young Scientist Paper Award, Conference Paper Award, and Poster Award</i>
Friday, July 16			
Meeting Rooms	8:00am-11:50am	Session 01-15	Reactions and Degradation of Wastewater Contaminants
	8:00am-11:50am	Session 10-1	Degradation of Persistent Organic Pollutants
	8:00am-11:50am	Session 13-1	Environmental Analytical Technologies
	8:00am-11:50am	Session 13-2	New Method Applications
	8:00am-11:50am	Session 13-3	Environmental Monitoring
	8:00am-11:50am	Session 15-1	Environmental Quality and Planning
	8:00am-11:50am	Session 15-2	Energy-Related Environmental Problems
	8:00am-11:50am	Session 15-3	Environmental Policy and Management
	8:00am-11:50am	Film Session	<i>Blind Spot: Peak Oil & the Coming Global Crisis</i>

附錄 2

Presentation Topics

The Conference program will comprise several hundred platform and poster presentations, organized into sessions that will address a variety of disciplines and technologies as well as contaminants. The sessions will be chaired by internationally recognized leaders in environmental sciences and technologies.

Session #	Session Title	Paper
00	Plenary Meeting	【4】
01	Water Pollution and Water Quality Control	【181】
01-01	Rivers, Lakes and Estuary Systems	6
01-02	Watershed Management	2
01-03	Water Resources and Assessment	9
01-04	Groundwater	16
01-05	Non-point Sources	3
01-06	Wastewater Discharge Management	3
01-07	Drinking Water Protection	14
01-08	Drinking Water	
01-09	Water Quality Assessment / Management	20
01-10	Nitrogen-Phosphorus Wastewater Treatment	8
01-11	Sludge Treatment	8
01-12	Municipal Wastewater Bio-treatment	11
01-13	Industrial Wastewater Bio-treatment	20
01-14	Adsorption/Desorption for Wastewater Treatment	24
01-15	Physico-chemical Wastewater Treatment	16
01-16	Reactions and Degradation of Wastewater Contaminants	4
01-17	Nanotechnology Applications	17
02	Air Pollution and Air Quality Control	【54】
02-1	Aerosol	2
02-2	Air Quality Assessment	20

Session #	Session Title	Paper
02-3	Transport of Air Pollutants	3
02-4	Waste Gas Control Techniques	9
02-5	Air Pollutant Monitoring	10
02-6	Hazardous Gas Bio-filtration	3
02-7	Air Pollution Prevention and Management (Catalysts for Reducing Emission, Fuel Gas DeSO _x , DeNO _x , and Metal Removal)	7
03	Land (Soil, Waste Solid) Pollution and Remediation	【51】
03-1	Contaminants in the Subsurface	8
03-2	Natural Attenuation of Contaminants	2
03-3	In-Situ Remediation	9
03-4	Solid Waste Management / Polymer Waste Recycling and Management	13
03-5	On-site and Off-site Remediation	9
03-6	Landfill	5
03-7	Permeable Reactive Barriers	
03-8	Waste Recycling	5
04	Ecosystem Assessment and Restoration	【28】
04-1	Ecosystem Assessment	25
04-2	Restoration of Ecosystem	3
05	Bio-Assessment and Toxicology	【27】
05-1	Human Exposure	8
05-2	Bio-response and Bioavailability	12
05-3	Microbiology and Microbial Degradation	7
06	Wetlands	【4】
06-1	Wetland Conservation and Assessment	4
06-2	Wetlands for Wastewater Treatment	
07	Sediments	【3】
07-1	Contaminated Sediments	3

Session #	Session Title	Paper
08	Global Change	【11】
08-1	Global Warming and its Impacts	5
08-2	Carbon Discharge Reduction	6
09	Metals	【26】
09-1	Metal Distribution	7
09-2	Metal Removal and Remediation	11
09-3	Speciation, Bioavailability and Accumulation	2
09-4	Phytoremediation	6
10	Persistent Organic Pollutants	【6】
10-1	Characterization and Degradation of Organic Pollutants	6
11	Modeling	【19】
11-1	Environmental Simulation	16
11-2	Water Quality Modeling	3
12	GIS, Statistics, and Remote Sensing Applications	【14】
12-1	GIS for Environmental Assessment	8
12-2	Data Management and Statistics	
12-3	Environmental Remote Sensing Applications	6
13	Environmental Analysis and Measurement	【23】
13-1	Environmental Analysis and Field Technologies	10
13-2	New Method Applications	7
13-3	Environmental Monitoring	6
14	Society and the Environment	【9】
14-1	Society and the Environment	5
14-2	Environmental Ethics, Laws and Education	4
15	Environmental Planning and Management	【17】

Session #	Session Title	Paper
15-1	Environmental Quality and Planning	6
15-2	Energy-Related Environmental Problems	4
15-3	Environmental Policy and Management	7
16	Sustainable Energy Development	【19】
16-1	Wind Energy	5
16-2	Solar Energy	
16-3	Bio-fuels and Other Technologies	14
17	Special Film Session	【1】
17-1	Blind Spot: Peak Oil and Coming Global Crisis	1
Total		【497】

備註：依據 Paper Abstracts of 5th ICEST 2010 所載資料彙總（中油公司探採研究所）。

PLATFORM PRESENTATION SCHEDULE

Tuesday Morning, July 13, 2010

Plenary Session

Tuesday, July 13 | Raphael Ballroom C+D
Chair: Dr. George A. Sorial (University of Cincinnati, USA)

9:10 A.M. – 9:15 A.M. **Welcome and Opening.**
Professor George A. Sorial (University of Cincinnati, Ohio, USA), Conference Chair

9:15 A.M. – 9:50 A.M. **Characterization of Atmospheric Particles from South America to Antarctic.** Prof. Ricardo Henrique Moreton Godoi, Ph.D. (Federal University of Paraná UFPR, Curitiba, PR, Brazil)

9:50 A.M. – 10:25 A.M. **Groundwater-Surface Water Flux Measurements.** Dr. Carl G. Enfield, Ph.D. (Enfield Environmental Research, West Chester, OH, USA)

10:25 A.M. – 10:40 A.M. Break

10:40 A.M. – 11:15 A.M. **Continuous Treatments of Endocrine Disrupting Chemicals (EDCs) by Artificial and Natural Oxidation Processes.** Prof. Yutaka Sakakibara, Dr. Eng. (Waseda University, Tokyo, Japan)

11:15 A.M. – 11:50 P.M. **Membrane Optodes for Heavy Metal Ions: Preconcentration and Quantification in Natural Waters.** Prof. Gurijala Ramakrishna Naidu, Ph.D. (Sri Venkateswara University, Tirupati, A.P., India)

Tuesday Afternoon, July 13, 2010

01-09 Water Quality Assessment/Management

Tuesday, July 13 | Raphael Ballroom C
Chair: Dr. George A. Sorial (University of Cincinnati, USA)

1:30 517. **MRBC Dispersion Parameters Assessment by SA, GA and GNM Inverse Modeling.** V. P. Huggi, A. K. Rastogi

1:55 628. **Innovative Non-Chemical, Electronic De-Scaling and Scale Prevention Technology for Heat Transfer Optimisation.** Philip Acquah

2:20 684. **Monitoring of Drinking Water Quality in Regional Laboratory Gombe Nigeria.** Bertha Abdu Danja, Jürgen Ertel and Otmir Deubzer

2:45 966. **Contamination of Water Body Associated with Bird Nesting on Highway Bridges.** Rania Bashar, Veysel Demir, Sazzad Bin-Shafique

3:10 985. **Utilizing the Water Quality Index as an indicator of Surface Water Pollution: A Case of Damour River, Southern Lebanon.** May A. Massoud

3:35 Break

4:00 560. **Assessment of Particles and Trace Elements in Selected Reservoir of Curitiba – Brazil.** Ricardo Henrique Moreton Godoi, André Virmond Lima Bittencourt, Patricia Yassumoto Hirata, Ana Flavia Locatelli Godoi, Eduardo Felga Gobbi, Luiz Fabricio Zara, Miguel Jafelici Jr, Rafael Bini, Jorge Eduardo de Souza Sarkis, José Manoel dos Reis Neto, José Eduardo F. C. Gardolinski, René Van Grieken
1121. **Water Quality Processes at the Estuarine Interface of Upper Newport Bay, California.** Barry Hibbs, Cherylee Sevilla, and Maryam Taiedi

4:50 729. **Dairy Enterprises Environmental Pollution Risk Assessment in Gaborone Agricultural Region, Botswana.** Gilbert Kabelo Gaboutloeloe, and C.M. Tsopito

4:50 728. **Management of Organic Waste from an Agricultural Enterprise (Dairy Farm) In Botswana.** Gilbert Kabelo Mmolawa, G.K. Gaboutloeloe and K. Ramoekwa

5:15 918. **E.Coli Chromogenic Reagent Selection Based on User Perception for Use in Field Based Water Quality Tests.** Tahmina Ajmal, N.E. Scott-Samuel, Germinal Magro, R.E.S. Bain, R.L. Matthews, A.P. Davis and S.W. Gundry

5:40 1102. **Optimizing Readability of Escherichia Coli Selective Fluorogenic Assay for Testing Water Quality.** Tahmina Ajmal, R.E.S. Bain, R.L. Matthews and S.W. Gundry

588. **Impact of Dumpsites on Quality of Groundwater Sources in Kano-Nigeria: Case Study.** Ahmed Fate Ali and Robert J. Young

638. **2D Transient Water Quality Analysis in Pipe Network.** Huan-Feng Duan

748. **Deterioration of Water Quality Threatens the Ecosystem of the St. Martin's Coral Island, Bangladesh.** Md. M. Maruf Hossain & D.SULTANA

770. **Influence of the Bathing Water Directive 2006/7/EC in the Bathing Water Classification.** Lago López Martínez, César Álvarez Díaz, José Luis Gil Díaz, José A. Revilla Cortezón, José A. Juanes de la Peña

02-01 Aerosol /02-02 Air Quality Assessment

Tuesday, July 13 | Salon 1
Chair: Dr. Ricardo Henrique Moreton Godoi (Federal University of Paraná / UFPR, Brazil)

1:30 601. **Characterization of Road Dust in Nanjing and Its Impact on Cleaning Efficiency.** Chuantong Li, JIA Hehua, LI Fayang

1:55 603. **Gamma Emitter Radioactive Isotopes in the Atmosphere of Madrid (Spain).** Saul García Dos Santos, Castro Catalina Jesús, Aragón

Santamaria Pilar, Veiga Ochoa Elena, Alonso Herreros Jesús, Barros Corcuera Diego, and Fernández Patier Rosalia

2:20 864. **Industrial Carbon Polluters and Control Strategies To Meet New Compliance Standards.** Lawrence Goldenhersh

2:45 593. **Healthy Environment – Indoor Air Quality of Some Brazilian Elementary Schools nearby Industries.** Ricardo Henrique Moreton Godoi

3:10 986. **Quantification of N₂O Fluxes from Irish Grasslands.** Rashad Rafique, and Gergard Kiely

845. **Role of Meteorological Factors in the Ambient Aerosol Dynamics.** Ankit Tandon

591 **Mapping of VOC Concentrations in Cuddalore SIPCOT Industrial Complex, Tamilnadu, India.** Murugesan. A. G and Balaji. S

646. **Effect of Road Development on Air Quality in Niger Delta, Nigeria.** Akpabio, John Udo Henry, John U.H. Akpabio, Anthony W. Akpan

655. **New Approach to Characterize Ozone Transport among Metropolitan Regions.** Claudia Boian, Andrade M.F., Mazzoli Carol, Tomaz E, Leme N.P., Alvalá P.C., Braghieri R. K. (Renato Kercher)

707. **Evaluation of Particulate Pollution, Local Meteorology and Urban Public Health.** Dawn Roberts-Semple, and Yuan Gao

725. **Air Pollution Control from Rice Shellers -A Case Study.** S. M. Ahuja

801. **Analysis of Suspended Particulates for Their Trace Element Contents.** Ramadan I. Damja, EL Mukhtar A. Belgasem

802. **Levels of Sulphur Dioxide and the Correlation to the Total Suspended Particulate Matter in Polluted Air Samples.** EL Mukhtar A. Belgasem and Ramadan I. Damja

835. **Air Pollution by Nicotine - a Major Constituent of Tobacco Smoke.** Jyotsna Lal and Mahesh Chandra

888. **Measurement of PAHs in the Ambient Air.** Elham Estlami

933. **Exploring The "Hot-Spots" Of Methane And Nitrous Oxide Emission From Rice Fields In Assam, India.** Sudip Mitra, Satyendra Nath Mishra

958. **Assessing the Impacts of Tropospheric Ozone on Crop Losses.** Md. Towhidul Islam, M.A. Sattar

959. **The Effects of Ozone on Crop Production in Bangladesh Using EDU Chemical.** Md. Towhidul Islam, M.A. Sattar

967. **Artificial Neural Network Estimation of Carbon Dioxide Emission Based on Economic Variable.** Carolyn Payus, Frank Figge

02-04 Waste Gas Control Techniques

Tuesday, July 13 | Salon 1
Chair: Dr. Curtis Rhodes (University of South Carolina, USA)

4:00 551. **Evaluation of the Operating Suitability of an Amine Based Process for CO₂ Removal of Flue Gases.** H. Fahlenkamp and V. Kubacz

4:25 822. **Application of CFD Modeling to the Design of Droplet Separation Systems.** Curtis Rhodes, Harry Wechsler and Norman Mansson

4:50 834. **Structured Packing Performance – Experimental Evaluation Of Sulphur Dioxide Absorption in Water.** R. Hilda Chavezand

Nicolas Flores-Aiamo, Javier de J. Guadarrama

5:15 780. **Photocatalytic Degradation of TCE and PCE in Air.** Ngoc-Thuan Le, Dul-Sun Kim, Tae-Han Kim, Young-Kyung Lee, Su-Eon Jeong, Mi-Jung Cho and Dong-Keun Lee

926. **Case Study of a Novel Organic Waste Gas Recovery Process.** QIANG Ning, LI Jie SHENG Qiuyue

665. **Excellent CO₂ Adsorption Properties of Solvothermally Fabricated Porous CaCO₃ and MgO Nano/Microparticles.** Zhenxuan Zhao, Ruzhen Zhang, Xue Meng, Hong He, and Hongxing Dai

691. **LCA Study of Activated Carbon Adsorption and Incineration in Air Pollution Control.** Saman Saffarian

836. **Mercury Pollution and Remediation of Mercury.** Jyotsna Lal and Mubashshara Beg

892. **Elimination of Sludge Odor by Oxidizing Sulfur-Containing Compounds with Ferrate(VI).** Chun He, Dehua Xia, Minhua Su, Xiang-zhong Li, Virender K. Sharma

905. **Gas Phase Toluene Removal Using Non-thermal Plasma with Combined Catalyst.** ZHU Tao, HE Xu-wen, SHU Xin-qian, XU Dong-yao, JIA Jian-li

03-03 In-Situ Remediation

Tuesday, July 13 | Raphael Ballroom D
Chair: Dr. Aleksander Astel (Pomeranian Academy, Poland)

1:30 756. **Oxidative Mineralization and Dechlorination of Pentachlorophenol in Contaminated Soils by δ-MnO₂.** Shui-Wen Chang Chien, W. L. Lin, and M. C. Wang, S.H. Chen

- 1:55 905. Plant Type Mediates Rhizospheric Microbial Characteristics and Bensulfuron-methyl Degradation in a Riparian Soil. **Yang Changming, Wang Yulai, Li Jianhua**
- 2:20 998. Design Modification for a Successful In-Situ Remediation Using Sodium Persulfate: A Case Study. **Nazmul Haque, Leslie D. Schultheis, and Apurva Patil**
- 2:45 658. Preliminary Experimental Study of Clarification Effect of VSF on Pollutants in Surface Runoff. **Huaien LI, Na DENG, Yinqun YANG, Dongqing SHI**
616. Biochar for Reducing Atmospheric Carbon Dioxide Release and Improving Degraded Environment. **Xinde Cao**
656. The Importance of Manipulating Multiple Anaerobic Populations Simultaneously to Enhance Reductive Dechlorination. **Michael R. Sieczkowski**
809. Performance of Two Landscape Plants for Purifying Eutrophication Materials in Urban Riverway Sewage. **WANG Xiang-rong, HU Huan, GU Yu-jiao, RUAN Xiao-feng, WANG Shou-bin**

03-04 Solid Waste Management / Polymer Waste Recycling and Management

Tuesday, July 13 | Raphael Ballroom D
Chair: Dr. Golok B. Nando (Indian Institute of Technology, India)

- 3:35 717. Waste Electric and Electronic Equipment Management in China: Latest Progress and Recovery Strategies. **Fan Huang, Xiang-Zhou Meng and Ling Chen**
- 4:00 744. Excess Sludge Minimization in Conventional Activated Sludge Pilot Plant by Several Methods. **Ali Torabian, Amir Hessam Hassani and Arezoo Nejaji**
- 4:25 758. Developing a Conceptual Model of Sustainable Material Management for Construction and Demolition Waste in Taiwan. **Ming-Chien Su, Nien-Hsin Kao, Chen-Pei Chou**
- 4:50 946. Hydrothermal Degradation of Brominated Epoxy Resin in Waste Printed Circuit Boards. **Li Guangming, Yin Jin, He Wenzhi and Huang Juwen**
- 5:15 941. TPES and TPVS Derived from Waste Polypropylene and Natural Rubber. **Jobin Jose, A.Nag and Golok B. Nando**
- 5:40 544. PAH Removal in Biological Slurry Reactor Treating A Soil Contaminated with High Concentrations of TPH. **Ali Torabian, Behzad Torabifar and Ali Akbar Azimi, Manouchehr Vossoughi**
630. A Survey of Waste Management Practices in Metallic Minerals Processing Industries (Tin Sheds) in JOS Plateau State of Nigeria. **Francis Ahmadu**
724. Environment Friendly Solution for Carcass Disposal. **S. M. Ahuja**
791. BMW Management in Delhi: Understanding and Improving the Current Scenario. **Sirajuddin Ahmed, Kafeel Ahmed and Nadia Mariyam**
882. Performance of Compacted Pondash Reinforced With Stone Columns. **Satyajit Patel, A. Dhamaniya, S. P. Singh and D. R. Biswal**
925. Numerical Simulation of Nuclear Waste Disposal in Deep Underground Tunnel. **Naresh Singh, T N Singh**
964. Study on Characteristic of Electrolysis Manganese Slag. **Changbo Zhou, Ning Duan and Junli Meng**

Wednesday Morning, July 14, 2010

01-06 Wastewater Discharge Management
01-08 Drinking Water
Wednesday, July 14 | Raphael Ballroom C

Chair: April Nabors (Birmingham Water Works Board, USA)

- 8:00 518. Optimization Models for Monitoring Station Siting in a Water Distribution Network. **Pei-Hao Li and Jehng-Jung Kao**
- 8:25 519. Monitoring of Source Water Supplied to a Treatment Plant to Evaluate Its Effect on Influent Water Quality. **April Nabors**
- 8:50 594. Spatial Variation of Haloacetic Acids in the Indoor and Outdoor Household Drinking Water in Kuwait. **Humood F. Al-Mudhaf, Mustafa I. Selim, Aleksander Astel, Abdel-Sattar I. Abu-Shady**
- 9:15 596. Identifying Carcinogenic Potentials of Drinking Water Disinfection Byproducts using Normal Human Colonocyte Cultures. **Anthony DeAngelo, Yue Ge, Michael George, Carlton Jones, Steve Kilburn, Sheau-Fung Thai, William Ward, and Ernest Winkfield**
- 9:40 678. Pre-treating Microcystis-laden Raw Water by Silver Carp in Water Works. **Hua Ma, Fuyi Cui**
- 10:05 Break
- 10:30 789. Hydrogen Peroxide with Potassium Permanganate to Replace Pre-Oxidant Chlorine in Drinking Water. **J. Cochran**
- 10:55 968. Pipe Service Age Effect on Chlorine Decay in Drinking-Water Transmission and Distribution Systems. **A. O. Al-Jasser**
- 11:20 701. Lead in Drinking Water – Case Study in Mangalore, India. **Sandeep Rao, Shrihari S.**
- 11:45 670. Women's Role in Managing Household Water in Rural Bangladesh. **Nepal C Dey and AKM Masud Rana**
632. Hydrogeophysical Study of Well Fields for Drinking Water Supply of Damascus City. **Ammar Alammareen**
865. Drinking Water for All. **Anumakonda Jagadeesh**
890. Performance of Natural and Synthetic Media in the Denitrification of Aquaculture Wastewater. **Namasivayam Vasudevan and Valsa Remony Manoj**
910. Indian Distillery Industry: Problems and Prospects of Decolourisation of Spentwash. **M. S. Chauhan, A. K. Dikshit**

02-03 Transport of Pollutants

Wednesday, July 14 | Salon 1
Chair: Dr. Alfred Sello Likuku (Botswana College of Agriculture, Botswana)

- 8:00 516. Synthesis, Characterization and Catalytic Performance of Calcined Nialfe Hydrotalcite-Like Material for SO₂ Removal. **Xinyong Li, Ling Zhao, Qidong Zhao, Yong Shi and Guohua Chen**
- 8:25 826. Ambient Air Concentrations of 210pb, 7be and 137cs in Gaborone (24.6°S, 025.9°E): Preliminary Results. **Alfred Sello Likuku, Jerzy Wojciech Mietelski, Renata Kierepko, Sylwia Blazej, Gilbert Gaboutloeloe**
- 8:50 1107. A Study on the Effect of Hydraulic-Conductivity JW Pavement on Diluting Air Pollutants Emitted from Vehicles. **Chung-Ming Liu, Jui-Wen Chen, Wei-Shian Lin and M.-T. Yen**

02-06 Hazardous Gas Biofiltration

02-07 Air Pollution Prevention and Management

Wednesday, July 14 | Salon 1
Chair: Dr. George A. Sorial (University of Cincinnati, USA)

- 9:40 688. Environmental and Economic Impacts of Increased Efficiency in Coal Power Plants. **Roger H. Bezdek**
- 10:05 887. New Approach to Improve Insulation in Gher Housing and Its' Environmental Effects. **Bilguun Byambajav, Takeuchi Tsuneo, Wakuda Yukihiko, Sugiyama Noriko**
- 10:30 672. Narrowing Loading Fluctuations of Hydrophobic Gaseous Mixture Prior to

Biofiltration. **Ashraf Aly Hassan and George A. Sorial**

- 10:55 709. Influence of Water Content on Degradation Rates of Toluene in a Soil Biofilter. **Daisy B. Badilla, Maria Lourdes P. Dalida, Peter A. Gostomski**
- 11:20 554. Catalytic Desulphurization for the Removal of Sulfur Compounds Using Chemical Oxidative Process. **Sachin Kumar Sharma, R.P. Badoni, S. Suresh and V.C. Srivastava**
- 11:45 610. Air Pollution around Taj Mahal. **Ashish Dhamaniya and Satyajeet Patel**
657. Biofiltration of H₂S Used Activated Carbons of High and Low Iodine Numbers As Carriers of Iron-Oxidizing Bacteria. **Zhiling Li, Tonghua Sun, Nanwen Zhu, Jinping Jia**
868. Capture of CO₂ by Vacuum Swing Adsorption Process Using Activated Carbon Beads. **Chunzhi Shen, Ze Sun, Xinfu Song, Ping Li, Jianguo Yu**

03-01 Contaminants in the Subsurface

03-06 Landfill

03-07 Permeable Reactive Barriers

03-08 Waste Recycling

Tuesday, July 14 | Raphael Ballroom D
Chair: Dr. Saud S. AL-Oud (King Saud University, Saudi Arabia)

- 8:00 873. Magnitude of Pesticidal Contamination in Soil from Sakri – A Town of Dhule District in Maharashtra of India. **Tank Shantilal Kunvarji, and S.S.Shewale**
- 8:25 938. Experimental Study on Temperature Variation of Municipal Refuse Landfill Body. **Tao HUANG, LIU Hui**
- 8:50 568. Longevity of Micro-Scale ZVI and Organic Carbon in Permeable Reactive Barrier and Source Applications. **Josephine Molin, Tracy Bellehumeur, Jim Mueller, Eva Dmitrovic, John Valkenburg, Joanna Moreno, John Vogan**
- 9:15 608. Selective Separation of Chlorinated Plastic Films from (PP and PE) Packaging Plastic Wastes by Increasing Surface Hydrophilicity with Ozonation. **Mallampati Srinivasa Reddy, Tetsuji Okuda, Wataru Nishijima, Satoshi Nakai, Mitsumasa Okada**
602. Analysis and Numerical on Gas Transport in Alpine Region Landfill. **Baoyin Tang, Li Chuantong and SHI Jindi, ZHANG Shuo**
565. Behavior of Al and Si in Bayer Red Mud Sintering Process Using Na₂CO₃. **Padhi Padhi, BALAKRUSHNA PADHI, SHIB NARAYAN MEHER, ASHOK KUMAR ROUT**
914. Distribution Behaviour and Carcinogenic level of Some Polycyclic Aromatic Hydrocarbons in Roadside Soil at Major Traffic Intercepts during Winter and Autom within Developing City of India. **Vaneet Kumar, and N. C. Kothiyal**
1118. Depolymerization of PBT in Sub-critical Water in Fused Silica Capillary Reactor and Autoclave. **Zhiyan Pan and Juanjuan Dai, Ming Chou**
1148. Electrochemical Evaluation and Electro-Fenton process for Landfill Leachate Treatment. **Soraya Mohajeri, Hamidi Abdul Aziz, Mohammad Ali Zahed, Mohamed Hasnain Isa**

03-02 Natural Attenuation of Contaminants

03-05 On-site and Off-site Remediation

Wednesday, July 14 | Raphael Ballroom D
Chair: Dr. Mark Ibeke (USDA-ARS-U. S. Salinity Laboratory, USA)

- 10:05 643. Bioremediation of Explosive(2,4,6, Trinitrophenol) Contaminated Soil. **K. Gopalakrishna, Major Vikrant Ranyal**
- 10:30 649. Influence of Microbial Community on the Persistence of Escherichia Coli O157:H7 in Two Contrasting Soils. **Mark Ibeke, C-H Yang**

- 10:55 755. Phytoremediation of Pyrene in Contaminated Soils by Ryegrass and Alfalfa. M. C. Wang
- 11:20 940. Process Envelopes for Stabilised/Solidified Contaminated Soils: Initiation Work. Reginald B. Kogbara, Yaolin Yi and Abir Al-Tabbaa, Julia A. Stegemann
- 11:45 1155. Leaching Characteristics of Scrap CRT Glasses and Lead Stabilization by a SHS Process. Zhu Jian-Xin, Chen Meng-Jun, Zhang Fu-Shen

894. Mediation of Oil Sludge-Contaminated Soil by Ultrasonic Washing. Yinlin Gao, Ran Ding, Yu Zhang, Min Yang
944. Magnitude of Mining Activity in Drought-Prone Bundelkhand Region, India and Implications. Munmun Chakarvorty, and J. K. Pati

Wednesday Afternoon, July 14, 2010

- 01-10 Nitrogen-Phosphorus Wastewater Biotreatment
01-11 01-11 Sludge Treatment
01-12 Municipal Wastewater Biotreatment
01-13 Industrial Wastewater Biotreatment

Wednesday, July 14 | Raphael Ballroom C
Chair: Dr. Yutaka Sakakibara (Waseda University, Japan)

- 1:30 508. Encapsulation of Electroplating Sludge - Its Mechanical Strength, Leachate Studies and Microstructural Analysis. H. Dayananda, Lokesh K. S.
- 1:55 899. Investigation of Organic Loading Rates and Inhibition of Thermophilic Digestion. Sebnem Koyunoglu-Aynur, and Rumana Riffat, Sudhir Murthy
- 2:20 513. A ZnFe₂O₄-Loaded TiO₂ Nanotube Arrays Electrode with Enhanced Visible-Light Photoelectrocatalytic Activity. Yang Hou, Xinyong Li, Guohua Chen
- 2:45 534. Kinetic, Isotherm, Thermodynamic and Column Studies of Biosorption of Lead [II] by Modified Shells of *Portunus sanguinolentus*. TVN. Padmesh
- 3:10 582. Bioaugmentation Treatment for Coking Wastewater Containing Pyridine and Quinoline. Yaohui Bai, Qinghua Sun, Cui Zhao, Donghui Wen & Xiaoyan Tang
- 3:35 Break
- 4:00 666. Design, Processing and Testing of Solid Waste Derived Microbial Support Material for a Wastewater Treatment System. Lam Van Giang, Franz Furby C. Ramos, Jocelyn B. Toga-on, Ma. Catriona Devanadera, Nguyen Phuoc Dan, Ohtaguchi Kazuhisa, and Wilfredo I. Jose
- 4:25 745. Biodegradation of Carbazole by the *Pseudomonas* sp. Strains. Cui Zhao, Man DING, Donghui WEN, and Xiaoyan TANG
- 4:50 1152. Development of Noise Prediction Model and Traffic Management Measures-A Case Study. Sheetal Agarwal and B. L. Swami
- 5:15 886. Performance of Consortium of Blue-Green Algal Species in Bioremediation of Tannery Effluent. V. Shashirekha, M. R. Sridharan, and Mahadeswara Swamy
- 5:40 957. Decolonization and Degradation of Dyes by Mixed and Methanogenic Cultures under Batch Conditions. Kapil Kumar, M.G. Dasidar and T.R. Sreekrishnan
774. Innovative Energy Efficiency in Aerobic Wastewater Treatment Units. Paul Pinamang Kyel
528. Physical Methods in Waste Water Treatment. Kavindra Kumar Kesari, Jitendra Behari, H.N. Verama
531. Simultaneous Removal of Ammonium Nitrogen and Phosphate by Natural Zeolite and Peat—Experimental Study in the Micro-Polluted Scenic-Water. Shan Huang, Zhang Dao-fang, Shi Chao-bin, Xu Zhi-hua, Li 'Su-hui, Jin Xiao-ying

569. Dewatering Waste Activated Sludge Using Dissolved Gas-Flotation Followed by Centrifugation. Medhat El-Zahar
663. Electro-thermal Treatment of High Concentration Ammonia Nitrogen in Water by Gaseous Oxidation in Liquid Phase (GOLP). Ji Yang, LIMEI CAO, JINPING JIA
765. Hydrostatic Suction and Chemical Conditioning Effect in Upgrading of the Sludge Drying Beds' Performance. Ali Torabian, Elmira Tarverdzadeh, Shahab Farajollahi and Mehdi Janqorban
790. Sludge Volume Reduction by Usage of Ultrasonic. Samaneh Pasha Zanousi, Bitia Ayati, Hossein Ganjidoust
816. N₂O Emission during Nitrogen Removal via Nitrite in Aerobic Granular Sludge SBR. Dawen Gao, Jiaoling Yang, Hong Liang
857. Interactions of AOA, AOB and NOB in a Nitrification Reactor. Lin Ye, and Tong Zhang
988. Recycle of Phosphorus from Sludge by Phosphate Precipitation Method. Xuemin Xiang, Zhiqiang Wei, Ren Wang, Jili Zhou, Fenglin Yang
727. Landfill Leachate Treatment by Partial Nitrification and Subsequent Anaerobic Ammonium Oxidation (Anammox). Huosheng Li, Shaoqi Zhou, Yanbo Sun
750. Research on Characters of Biofilm and Microorganism Population in Magnetic Bioreactor. Bo Shi and Yongzhang Pan
798. Sludge Characteristics in a Moving Bed Membrane Bioreactor and Conventional Membrane Bioreactor. Yousef Rahimi, Ali Torabian, Naser Mehrdadi, Hamid Pezeshk, Shahab Farajollahi, Farimah Saedi
811. Study of Surfactant Degradation by an Anoxic Biofilm Reactor. Julianna Camacho, Robin Autenrieth
815. Domestic Wastewater Treatment Using Anoxic/Oxic Membrane Bioreactor: Effect of Hydraulic Retention Time. Dawen Gao, Yu Tao, Rui An, Yuan Fu, Nanqi Ren
819. Effect of Aeration Intensity on Kinetic Behaviours of Steady-State Aerobic Granules SBR. Lin Liu, Dawen Gao
833. A Innovative Combined UAFB/MBR System Treating Low-Strength Wastewater for Energy Recovery and Water Reuse. Dawen Gao, Rui An, Nanqi Ren
505. The Surface Properties of Bacterial from Activated Sludge and Its Biofloculation. Bing Xie
637. Hybrid UASFB-Aerobic Bioreactor for Biodegradation of Acid Yellow-36 in Wastewater. Pijush Kanti Mondal, Rais Ahmad, Shams Qamar Usmani
679. Enzymatic Colour Removal of Pulp and Paper Mill Effluent by Different Fungal Strains. Pratibha Singh
681. Removal of Color in Distillery Effluent (Spent Wash) by Microbial Treatment. Pratibha Singh, Ashima Srivastava, Roli Verma, N.N. Janhavi, Meera Gupta Himanshu Singh and N.Kumara Swamy
854. Performance and model of an UASB to treat the pharmaceutical wastewater. Zhaobo Chen, Hongcheng Wang, Dongxue Hu, Jing Liu, Minhua Cui
855. Modeling of MLSS and Membrane Flux at Different SRT/HRT in SMBRs. Zhaobo Chen, Dongxue Hu, Hongcheng Wang, Jing Liu, Minhua Cui
856. A Full-Scale Experiment by Using ABR to Treat Printing and Dyeing Wastewater. Zhaobo Chen, Dongxue Hu, Aijuan Zhou, Hongcheng Wang
869. Optimal Operational Parameters of TiO₂/Fe₃O₄-SiO₂ Photocatalyst for Treating Wastewater Containing Naphthalene. Aijie Wang, Aijuan Zhou, Zhaobo
779. Performance of Aerobic Granulation and Phenol Removal in a Sludgy Blanket Reaction Process. Ngoc-Thuan Le, Dul-Sun Kim, Tae-Han Kim, Young-Kyung Lee, Su-Eon Jeong, Mi-Jung Cho and Dong-Keun Lee

02-05 Air Pollutant Monitoring

Wednesday, July 14 | Salon 1
Chair: Dr. Ricardo Henrique Moreton Godoi (Federal University of Paraná / UFPR, Brazil)

- 1:30 572. The Relationship between Particulate Matters (Pm10) Emitted from a Cement Plant and Different Climatic Factors. Jarrah Al-Zu'bi, Yasin Al-Zu'bi and Indira Al-Dahabi
- 1:55 644. PM_{2.5} Emission Factors and Chemical Profile from Light-Duty Vehicles in Monterrey, Mexico: Tunnel Study. Yasmany Mancilla, Alejandro E. Araizaga and Alberto Mendoza
- 2:20 645. VOC Emission Factors and Profiles from Light-Duty Vehicles in Monterrey, Mexico: Tunnel Study. Alejandro E. Araizaga, Yasmany Mancilla and Alberto Mendoza
- 2:45 680. Atmospheric Mercury Monitoring at the Almadén Mining District (Spain). José-María Esbrí, Pablo Higuera, Williams Llanos, Miguel-Ángel López-Berdonces, Eva-María García-Noguero and Alba Martínez-Coronado
- 3:10 893. Photocatalytic Reduction of CO₂ from Industrial Flue Gas under Visible Light. Mudar About Asi, Chun He, Minhua Su, Dehua Xia, Ya Xiong
611. Using Multi-sensor Data Fusion to Predict Dangerous States of LNG Transport Tank. Yi Chen, Zhen-an Tang and Jun Yu
945. Characterization and Magnetic Measurements of Particulate Matter from the Dust-Loaded Tree Leaves Allahabad City, India and Their Implications. Swati Shukla and J. K. Pati, D. Panda
947. Fly Ash GENERATED Spherules in Road Dusts of Allahabad City, India. Ambalika Niyogi and J.K. Pati, D. Panda

**08-01 Global Warming and its Impacts
08-02 Carbon Discharge Reduction**

Wednesday, July 14 | Salon 1
Chair: Dr. Vijay T. John (Tulane University, USA)

- 4:00 553. Urban Flood Mitigation: Resilient Options for Sustainable Cities. Damien Serre, Youssef Diab, Bruno Barroca
- 4:25 980. Climate Change Signal Detection from Multi-Temporal MODIS NDVI Data. Liu Jianhong, Zhu Wenquan, Liu Qiufeng
- 4:50 829. Estimates of Greenhouse Gas (N₂O and CO₂) Mitigation Potential in Chinese Croplands. Yao Huang, Yonghua Tang
- 5:15 866. 13X-APG Zeolite and VTSA Process for Post-combustion CO₂ Capture. Lu Wang, Ze Sun, Xinfu Song, Ping Li, Jianguo Yu
820. CO₂ Emissions with Different Soil Organic Pools and Temperature Sensitivity. Javed Iqbal, Ronggui Hu
872. Nuclear Power: Environmental Importance & Hazards. Bhaven N. Tandel, Joel Macwan
1160. Technology Integration and Scheme Study of Chinese Energy Efficiency Building CDM Projects. Beijia HUANG, Haizhen YANG * Shaoping WANG, Feng WANG
1135. Effects of Climate Variability on Lakes in Middle and Lower Yangtze River, China. Xi-yuan Wang, Pei-jiang Zhou, Heng Yin

**04-01 Ecosystem Assessment
04-02 Restoration of Ecosystems**

Wednesday, July 14 | Raphael Ballroom D
Chair: Dr. Barry Hibbs (California State University, USA)

- 1:30 760. A Preliminary Study of Ecological Risk Assessment of PAHs in Heping Harbor, Taiwan. **Nien-Hsin Kao, Ming-Chien Su, and Shih-Ying Li**
- 1:55 800. Assessment of Habitat Scale of Zacco Platypus by Using Microsatellite DNA Markers. **Naofumi Kosaka, and Yutaka Sakakibara, Noriyuki Koizumi**
- 2:20 956. Remediation of Eutrophic Water Body by Combining Typical Submerged Macrophyte and Bioenergizer. **Ma Limin, Meng Delei and Gong Bentao**
- 2:45 997. A Transactional "Glocal" Approach to Biodiversity Conservation through Sustainable Use. **Stratos Arampatzis, Robert Kenward, Basil Manos, Jason Papatthanasiou**
- 3:10 1140. Research on Exploration of Main Factors Affecting the Aquatic Ecosystem Health of the Following Rivers of Dianchi Lake. **Yi HUANG, Hang WEN, Yu SU, Mingji LI, Jialiang CAI**
- 3:35 734. The Self-Sufficient City. **Karen Berberyan**
501. Biomass Carbon Sequestration in Saltland Pastures in South-West Australia. **Omary, Al-Zain, D.J. Issango, R.W. Bell and S. Mann**
573. Risk to Water Ecosystems in Mountain Regions and Its Possible Management. **Alexander Valyaev, N. Valyaev, D. V. Nikoliski, A.A. Valyaeva, S.A. Erochin, T.V. Tusova**
580. Underutilised Grain Legumes Conservation Strategy in Nigeria: Mitigating Against Environmental Stress. **Olabisi Alamu**
589. Species Diversity and Biomass Structure of Peri-urban Vegetation in Indian Dry Tropics. **Shachi Gupta, and Rup Narayan**
604. Crisis at Deepor Beel (A Ramsar Site). **Surajit Chowdhury**
640. The Role of the Tropical Rain-Forest in Carbon Sequestration. **C. Antwi-Boasiako, A. Ayimasu**
650. Corporate Social Responsibility Vis-A-Vis Rehabilitation & Resettlement Status of Korba Coalfield in Special Reference to Coal India Limited - A Case Study. **MP Dikshit, B K Mishra, Ram Narayan Tripathi, S K Pal**
730. Varying Stress Regimes Impact the Structure of Ruderal Vegetation in Peri-Urban Areas. **Rup Narayan, Shilpi Mittal, Shubha Narayan and Shachi Gupta**
735. State of the Environment: Health Implications of Hydrogen Cyanide Pollution and Way Out. **Aladesanmi, O.T., Oladipo, O.G. and Siyanbola, W.O.**
741. Assessing Carbon Stock in a Segment of Forest in Northeastern Armenia. **Alla G. Berberyan, Armen Asryan,**
747. Ship Breaking Activities: Threats to Coastal Environment and Biodiversity in Chittagong Bangladesh. **Md. M. Maruf Hossain and S. Metei**
749. Improving the Clean Development Mechanism. **Hassan Sharif, Ed Hamlyn, Hassan Sharif, Barry Benedict, and Irasema Coronado**
803. Who Leads Community Forestry User Groups in Nepal? **Bhagwan Dutta Yadav, Hugh Bigsby, Ian MacDonald**
859. Material Flow Method for Diagnosis of Urban Ecosystem Health. **Xiaoqing Shi, Jianxin Yang**
907. Ecological Base Flow Analysis in the Feng River Basin Based on SWAT. **Dingzhi Peng, Yang Du**
911. Quality Assessment of Karkheh River on the Basis of AQ, QA in Iran. **Forough Allahyari, Kamran Mohsenifar, Ebrahim Pazira**

06-1 Wetland Conservation
06-2 Wetlands for Wastewater Treatment
07-1 Remediation of Contaminated Sediments

Wednesday, July 14 | Raphael Ballroom D
 Chair: Dr. Philip Block (FMC Corporation, USA)

- 4:25 781. Parameter Estimation for the Design of Constructed Wetland. **Ngoc-Thuan Le, Dul-Sun Kim, Tae-Han Kim, Young-Kyung Lee, Su-Eon Jeong, Mi-Jung Cho and Dong-Keun Lee**

- 4:50 525. Constructed Wetland in Tlapa, México as Wastewater Treatment Alternative in Mexican Cities **Guillermo, Cardoso-Landa**
- 5:15 676. The Intersection of Chemical Oxidation and Bioremediation: The Impact of Activated Persulfate on Microbial Populations. **Philip Block**
- 5:40 1164. The Utilization of Wetlands in Sustainable Food Production in Nigeria. **Ojekunle Olusheyi Zaccheaus**
514. Study on Purifying Technology of Integrated Substrate Flow Wetland with Artificial Aeration. **Ji-zheng PAN, Li Wen-chao, XU Li-gang**
1122. The Use of Critical Solution Mixtures for Contaminated Sediments or Sludge Remediation. **Zvi Ludmer /Tal Golan, Elena Ermolenko, Neima Brauner and Amos Ullmann**
1144. Zinc Distribution in Surficial Sediments in the Shaxi River. **Lihua Zhang, Renzhang WANG, Songcheng ZHENG, Hua ZHANG**

Thursday Morning, July 15, 2011

01-14 Adsorption/Desorption for Wastewater Treatment

Thursday, July 15 | Raphael Ballroom C
 Chair: Dr. George A. Sorial (University of Cincinnati, USA)

- 8:00 504. Removal of Dye from Aqueous Solution by Wet Peroxide Oxidation. **Pradeep Kumar, Tjoon Tow Teng, Shri Chand**
- 8:25 555. Hydrophobic Zeolites for Removal of Organic Groundwater Contaminants - Adsorption Properties and Regeneration. **Rafael Gonzalez Olmos, Frank-Dieter Kopinke and Anett Georgi**
- 8:50 583. Biosorption of Cadmium (II) Ions by Citrus Peels in a Packed Bed Column. **Abhijit Chatterjee and Silke Schiewer**
- 9:15 853. Treatment of Refinery Wastewater Compounds (BTEX) by Chitin and Chitosan. **M. A. Mohamed and S. K. Ouki**
- 9:40 673. The Effect of Fe₂O₃ Nanoparticles on the Removal of TCE by GAC. **Hafiz Saif, George A. Sorial**
- 10:05 Break
- 10:30 908. Removal of Cyanide from Aqueous Solution using Fly Ash. **Richa Sharan, Sunil K Gupta, Gurdeep Singh**
- 10:55 919. Ni Adsorption and Ni-AI LDH Precipitation in a Sandy Aquifer. **Erwin J.M. Temminghoff and Inge C. Regelink**
- 11:20 1124. Removal of Methylene Blue from Dilute Aqueous Solutions through Biosorption. **Ramesh D. Dod, G. Banerjee, D.R. Saini, R.D. Dod, Y.B. Sontakke**
- 11:45 923. Experiment Study on Treating Electrolytic Manganese Wastewater by Ion Exchange. **Fan Wang, Ning Duan**

561. Pre-concentration of Uranium from Natural Water Using Itaconic Acid Based Sorbent. **Gurijala Ramakrishna Naidu, Yakkala Kalyan, Sadananda Das and Ashok Kumar Pandey**
567. Preparation of Activated Carbon from Indian Coal for Scavenging Phenolic Pollutants from Aqueous Wastes. **Shripal Singhm, Pragya Patil, Anushka Srivastava**
595. Sorption of Dye from Aqueous Solution on Banana Stem. **Arun Kumar, S M Prakash**
614. Preparation of Activated Carbon from Indian Coal for Scavenging Aqueous Phenolic Pollutants. **Serial Singh, Pragya Patil, Anushka Srivastava**
685. Sargassum Biomass Mediated Recovery of Gold Through Biosorption, Bio-Crystallization and Pyro-Crystallization. **M. Sathishkumar, A. Mahadevan, K. Vijayaraghavan, S. Pavagadhi and R. Balasubramanian**

697. Doping Effect of Copper on the MnFe₂O₄ Ferrite for Adsorption of Methyl Green. **Saeedeh Hashemian, Mahnaz Moghahed**
793. Removal of VOCs by a Fixed Bed Packed Activated Carbon Fibers. **Xiaoping Zhang, Hsiaotao T. Bi**
837. Toxic Effect of High Cadmium Intake by Humans and Removal by Low Cost Adsorbents. **Jyotsna Lal, Mubashshara Beg and Mahesh Chandra**
848. Adsorption and Biodegradation of Multiple Classes of Antibiotics in Activated Sludge Process. **Bing Li, and Tong Zhang**
852. Study on Adsorption of Heavy Metals by Montmorillonite Composite Materials. **Fu Guizhen, Yang Yiqin**
889. Adsorption and Role of Leaching Agents on Nickel Removal in a Constructed Wetland System. **Namaslvayam Vasudevan, Kandasamy Palanivelu, Sowmya Joysula, Valsa Remony Manoj**
901. Degradation of Acid Orange II in Aqueous Solution by MnO₂ Nanorods. **Dong Shu, Hongmei Sun, Hongyu Chen, Zhengyi Xie, Liangbo Peng, Chun He**
903. Ammonia Adsorption on Fixed Beds of Different Inorganic Materials. **Cong Duc Phan and Jae Young Kim***
915. Performance of Sulfidogenic Bioreactor and Bacterial Community Shifting under Different Alkalinity Dosages. **Yang-Guo Zhao, Jie Bai and Wei-Jun Tian**
960. Phosphorous Removal from Sewage Effluent by Wastewater Treatment Residue (WTR). **Saleshni Devi**
1132. Purification of Oily Wastewater Using Composite of Polysilicate Ferro Aluminum Sulfate - Rectonite. **Shi-qian Li, Pei-jiang Zhou**
1133. Studies on the Competitive Adsorption of Cu²⁺, Pb²⁺, Cd²⁺ From Composites Adsorbent. **Shi-qian Li, Pei-jiang Zhou, Ming Zhang, A Yiguli**
1143. Characterization and Adsorption Behavior of Highly Mesoporous Adsorbents Derived From Polymer Wastes. **Fei Lian, Lingyan Zhu, Baoshan Xing**

12-01 GIS for Environmental Assessment
12-02 Data Management and Statistics

Thursday, July 15 | Salon 1
 Chair: Dr. Mark Ibekwe (USDA-ARS-U. S. Salinity Laboratory, USA)

- 8:00 523. The Use of Fournier Method and GIS in Estimating the Real Capacity of Rain Erosion. **Pouyan Keshtkaran, Ali Torabi Haghighi, Iman Bahramali**
- 8:25 552. Resilience: From Ecology Concept to Urban Application - A GIS for Urban Flood Resilience. **Serge Lhomme, Damien Serre, Youssef Diab, Richard Laganier**
- 8:50 621. Landfill Site Selection Using GIS and Analytical Hierarchy Process. **Abdollah Ardeshtir, Kourosh Behzadian, Fatemeh Jaliliani**
- 9:15 795. A Geospatial Interpolation Approach to Water Quality Index Estimation. **Mansoor A. Baloch, Daniel P. Ames**
686. Development of A GIS-Based Oil Spill Emergency Resource Allocation and Transportation System. **Miao Kou, Yong-gang Jia and Wen-quan Liu**
733. Judging Environmental Science: Data-Management and Expert Testimony in Oklahoma v. Tyson. **Robert J. van Waasbergen, J. Berton Fisher, Richard T. Garren 149**
- A Sustainable Wastewater Treatment Using Unique Combination of UASB and Bio-Tower. **Ravi Shankar D.N., Lokesh K S**
742. Deterioration of Water Quality Threatens the Ecosystem of the St. Martin's Coral Island, Bangladesh. **P. Dutta, Kall Prasad Sarma, Raza Raifiqu Hoque**

12-03 Environmental Remote Sensing Applications

Thursday, July 15 | Salon 1
Chair: Dr. Mark Ibekwe (USDA-ARS-U. S. Salinity Laboratory, USA)

- 10:05 524. Evaluating Morphological Variations of Kor River in Iran Using Remote Sensing. Pouyan Keshtkaran, Ali Torabi Haghighi, Iman Bahramali
- 10:30 704. Remote Sensing Algorithms for Estimating Enterococcus Concentration in Coastal Louisiana Beaches. Zaihong Zhang, Zhi-Qiang Deng, Kelly A., Rusch, Maria Gutierrez Wing, and Kevin Chenier
- 10:55 719. Remote Sensing Methods for Determining Soil-Productive Potential of Minor River Basins. Tatiana Trifonova, Elena Shcherbenko, Natalia Mishchenko
- 11:20 796. Application of Landsat Imagery to Water Clarity Assessment: A Case study from Turkey. Mansoor A. Baloch, Ahmad O. Aburizaiza and Nancy F. Glenn
581. Evolution of Aeolian Sand in the Source of Yarlung Zangbo River, China. Wei-shouShen, Li Hai-dong, Sun Ming, Zhang Qian and Yan Shou-guang
716. Change Vector Analysis: An Approach for Detecting Forest Changes. Wafa Nori, Irmgard Niemeyer
1127. Suitable Site Selection for Check Dams for Rain Water Harvesting Using SPOT Data. Surendra Kumar Yadav

09-01 Metal Distribution
09-02 Metal Removal and Remediation

Thursday, July 15 | Raphael Ballroom D
Chair: Dr. Domen Lestan (University of Ljubljana, Slovenia)

- 8:00 515. Heavy metals (Cr, Cu, Pb and Zn) content in benthic organisms at Jakarta Bay, Jakarta, Indonesia. Noverita Dian Takarlina, and Andrio Adiwibowo
- 8:25 556. Remediating Former Lead and Zinc Mining Sites, Cherokee County, Kansas Superfund Site. Chris Robb, Wayne Smith, K. David Drake, Marc Schliebusch
- 8:50 570. Groundwater Chromium Stabilization in A Complex Geologic Environment. John Valkenburg, and Josephine Molin
- 9:15 662. Effects of Phosphate and Oxalate on the Release of Arsenic and Lead from a Contaminated Site. Saud S. AL-Oud
- 9:40 Break
- 10:05 664. Electrochemical Separation and Reuse of EDTA in Soil Remediation. Domen Lestan, Maja Pociha and Grega Voglar
- 10:30 973. Metal Retention Experiments for the Design of Soil-Mixing Technology Permeable Reactive Barriers. Claudiane Ouefflet-Plamondon, Rod Lynch, Abir Al-Tabbaa
- 10:55 1147. Oil Palm Waste as Sorbent For Sequestering Heavy Metals from Aqueous Solutions. Sam F. Y. Li, Pei P. Gan, and Patrick K. D. Gan
- 11:20 1153. Removal of Hexavalent Chromium Ions from Aqueous Solution by a Tropical Fungal Soil Isolate. Smita Zinjarde, Ameeta avikumar and Ashok V. Bankar
537. Metals Distribution in Soils around Karoon Cement Factory, Masjed-Suleiman, Iran. Mohsen Pournia and Mir Hassan Moosavi
821. Spatial Distribution of Arsenic, Lead and Cadmium in Water and Sediment Samples in River Subin, an Urban River in Kumasi, Ghana. Yaw Amo Sarpong, Kwasi Obiri-Danso, James Hawkins Ephraim
928. Levels of Mercury, Cadmium and Zinc in Fish and Sediments from River Ofin in Ghana. Stephen Dwumah-Ankoana and James Hawkins Ephraim

971. Uranium Analysis in Food Stuff, Human Blood and Urine Samples and Its Correlation with Uranium Content in Water and Soil from Bathinda Area Punjab State, India. Surinder Singh, Mukesh kumar and Kawajit Singh
972. Seismotectonic and Fault Delineation Studies in NW Himalayas, India with Special Emphasis on Radon and Helium Emission. Surinder Singh, Arvind Kumar, Sandeep Mahajan, Bikramjit Singh Bajwa and Sunil Dhar
1157. Leaching Characteristics and Bioavailabilities of Pb and Ba Containing in CRT Glasses. Mengjun Chen, Fu-shen Zhang, Jianxin Zhu
858. Copper Stabilization via Copper Aluminate Spinel Formation. Yuanyuan Tang, Kaimin Shih, Lingru Zhang
1159. Biosorption of Chromium (VI) From Aqueous Solution by Biomass Plantain (Musa Paradisiaca) Peel Residue. Idowu O. S.

11-01 Environmental Simulation
11-02 Water Quality Modeling

Thursday, July 15 | Conference Center
Chair: Dr. Mbofho Stanley Liphadzi (Water Research Commission, South Africa)

- 8:00 751. Aerosol and Ozone Concentrations in the Metropolitan Area of São Paulo, Brazil: Numerical Simulations with WRF/Chem Model. Marcio G. L. Oliveira and Maria de F. Andrade
- 8:25 874. Evaluation of Biohydrogen Production Reactor Using CFD Method. Xu Wang, Jie Ding, Nan-Qi Ren
- 8:50 877. Measurements and Simulations on Blue-Green Algae Bloom in Taihu Lake, China. Xin Qian, Lin Xiao, Jinju Geng and Zhengkui Li
- 9:15 992. A Generalized Likelihood Sensitivity Analysis for Simulating the Water Quality of Constructed Wetlands. Yung-Chieh Wang, Yu-Pin Lin, Chun-Wei Huang, Hone-Jay Chu
- 9:40 970. Modeling Evaluation of the Limits of the Diffusion-Active Permeable Reactive Barrier. Alex O. Schwarz, Bruce E. Rittmann
752. Carrying Capacity Study of West Lake Michigan Region. Yongliang Jin, Amlan Mukherjee, and William Brettef
753. Theoretical Derivation of Hydrograph Method with Rational Formula. Takuya Sasada and Tadashi Yamada
766. Numerical Analysis of Flow Resistance Due to Horizontal Vortices in Compound Open Channel. Chaochao Qian, Yoshiki Motonaga, Tadashi Yamada
824. Neural Network Approach for the Prediction of Methane Concentration in Korean Mines. Timothy Doyeon Kim, Yoon Kwang Kim
876. Stormwater Runoff Mitigation from Vegetated Roofs. Robert W. Peters and TaShundra K. Jones
900. Impact of biofilms on particle transport and deposition in porous media. George E. Kapellos, T. S. Alexiou, and A. C. Payatakes
927. 3D Sediment and Mercury Modeling for Mobile Bay Using EFDC and WASP. Yi Xiong, James L. Martin, and William H. McAnally, Vladimir, J. Alarcon
948. Integrating Meteorological and MODIS Land Surface Temperature Data for Large-Scale Moisture Availability Assessment in the Loess Plateau of China. Abdelmoneim A. Mohamed, Reiji Kimura and Masato Shinoda
976. Simulation of Heavy Metals Transport in Metal-Contaminated Soils by Hydrus 1D. Azita Behbahnia, Seyed Ahmad Mirbagheri
1103. A Pilot Emergency Decision Support System for Chemical Spill on Songhua River. Jiping Jiang, Peng Wang, Liang Guo, Qi Gao, Yuanhua Chen and Yi Wang
1119. Modeling the North Atlantic Ocean Surface Water CO₂ Variability. Nsikak Benson, Galen A. McKinley and Dierk Polzin, Francis E. Asuquo
1120. Modeling Semantics of Categories in Fundamental Geographic Information by Formal Ontology. Lin Li, Hong Wang, Haihong Zhu

509. Study of Thermal Stratification in Reservoirs. Keyvan Kimiaie
605. Model-based Analysis on Response Strategies to Contamination Accidents in Water Distribution Systems. Kegong Diao, Yuwen Zhou, Ji Li
660. Preliminary Establishment of Agricultural Non-Point Source Pollution Model. Li Qiang-kun, Sun Juan and Hu Ya-wei
661. Establishment and Application of Estimation Model for Pollutant Concentration in Agricultural Drain. Li Qiang-kun, Li Hui-en

01-01 Rivers, Lakes and Estuary Systems

Thursday, July 15 | Conference Center
Chair: Dr. Kenneth Hudnell (University of North Carolina, USA)

- 10:30 619. Freshwater Harmful Algal Bloom Suppression: Solar-Powered Circulation and Current U.S. Policy. Kenneth Hudnell, Joseph Eilers, Vic Lucero, Christopher Jones, Dennis R Hill, Amanda Williams
- 10:55 759. Surveying the Problems in Developing Water Quality Index in Iran. Farzam Babaie Semiroli, A.H. Hassani, A. Torabiyan and A.R. Karbasi
- 11:20 987. Bacterioplankton Community in Highly Eutrophic Plateau Shallow Lake. Mingji Lv, Yi Huang
- 11:45 1154. Pilot Studies on Atmospheric Deposition in Mine Lakes Region Part I: Heavy Metals. Jataw-Emeagha Glory Ladidi, Ufodike E.B.C.

Thursday Afternoon, July 15, 2010

01-16 Reactions and Degradation of Wastewater Contaminants

Thursday, July 15 | Raphael Ballroom C
Chairs: Dr. Anthony B. DeAngelo (USEPA National Health and Environmental Effects Research Laboratory, USA)

- 1:30 763. Ozonation of Papermill Wastewater: Enhancing Biodegradability and Process Efficiency. Analiza Palenzuela Rollon, Mercy Grace Dionisio and Marjorie L. Baynosa
- 1:55 832. Oxidation of Triclosan by Ferrate(VI): Reaction Kinetics, Products Identification and Toxicity Evaluation. Bin Yang, Guang-Guo Ying, Jian-Liang Zhao, Li-Juan Zhang, Yi-Xiang Fang
884. Hydrogen Production from Pure and Natural Cellulosic Biomass by Thermophilic Anaerobic Cultures. Guang-Li Cao, Nan-Qi Ren, Kun Zhang and Li-Hong Liu
762. Denitrifying Biodegradation of Naphthalene by Enrichment in Marine Conditions. Xiaoying Lu, Tong Zhang and H.H.P. Fang

01-17 Nanotechnology Applications

Thursday, July 15 | Raphael Ballroom C
Chair: Dr. Jingbo Liu (Texas A & M University-Kingsville, USA)

- 2:45 606. New Strategy to Fabricate High-Performance Microfiltration Membrane with Trimodal Porous Structure. Yinan Wu, and Fengling Li, Guangtao Li
- 3:10 721. Transport, Dispersion and Deposition of nano-Particles in Porous Media: Experimental and Mathematical Modeling Study. Zhen Li, E. Sahle-Desessie, Ashraf Aly Hassan, George A. Sorial
- 3:35 783. Green Synthesis of Nanocomposite of Silver Modified Titania to Eliminate Biological Impurity from Water. Xubin Pan and Jingbo Liu
- 4:00 838. Effect of Ni (II) Doping On the CuFe₂O₄/Composite /Pistachio Composite. Saedeh Hashemian, Mohammad Hassan Dad

- 4:25 909. Fabrication of a Novel Nanotube Anode and Characteristics in Organic Wastewater Treatment. **Chao Tan**, and Yijiu Li
- 4:50 943. SiC/p-Si Nanowire Arrays Cathode for Photoelectrocatalytic Degradation of Organic Pollutants. **Huan Chen**, Hongtao Yu and Xie Quan
- 5:15 1109. Environmental Remediation of Chlorinated Hydrocarbons using Multifunctional Nanoparticles. **Vijay T. John**, Jingjing Zhan, Bhanu Sunkara
- 5:40 722. Partition of Hydrophobic Pollutants in Aquatic systems and the Influence of Nano-scale Particles. **Quiming (Amy) Zhao**, E. Sahle-Demessie, George Sorial
- 8:05 849. Determination and Quantification of Mercury (II) Using Silver Nanoparticles Embedded Nafion Membrane. **Yakkala Kalyan**, Ashok Kumar Pandey and Gurijala Ramakrishna Naidu
617. Biosynthesis of Silver and Gold Nanoparticles Using Leaf Extract of Sorbus Acuparia. **Shashi Prabha Dubey**, Mika Sillanpaa
635. Immobilization of Self-Assembly of Pre-Dispersed Nano-TiO₂ on Surface of Montmorillonite. **Yu Jiang**, Yuan Lingling and Huang Dandan
767. Disinfection of Municipal Wastewater Treatment Plant Effluent by Silver Nanoparticles. **Ali Torabian**, Hadi Miryousefi Ata, Mehرداد Nasser, Mehdi Janqorban and Shahab Farajollahi

14-01 Society and the Environment
14-02 Environmental Ethics, laws and Education

Thursday, July 15 | Salon 1
 Chair: Lawrence Goldenhersh (Enviance, Inc., USA)

- 1:30 736. Political Drivers of Air Pollution in the U.S.: A Time-Series Analysis (1959-1998). **A.C. McCreery**
- 1:55 949. Environmental Education for Sustainability across the New Macedonian Curriculum. **Mile Srbimovski**, Ismaili, M. & Abazi, A.
511. The Harmonization of Macedonian's Environmental Legislation with the European Union Legislation. **Vulnet Zenid**, Murtezan Ismaili, Zoran Sapunik
542. Chaos-Based Analysis of Environmental Stakeholders Attitudes in Mount Kilimanjaro, Tanzania. **Martin Herbert Kijazi**
870. Environmental Ethics & Values: If Not Now, When. **Bhaven N. Tandel**, and Joel Macwan
916. Environmental Legislation & Education: Two Sides of the Same Coin. **Bhaven N. Tandel**, Joel Macwan
713. Sustainability Education: A Bottom-Up Approach to Diffusion of Sustainability in Developing Countries. **Ken D. Thomas** and Helen E. Muga

16-01 Wind Energy
16-02 Solar Energy
16-03 Bio-fuels and other Technologies

Thursday, July 15 | Salon 1
 Chair: Juliet Mayu Yakubu (University of Jos, Nigeria)

- 2:45 930. Solar Energy from Oceans. **Ernst Knolle**
- 3:10 577. Microbial Diversity in a Rice Paddy Soil - MFC System by Stable Isotope Probing. **Srikanth Mutnuri**, Achal Kumar Mail, Petra Bombach and Hans H. Richnow
- 3:35 689. Waste Plastic Conversion into New Source of Energy. **Moinuddin Sarker**, Mohammad Mamunor Rashid and Mohammad Moila
- 4:00 743. Briquetting: The Solution to Agro-Waste Management. **Naron, D. R.** and Yakubu, Juliet M.
- 4:25 782. Platinum Functionalized Aligned Carbon Nanotubes Used as Cathode Catalyst of Fuel Cell. **Yuan Yuan** and Jingbo Liu

- 4:50 955. Biodiesel Production from Guindilla Oil (Guindilla trinervis Gillies ex Hook. et Arn.). **Ricardo San Martin**, Marlene Gebauer and Doris Prehn, Miguel Jordan
- 5:15 996. Utilization of Sewage Sludge for Energy Efficiency and Global Warming. **Rashad Rafique**, Nizami Abdul-Sattar, Tjalfe Poulsen
- 5:40 550. Performance Analysis of Artificially Roughened Duct Used in Solar Air Heaters. **Ranjit Singh**, Brij Bhushan and Tarun Mahajan
599. Evaluating Wind Energy Potential in a Coastal Region in the South Pacific. **Joseph Fisher**, Helen E. Muga
563. CFD Based Analysis of Artificial Roughened Duct used in Solar Air Heaters. **Brij Bhushan**, Ranjit Singh and Aman Soi
720. Applications of Renewable Energies for Storage of Horticultural Produce in Marginal Areas of KENYA: The performance Evaluation of a prototype Solar-Charcoal Cooler. **J.T. Makanga**, D. Shitanda, C. Njoroge and M.G. Ong'era
737. Generation of Bioenergy from Corn Stover with Air-Cathode Microbial Fuel Cells. **Haiyang Huang**, and Tian C. Zhang
786. Enhancement of Biogas Production from Rice Straw through Alkaline and Mechanical Pretreatment. **Yue-Chao WANG**, and Zhong-Fang LEI
799. The Plasma Resource Recovery System (PRRS): Clean Energy from Waste. **Pierre Carabin**, Andrew Carkner, and Chawki Derboghossian
825. Utilization of Municipal Solid Waste for Biogas Production and Heat and/or Electricity Generation. **Ajay Kumar Jha**, Sushma Pradhan, Li Jianzheng, and Mike Hoover
618. Assessment of the Calorific Values of Briquettes from Ten Selected Wood Species and Their Corresponding Solid Wood. **C. Antwi-Boasiako**, A. Dansoa Appiah-Denkira, Jobson Mitchuai
642. Hydrogen Generation Using Al/TiB₂ Composite Powders Reacted With Water at Room Temperature. **Yijie Zhang**, Naiheng Ma and Haowei Wang

09-03 Speciation, Bioavailability and Accumulation
09-04 Phytoremediation

Thursday, July 15 | Raphael Ballroom D
 Chairs: Dr. George Sorial (University of Cincinnati, USA); Chris Robb (HydroGeologic, Inc., USA)

- 1:30 659. Salinity Effects on Uptake of Lead and Cadmium by Two Mangrove Species. **Ima Sari** and Zubir bin Din
- 1:55 539. Availability and Plant Uptake of Heavy Metals in EDTA-Assisted Phytoremediation of Soil and Composted Biosolids. **Mbofho Stanley Liphadzi**, Mary Beth Kirkham
- 2:20 682. The Phyto-accumulation of Copper by *Aidama dentata* (Asteraceae). **Nabanita Dasgupta-Schubert**, S. Alexander, M. G. Barrera Arguello, C.J. Alvarado Lopez,

562. Heavy Metal Impact on Mangrove and Halophytic Plants of Coastal Southern India. **Govindasamy Agoramorthy**, Minna J Hsu
527. Morphological and Biochemical Response of Fenugreek to Lead and Nickel Bioaccumulation. **Leela Kaur** and Kasturi Gadgil, Satyawati Sharma
584. Uptake of Toxic Metals by Plant Species, Inayawan Landfill, Cebu City, Philippines. **Patricia Nazareno**, Inocencio E. Buot, Jr. and Maxima Flavir

05-01 Human Exposure
05-02 Bio-response and Bioavailability
05-03 Microbiology and Microbial Degradation

Thursday, July 15 | Raphael Ballroom D
 Chair: Dr. Yutaka Sakakibara (Waseda University, Japan)

- 3:10 651. Manufacturing Fabrics That Shield Us from Electromagnetic Radiation. **Abdul Kadir Stocum**
- 4:35 881. Emission Characteristics and Cytotoxicity Analysis of Biodiesel Particulate. **Yu-Yin Liu** and **Ta-Chang Lin**
- 4:00 576. Cloning and Expression of CGTase Gene in Hydrocarbonoclastic Bacteria. **Sivaraman C** and **Srikanth Mutnuri**
- 4:25 1142. Isolation of *Escherichia Coli* O157:H7 from Farm Environments in Plateau State, Nigeria. **Itelima Janet**, and Agina Samuel
- 4:50 1149. Chemical Composition Antioxidant and Anti-Microbial Activities of Essential Oil (Lamiaceae). **Deolu-Sobogun Suziat**, Mahmoud Saleh
- 5:15 1146. Interaction between Chlorophenols with Bovine Serum Albumin by Means of Spectroscopic Methods. **Peijiang Zhou**, Yan Chen, Qiong-yu Liu
- 5:40 1129. Study on the Interaction between 2,4-Dichlorophenol and Bovine Serum Albumin by Means of Spectroscopic Methods. **Yan Chen**, Pei-jiang Zhou and Qiong-yu Liu
506. Efficacy of Botanical Extracts on the Durability of Alstonia. **Akwasi Asamoah**, Acheampong Atta-Boateng, Kwasi Frimpong-Mensah, Charles Antwi-Boasiako
529. Mutagenic Response of Mobile Phone Radiation Exposure on Reproductive System of Male Wistar Rat. **Kavindra Kumar Kesari**, Sanjay Kumar, and Jitendra Behari
574. Prediction of Irradiation Doses for Population Under Implementation of Russian Federal Program: "Development of Russian Atomic Energy Industrial Complex on 2007-2020 Years". **Alexander Valyaev**, Valyaev A.N., Krylov A. L., Semenov V.N, Nikolski D. V.
761. Use of the Bio-Indicator *C. Volvulator* to Assess the Toxicity of As-Bearing Sulphide Minerals. **Long-peng Cui**, and Jörg Feldmann
921. Effect of the Water Soluble Fraction of Spent Lubricating Oil on Microalgae. **Kadiri, M. O.** and **OGBOLU, V.N.**
1130. Interaction between CdSe/CdS Quantum Dots and Bovine Serum Albumin. **Ling Ding**, Pei-jiang Zhou
1131. Microwave-Assisted Synthesis of CdTe/CdS-labeled Carboxymethyl Chitosan Fluorescent Probe for Cell Imaging. **Zhen-yu He**, Pei-jiang Zhou, Hong-hao Zhu
1136. The Oxidative Damage of Perchlorate on Primary Cultures Hepatocytes of *Carassius auratus*. **Xiao-hu Zhao**, Pei-jiang Zhou, Xu Chen
981. Study On Microorganism Distribution Characteristics of Three Types of Types of Typical Acidified Soils in Guizhou, China. **Tianxin Li**, Nana Li, Wei Li

01-02 Watershed Management
01-03 Water Resources and Assessment

Thursday, July 15 | Conferenc Center
 Chair: Ernst Knolle (Knolle Magnetrons, USA)

- 1:30 710. Water Management by YAN Technology, YAN Microorganisms (YANM) and Titanium Bio-Ball. **Ki Hae Yang**, MI-SUG KIM, AND JEE-JUNE SONG
- 1:55 571. Environmental Impact of Return Flow on Groundwater Quality at Azraq Basin, Jordan. **Yasin Al-Zu'bi**, and Jarrah Al-Zu'bi
- 2:20 961. Performance Assessment of Water Management in the Old Land of Egyptian Delta. **Ahmed Mohsen Aly Mohamed**, Ahmed M. ALY, Yoshinobu KITAMURA, Katsuyuki SHIMIZU
615. Optimal Spatial Allocation of the Economical Crops in Saudi Arabia, According to the Comparative Advantage. **Ahmed M. Alabdulkader**, Ahmed I. Al-Amoud, Fawzi S. Awad, Abdulrahman A. Alazba, Saad A Al-hamed, Ali S. Al-Tokhais, Jalal M. Basahi,

- bdurahman M. Al-Moshallih, Yousef Y. Al-Dakheel
785. A Study of Effects of River Channel Network to Runoff by a Newly-Derived Physical Model. Kenji Tanabe, Kenta ODA, Masato OKABE, Tadashi YAMADA
613. Biomonitoring and Water Quality Assessment of Perennial River Tamirabarani, South India. A.G. Murugesan
674. Sustainable Uses of Compost and Water on Soil and Yield of Beans. Samih Abubaker, Yasin Alzu'bi and Jarrah Al-Zu'bi
871. Landscape River Water Quality Assessment of a Metropolis in China. Qing Wu, Jian Xie, Yue Zhang, Caiyun Zhao
875. New Field Incubation Technique Using Phase Change Materials for Microbiological Water Testing. R. L. Matthews, R.E.S. Bain, T. Ajmal and S.W. Gundry
932. Assessment of Nutrient Budget, Water Quality and Sediment Environment of Lake Tega, Chiba, Japan. Deepak K. C., Yukio KOIBUCHI, G W HUANG, Masahiko ISQBE
600. A New Technique of Discharge Release from Dam Reservoir for Flood Control. Yusei Kitada, and Tadashi Yamada

01-04 Groundwater
01-05 Non-point Sources

Thursday, July 15 | Conferenc Center

Chair: Dr. A. O. Al-Jasser King (Saud University, Saudi Arabia)

- 3:10 669. Status of Arsenic Contamination in Groundwater of Southern Bangladesh: A Population-Based Survey. Nepal C Dey
- 3:35 687. Arsenate Removal from Simulated Groundwater by Donnan Dialysis. Bin Zhao and Huazhang Zhao
- 4:00 700. Residential Development Overlaying a Complex Aquifer in Ontario, Canada - Science and Practice. Prem Manicks
- 4:25 1116. Groundwater Baseflows Contaminate Streams in Southern California Coastal Watersheds. Barry Hibbs, Wynne Hu, and Rachel Andrus
- 4:50 607. A Sustainable Solution for Arsenic Poisoning of Ground Water. Kshipra Misra, and Pralay O. Basu
- 5:15 950. Qualitative and Quantitative Assessment of Groundwater of Coalmining areas, India. Prasoon Kumar Singh, Dipanwita Shakat, Gurdeep Singh
- 5:40 718. Arsenic in Groundwater in South Asia: Extent of Toxicity and Remedies. Mukand S. Brar, Vicky Singh and Preeti Sharma
520. Groundwater Management – A Social Contract. Ernst Bertram
530. Preparation of Lipophilic Encapsulated KMnO₄ for Remediation of TCE in Ground Water. Baoling Yuan, Sifa Lin and Hairui Zhou
598. Impacts of Anthropogenic Factors on Groundwater Resource in the Urban Environment of Developing Countries, Ethiopia. Eyilachew Abate
883. Characteristics of Groundwater in the Plain of Yazd-Ardakan. Majid Roozbeh
990. Comprehensive Evaluation of Groundwater Arsenic Contamination in Some Areas of India. Chandan Mahanta, Runti Choudhury, Pronobjyoti Borah, Lalseng Zela Sailo, Sandip Mondal, Lalit Saikia, Wazir Alam
991. Release Mechanism and Mobilization Process of Arsenic Contamination in Unexplored Parts of Brahmaputra Floodplains. Chandan Mahanta, Runti Choudhury, Pronobjyoti Borah, Lalseng Zela Sailo, Sandip Mondal, Lalit Saikia, Wazir Alam
609. Study on Influence of Non-point Source Pollution to Water Quality of the Weihe River Based on Storm Runoff Monitoring. Jia-ke Li, Hua-en Li, Yajiao Li
1110. Prediction of N and P Loads to Receiving Water Coming From Non-Point Sources without Using GIS and Remote Sensing Methods. Mustafa

Sait Yazgan, Aysegül Ugurluoğlu and Mustafa Sait Yazgan

Friday Morning, July 16, 2010

10-01 Degradation of Persistent Organic Pollutants

01-15 Physico-chemical Wastewater Treatment

Friday, July 16 | Room: Salon 1

Chair: Dr. Gurijala Ramakrishna Naidu (Sri Venkateswara University, India)

- 8:00 726. Phototransformation of Pesticides on Leaf: An Important Dissipation Pathway in the Field. Delphine Lavielle, Boris Eyheraguibel, Claire Richard, and Alexandra Ter Halle
- 8:25 942. Effects of Rhamnolipid on Hexadecane Availability to *Bacillus* Sp. Dq02. Hong-qi Wang and Fei Hua
- 8:50 620. Improving Wastewater Oxygenation and Mixing Efficiency through Solar-Powered Circulation. Kenneth Hudnell, Ron Vien, Scott Butler, Greg Rahe, David Green, Jerry Myers, Bruce A Richards
- 9:15 841. Ligninase-Mediated Removal of 4,4'-Dibromodiphenyl Ether from Water. Yijun Chen, Liang Mao, Jiuli Ruan, Yuan Gao, Shixiang Gao
- 9:40 Break
- 10:05 965. Membrane with Photocatalytic Capability and Its Potential in Water Treatment. Ning MA, Hongtao YU, Xie QUAN, Huimin ZHAO
- 10:30 843. Dehalogenation of 2-Chloronaphthalene with Un-Rusted HClF in Semi-Batch and Continuous Systems. Ajok Sinha, Purnendu Bose
- 10:55 1105. Reduction of Chromium (VI) by Zero Valent Iron (ZVI): Impact of Chlorides. Rajneesh Kumar Srivastava, Gurdeep Singh, Ajok Sinha
817. Optimization of Laccase Production by Indigenous White-Rot Fungi from the Northeast China. Dawen Gao, Lina Du, Hong Liang
818. Cometabolic Degradation of Pyrene by Indigenous White-Rot Fungi *Pseudotrametes gibbosa*. Dawen Gao, Jiwei Wen, Hong Liang
863. Distribution Characteristic of Polycyclic Aromatic Hydrocarbons in Sediments and Biota from Wetland. Guangmin Liu, Jinchunzi Li, Zhaobo Chen, Zhongcheng Pan
590. Pretreatment of Distillery Wastewater by Electrochemical Technique. B.M. Krishna, Usha N. Murthy, B. Manoj Kumar, K.S. Lokesh
634. Pretreatment of Distillery Wastewater by Electrochemical Technique. B.M. Krishna and Usha N. Murthy, B. Manoj Kumar and K.S. Lokesh
636. Preparation of TiO₂ Coated MEDL Bulb and Its Intensification of Photocatalytic Degradation on Organic Pollutant. Yu Jiang, Guo Wei Dan Zhang
706. Organic-inorganic Pillared Montmorillonites Modified Electrode for Voltammetric Detection of Mercury. Baohong Chen, Xinjian Huang, Lishi Wang and Pingxiao Wu
804. Experimental Study of a Novel Composite Flocculant for Treating Paper-Making Wastewater. Defang Zeng, CHENG Jie, WU Zhong-hua
805. Experimental Study of a Novel Composite Flocculant in Phosphorus-Containing Wastewater Treatment. Defang Zeng, XU Bao-lin
937. Efficiency and Mechanism of Oxidation Degradation Nitrobenzene in Underground Water by H₂O₂/KMnO₄. Qiu Li-ping and Wang Wen-ke
995. CaAl-LDH Dissolution-Deposition and Its Applications in Pollution Removal. Guangren Qian

15-01 Environmental Quality and Planning
15-02 Energy-related Environmental Problems
15-03 Environmental Policy and Management

13-01 Environmental Analytical Technologies
13-02 New Method Applications
13-03 Environmental Monitoring

Friday, July 16 | Room: Salon 2

Chairs: Dr. Mansoor A. Baloch (Centers for Disease Control and Prevention, USA)
Dr. J. Cochran (Birmingham Water Works Board, USA)

- 8:00 540. Grassland as a Natural Water Infrastructure Supporting Rural Economy in South Africa. Mbofho Stanley Ljphadzi
- 8:25 794. Watershed Health: Public Health Perspectives and Implications. Mansoor A. Baloch
- 8:50 952. Challenges Confronting Strategic Environmental Assessment System of Taiwan. Shui-Ping Chang, Yi-Chao Lee, Chih-Sheng Lee
- 9:20 Break
- 9:40 667. Formulation of New Hydrology – Finding of the Indication of Climate Change. Masato Okabe and Tadashi Yamada
- 10:05 732. Verification of Qualitative Spot Test Kits for Lead in Paint. Julius M. Enriquez, Deepak K.C., Yukio KOIBUCHI, G W HUANG, Masahiko ISQBE
- 10:30 683. Characterization of Combined Process for Micropollutants Removal Present in Landfill Leachate. Yanyu Wu, Shaoqi Zhou and Fanghui Qin
- 10:55 810. A Comparative Study on the Effect of Foliar Application of Zinc, Potassium or Magnesium on Growth, Yield and Some Chemical Constituents of Mungbean Plants Grown Under Water Stress Condition. Medhat Mekhail Tawfik, Thaloath A.T. and Mohamed M.H
- 11:20 879. Assessment of Cleaner Production Options for Electrolytic Manganese Metal Industry of China. ZhiGang Dan, Ning Duan and Fan Wang
538. Who Govern the Leadership Position and Dominate Decision-Making in Community Forestry User Groups in Nepal? Bhagwan Dutta Yadav, Hugh Sigsby Ian MacDonald
831. Colorado Climate Action Plan Scenario Analysis for Power Sector. Saeed G. Barhaghi
764. Household Energy Consumption Pattern: A Case Study for Urban Indian Village. Harshika Kumari, Vinod Joon, Avinash Chandra, S.C. Kaushik
768. Emissions of Pm 2.5 and Co from Fuel/Stove Combinations Used in Rural Haryana, India. Vinod Joon, Harshika Kumari, A. Chandra, M. Bhattacharya
862. Urban Design and Planning Impacts on Energy Use and Resource Consumption. Robert W. Peters and Candace J. Watson
696. The Environmental Policy and Administration in Bangladesh: An Overview. Noor Mohammad
754. Lessons from the Proposed Radioactive Waste Disposal Site at Yucca Mountain, Nevada. Omar M. Al-Qudah, Irasema Coronado, John Walton, and Ed Hamlyn
880. Risk-based Approach for Examining Vertical Separation Distances in On-site Wastewater Disposal Systems. Anthony M. Janicek and Mark A. Tumeo
935. Cost-Quality Optimization of Pedestrian Paver Blocks Using a Green Binder. Mandana Rezaee, and Habib Bayat
705. Image Segmentation of SAR Image based on Mathematical Morphology. Ning Ding, Yingjun Sun, Qian Wang
812. Quantitative Multivariate Benthic Foraminiferal Analysis an Important Tool for Ecosystem Assessment: Results from Eastern Indian

- Ocean. Virendra Bahadur Singh and Ajai Kumar Rai
867. Environmental Cost-Benefit Analysis of Organic Waste Gas Purification Methods Using Data Envelopment Analysis Approach. Zhan Tianzhen, Xiu Guangli, Zhang Danian
913. Estimation of Polycyclic Aromatic Hydrocarbons (PAHs) on Honda Genset in Diesel- Biodiesel Blends by GC Technique. Vaneet Kumar and N. C. Kothiyal
545. Determination of PBB15 by a New ELISA Method. Huisheng Zhuang, Libo Yang, Qionge Wang and Hanyu Chen
546. Indirect Competitive Real-Time Immuno-PCR Assay for the Determination of PAHs in Environment. Huisheng Zhuang, Chun Zhou

548. A New Elisa Method for Detecting Naphthalene in Environment. Qionge Wang, Libo Yang, Chun Zhou and Qiyang Ye, Zhuang Huisheng
806. Preparation and Application of a Novel Environmentally Friendly Seed Coating Agent for Corn. Defang Zeng, Xiang Mei, Juanjuan Wu
807. A Novel Wheat Seed Coating Agent. Defang Zeng, Hong Wang
808. Preparation and Study of a Novel Environmentally friendly Seed Coating Agent for Wheat. Defang Zeng, Fang Wang, Xiang Mei, Zhen-E Wang
699. Deposition Monitoring Technology in Estuarial Environment Using Electrical Resistivity Method. Yong-gang Jia and Hong-lei Li, Xiang-mei Meng, Xiao-lei Liu and Hong-xian Shan

17-01 Film Session

Friday, July 16 | Room: Salon 3
Chair: Dr. George A. Sorial (University of Cincinnati, USA)

- 9:00 861. Blind Spot: Peak Oil & the Coming Global Crisis

POSTER SESSIONS

POSTER SESSION I

Atrium Lobby

7:00 p.m. – 9:00 p.m.

Tuesday, July 13, 2010

01 Water Pollution and Water Quality Control

01-01 Rivers, Lakes and Estuary Systems

1. 1163. Oceanic Contamination by Chemical Materials Derived From Decomposed Marine Debris Plastics. Song In Park, Jeong Hun Park, Suk Hyun Na, Guang Chun Lee and Seon Yong Chung

01-02 Watershed Management

2. 785. A Study of Effects of River Channel Network to Runoff by a Newly-Derived Physical Model. Kenji Tanabe, Kenta ODA, Masato OKABE, Tadashi YAMADA

01-03 Water Resources and Assessment

3. 600. A New Technique of Discharge Release from Dam Reservoir for Flood Control. Yusei Kitada, and Tadashi Yamada

01-04 Groundwater

4. 1115. Assessment of Source Flows at a Mojave Desert Spring: Habitat to Endangered Species. Luz Vargas, Barry Hibbs, and Mercedes Merino

01-05 Non-point Sources

5. 648. Impact of Non-point Source Pollution on Bacterial Community Structure in River Water from a Densely Populated Watershed. Mark Ibekwe, Richard M. Bold, Stephen. R. Lyon, and Menu B. Leddy

01-06 Wasterwater Discharge Management

6. 692. Biosolids as Foaming Reactive for Froth Flotation Processes. Lorenzo Reyes-Bozo, Alex Godoy-Faúndez, Miguel Herrera and Rosanna Ginocchio

01-08 Drinking Water Management

7. 814. Reduction of Perchlorate from Contaminated Waters Using Zero Valent Iron, Palladium as a Catalyst, and UV Light. Q. Amy Zhao, E. Sahle Demessie, and George Sorial
8. 860. Physico-Chemical and Microbiological Analysis of Some Drinking Water Sources in Buea, Cameroon. George Elambo NKENG, Loveline A. Azah, Samuel N. Ayonghe, Fidelis A. Fofifac, Susan Gaskin, L. L. Lifongo

01-09 Water Resources and Assessment/ Management

9. 708. The Fecal Coliform Pollution in the Lanzhou Section of the Yellow River, China. Famin Liu and Lirong Wang, Weishou Shen
10. 784. A Study of Water Quality in Tidal Area of Urban Rivers -Behavior of DO Concentration and BOD Concentration in Tokyo. Yasuki Yamakado, Masato OKABE, Tadashi YAMADA
11. 983. Bacterial Indicators of Fecal Contamination in the Macagua Lake, Bolívar State, Venezuela. Rosa Vásquez Lic, Nailec Valdiviezo, Tibisay Gómez, Hilda Centeno and Lenny Moya

02 Air Pollution and Air Quality Control

02-2 Air Quality Assessment

12. 707. Evaluation of Particulate Pollution, Local Meteorology and Urban Public Health. Dawn Roberts-Semple, and Yuan Gao
13. 978. Identify of Indoor Air Trace Organic Pollutants by Easy Sampling Method. Zhou Lei, and Chen Ling
14. 1117. Ethanol Usage in Urban Public Transportation – BEST Project. Silvia Maria Stortini González Velázquez, Sandra María Apolinario, José Roberto Moreira

03 Soil (Soil, Solid Waste) Pollution and Remediation

03-01 Pollutants in the Subsurface

15. 788. Adaptive Kalman Filter Scheme for the Simulation of Benzene in Subsurface Environment. Shouu-Yuh Chang and Linkel K. Boateng
16. 827. Unscented Kalman Filtering to Improve Accuracy of Subsurface Contaminant Transport Models. Mohammad Sayemuzzaman, Shouuh Yuh Chang
17. 830. Quantifying Immobile LNAPL in Contaminated Sandy Aquifers. M.S. Al-Suwaiyan

18. 846. Reconnaissance of Heavy Metal Distribution and Enrichment around Botswana. Khumoetsile B. Mmolawa, Alfred S. Likuku and Gilbert K. Gaboutloeloe
19. 898. Estimation of Ectomycorrhizal Fungal Community Structure Using Extramatrical Mycelium and 454-Pyrosequencing in Lead Contaminated Forest Soil. Hui Nan
20. 1125. Study of Natural Radioactivity and Radon Exhalation Rates in the Soil Samples. Rohit Mehra and Komal Badhan, R.G. Sonkawade

03-02 Natural Attenuation of Contaminants

21. 502. Factors Affecting Fate of Azoxytobrin in Soils. Neera Singh, and Shashi B. Singh

03-03 In-Situ Remediation

22. 558. Remediation of a Contaminated Gas Station Using ISCO. Alexandre Picchi, Patricia H.L. S. Matai, Mauricio G. Sabbag
23. 775. Quantifying & Evaluating the Effectiveness of CPS injections at a Cr(VI) Contaminated Site. Christiane Ortega, and Andre Ellis and Diana Fregoso

11 Modeling

11-1 Environmental Simulation

24. 675. A Simplified Lumped Parameter Method to Determine SVQC Emission Parameters. Liu Cong, Yiping Zhang, Lixin Wang
25. 753. Theoretical Derivation of Hydrograph Method with Rational Formula. Takuya Sasada and Tadashi Yamada
26. 766. Numerical Analysis of Flow Resistance Due to Horizontal Vortices in Compound Open Channel. Chaochao Qian, Yoshiki Motonaga, Tadashi Yamada
27. 824. Neural Network Approach for the Prediction of Methane Concentration in Korean Mines. Timothy Doyeon Kim, Yoon Kwang Kim

12 GIS, Statistics, and Remote Sensing

12-1 GIS for Environmental Assessment

28. 993. Finite Mixture Distribution Models with Landscape Metrics to Delineate Landslide Spatial Patterns. Lin, Yu-Pin, Chia-Hsie Tan, Hone-Jay Chu, Yung-Chieh Wang

12-3 Environmental Remote Sensing

Applications

- 29. 581. Evolution of Aeolian Sand in the Source of Yarlung Zangbo River, China. **Wei-shou Shen, Li Hai-dong, Sun Ming, Zhang Qian and Yan Shou-guang**
- 30. 716. Change Vector Analysis: An Approach for Detecting Forest Changes. **Wafa Nori, Irmgard Niemeyer**

13 Environmental Analysis and Measurements

13-1 Environmental Analytical Technologies

- 31. 668. Fundamental Research on Open Channel Flow with Hump and Narrow Path. **Akinori Katsuki, Kazutomo Yamashita, Quimpo Maritess Sescar and Tadashi Yamada**
- 32. 731. Determination of Residual Pesticides in Drinking and Surface Water by Liquid Chromatography/Tandem Mass Spectrometry. **Xiaoming Zhao, Chunyan Hao, Bick Nguyen and Paul Yang**
- 33. 740. Hydraulic Experiments on River Bed Formation in Rivermouth. **Makoto Aikawa, Shintaro Ichiki, Masato Okabe and Tadashi Yamada**

13-2 New Method Applications

- 34. 536. Development of Analytical Method to Extract and Detect Pharmaceuticals in Plant Matrices. **Reza Kazemi, Tammy L. Jones-Lepp**
- 35. 772. Free and Immobilized Acetylcholinesterases Used For Detection of Organophosphorus and Carbamates Pesticides. **Mihaela Badea, Monica Florescu, Jean Louis Marty, Gilvanda Silva Nunes, Patrizia Restani**

13-3 Environmental Monitoring

- 36. 597. A Study on Quantitative Evaluation of Mitigation Effects of Thermal Environment in the Vicinity of Rivers in Urban Area. **Shuhei Ohno, Takuma KATO, Tadashi YAMADA**
- 37. 776. Development of Bismuth-Based Screen-Printed Sensors for Heavy Metals Ions Detection. **Monica Florescu and Mihaela Badea, Simone Romano and Patrizia Restani**
- 38. 778. Detection of Heavy Metals Using Inhibition Biosensors and AAS Methods. **Monica Florescu, Mihaela Badea, Claudia Stihl**

14 Society and the Environment

14-1 Society and the Environment

- 39. 999. A Transversal Approach among Human Rights, Democracy, and Sustainable Development. **Nazmul Haque**

15 Environmental Planning and Management

15-01 Environmental Quality and Planning

- 40. 739. The Effects of Runoff Suppressant and Heat Environment Mitigation by Rainfall Harvesting on the Top of the Building. **Jiro Isogai, Takeharu Ishizuka, Masato Okabe and Tadashi Yamada**

POSTER SESSION II
Atrium Lobby
7:00 p.m. – 9:00 p.m.
Wednesday, July 14, 2010

01 Water Pollution and Water Quality Control

01-10 Nitrogen-Phosphorus Wastewater Biotreatment

- 1. 738. Study of a Nitrifying Sequencing Batch Reactor in Presence of m-cresol. **Alejandro Zepeda, Susana Rincón, Chérif Ben-Youssef**

01-11 Sludge Treatment

- 2. 979. Extraction of Nickel from Sewage Sludge Using Poly-aspartic Acid. **Hua Zhang, Zhiliang Zhu, Huiping Deng and Jianfu Zhao, Lihua Zhang**
- 3. 1123. Comparison of Microbial Community Shifts Between In Aerobic Reactors at Low Temperature. **Wu Cheng-qiang**

01-12 Municipal Wastewater Treatment

- 4. 844. Biomedical Waste Prospective in India. **Kodamagudi Padmini and Gurijala Ramakrishna Naidu**

01-13 Industrial Wastewater Biotreatment

- 5. 543. Use of Duckweed Lemna minor for Reduction of BOD in TimTek Process Water. **Lauren Heard Mangum, Hamid Borazjani, S.V. Diehl, M. L. Prewitt, and Dan Seale**
- 6. 904. Bio-Treatability of Wastewater Generated during Machinery Washing in Wood-Floor Industries. **Fabio Kaczala, Marcia Marques and William Hogland**

01-14 Adsorption/Desorption for Wastewater Treatment

- 7. 685. Sargassum Biomass Mediated Recovery of Gold Through Biosorption, Bio-Crystallization and Pyro-Crystallization. **M. Sathishkumar, A. Mahadevan, K. Vijayaraghavan, S. Pavagadhi and R. Balasubramanian**
- 8. 915. Performance of Sulfidogenic Bioreactor and Bacterial Community Shifting under Different Alkalinity Dosages. **Yang-Guo Zhao, Jie Bai and Wei-Jun Tian**

01-15 Physico-Chemical Wastewater Treatment

- 9. 703. The Study of Decomposition of BTEX in Groundwater by Persulfate - Analysis of Chloro-Alkyl Derivatives. **Sunlong Lin, Te-Kun Huang, Ta-Lin Chen, and Wen-Chieh Lo**

01-17 Nanotechnology Applications

- 10. 920. A Novel Functionalized Mesoporous Nanofiber Membrane and its Application for the Adsorption of Heavy Metal ions from an Aqueous Solution. **Shengju Wu, Shihui We, Yinan Wu, Bingru Zhang and Fengting Li**
- 11. 924. Single-Pot Reductive Biosynthesis of Silver and Gold Nanocrystals from Chenopodium album. **Amarendra Dhar Dwivedi, and Krishna Gopal**

02 Air Pollution and Air Quality Control

02-4 Waste Gas Control Techniques

- 12. 1104. Odor Control Study in Wastewater Treatment. **Bhargavi Gottam, Shonali Laha, and Manuel Monchofi**

02-5 Air Pollutant Monitoring

- 13. 585. The Helicopter Ecological Control of Main Pipelines of Natural Gas. **Ruben Asatryan, S.R. Asatryan, L.A. Sukoyan, N.R. Khachatryan**
- 14. 612. Characterizing the Emissions of Persistent Organic Pollutants (PCDD/FS, PBDD/FS and PBDES) From a Municipal Solid Waste Incinerator. **Yi-Chieh Lai, Lin-Chi Wang, Ying-Liang Chen, Guo-Ping Chang-Chien**

02-07 Air Pollution Prevention and Management

- 15. 922. Smokeless Flaring Assessment Study for the Safaniya Onshore Operations. **Rizwan Malik, Raafat Alnaily, Musaed Al-Ghamdi and Abdulaziz Al-Tijani**
- 16. 994. Application of Polyoxyometalate as Environmental Catalysts: Wet Air Oxidation of Organic Pollutants. **Guangshan Zhang, Peng Wang, Cheng Wei**

03 Land (Soil, Waste Solid) Pollution and Remediation

03-5 On-site and Off-site Remediation

- 17. 557. Chemical Oxidation and Reduction (Dehalogenation) of PCBs on Soils. **Alexandre Picchi, Patricia H.L. S. Matai, Mauricio G. Sabbag**
- 18. 559. Using Civil Construction as a Remediation Alternative - Diaphragm Wall. **Alexandre Picchi, Patricia H.L. S. Matai, Sérgio Pascoal Pereira**

03-8 Waste Recycling

- 19. 587. Reusing Electroplating Sludge in Belite-Rich Cement Production. **Ying-Liang Chen and Juu-En Chang, Yi-Chieh Lai, I-Hung Wu**

04 Ecosystem Restoration

04-1 Ecosystem Assessment

- 20. 503. Ecological Evaluation and Management of Lake Arpi and its Watershed Basin. **Ghazaryan Aramais**
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