出國報告（出國類別：國際會議）

2015 年科技部與俄羅斯科學基金會簽署合作協議及赴比、荷兩國合作訪問

服務機關：科技部
姓名職稱：林次長一平
科教國合司陶副研究員正統
派赴國家：比利時、荷蘭、俄羅斯
報告日期：104 年 12 月 21 日
出國時間：104 年 09 月 20 日 ~
104 年 09 月 27 日

摘　要

本次科技部林次長一平此行訪歐之工作重點為：（1）考察比利時及荷蘭創新政策以及智慧城市之推動作法；（2）代表本部與俄羅斯科學基金會（RSF）簽署科技合作協議及主持雙方第一次合作會議。此外，亦拜會歐盟研究暨創新總署、俄羅斯基礎研究基金會、高等經濟學校、莫斯科航空學院等機構，行程順利並圓滿達成任務。

目次

壹、緣起及目的

本部與俄羅斯目前合作形式主要採取多年期研究計畫案與舉行學術研討會。雙方簽有合作協議且有實際合作方案在執行者，包括俄羅斯基礎研究基金會、人文科學基金會、科學院西伯利亞分院及科學院遠東分院等 4 單位，每年合計有約 80 件執行中計畫，額度約在 1.5 至 3 萬美元，十年來兩國科研合作研究補助關係良好且穩定，對國內學者研究多有加值效果，所以即使補助額度並不算高，仍有很高的合作意願。

繼俄羅斯在 2013 年對其科學院等科研組織有極大變革後，我駐俄羅斯科技組積極接觸新成立的科學基金會（Russian Science Foundation, RSF），經了解該單位位階及其運作，認為 RSF 支助之計畫屬性強調創新高端研究，與本部目前的俄羅斯雙邊合作計畫偏向基礎研究能性質有所區隔，且可望提升現有台俄團隊之合作研究層次，是以規劃由本部與該基金會雙方能建立合作關係並簽署合作協議，期共同提供創新實作方面計畫之補助。由於此為雙方首度正式接觸，是以安排本部高層到訪，與該基金會簽署合作協議及進行第一次年度會議討論雙方合作。

本項訪俄活動，亦同時安排提前 2 天先至比利時及荷蘭考察，期了解該國在創新政策以及智慧城市之推動作法，作為本部規劃中央新村等相關園區之借鏡。

貳、過程

甲、訪問行程

一、比利時及荷蘭部份 (9 月 20 日~9 月 23 日)

日 期	活 動 行 程
09/20 (日)	23 :50 自臺灣桃園國際機場搭機出發
09/21 (一)	07 :35 抵達法國巴黎戴高樂機場 Terminal 1 10:38 自機場 Terminal 2 搭 TGV (Thalys-9855) 前往布魯塞爾 11:50 代表處出發前往 Bruxelles-Midi 車站 12:31 抵達布魯塞爾南站

	13:30-15:00 比利時智慧居家設施及智慧商場展示園區-Living Tomorrow-午餐及參訪 www.livingtomorrow.com 15:00 Open discussion End of visit 15:15 驅車返回布魯塞爾 16:00 抵旅館 check-in 及稍作休息 17:00-17:30 中央社記者江今葉採訪林次長
	18:00-19:00 拜會歐盟研究暨創新總署(DG Research & Innovation, European Commission) 歐方與會人員: - Maria Cristina RUSSO, Director for International Cooperation（國合司司長), - Kostas Glinos, Head of Unit, Unit C.1-Strategy, EFTA and Enlargement countries, Russia, Asia and Pacific, - Diego Sammaritano, Policy Officer, Unit C.1 - Francesca TOLVE, Policy Officer, Unit C.1.
	19:30-21:15 駐歐盟兼駐比利時代表處董國猷大使晚宴歡迎林次長及訪團成員 代表處參加成員: 王萬里公使、經濟參事陳正祺組長、 政務組陳志浩參事、科技參事廖峻德 組長、科技組蔡玲琳秘書 21:30 返回旅館
09/22 (二)	07:15 科技組全體同仁旅館會合 07:30 自布魯塞爾旅館出發前往荷蘭Eindhoven 10:00-11:45 Visit-1, Framework of Smart city within Brainport Eindhoven region ● Tangible project- Stratumseind 2.0 10:00 Introduction of both delegations. 10:15 **MOST, Taiwan session** - Presenting Taiwan's efforts to EU FPs and Horizon 2020, and Taiwan's current endeavors & expectation on future Research and Innovation Cooperation. 10:45 **DITSS session** - Presenting project Stratumseind 2.0 Title: City Pulse and De-escalate: prediction and

	prevention in public safety. - Field tour 11:30 Opening Discussion 11:45 End of meeting
	12:00-13:30 Eindhoven 市長邀請午宴台灣代表團: 科技部林次長一平、科國司陶正統研究員 駐歐盟代表處科技參事廖峻德組長暨同仁 2 位、駐荷蘭代表處經濟組王利桐秘書 荷方成員: -Rob van Gijzel Mayor City of Eindhoven -Jan Mengelers Chairman Board of Directors Technical University of Eindhoven(TU/e) -Naomie Verstraeten Programme Director Brainport International Programme
	14:00-15:30 Visit-2, Framework of Smart city within Brainport Eindhoven region ● Tangible project: Smart Strijp-S 14:00 Introduction of both delegations. 14:10 **MOST, Taiwan session** - Presenting Taiwan's efforts to EU FPs and Horizon 2020, and Taiwan's current endeavors & expectation on future Research and Innovation Cooperation. 14:30 **Park Strijp Beheer session** - Presenting project City of Eindhoven Smart Strijp-S, living the lab - Field tour 15:20 Opening Discussion 15:30 End of meeting
	15:30-16:00 Travel to Helmond 16:00-17:30 Visit-3, Program Automotive Campus 16:00 Introduction of both delegations. 16:10 **MOST, Taiwan session** - Presenting Taiwan's current endeavors & expectation on future Research and Innovation Cooperation. 16: 30 **Automotive Campus session** - Presenting Automotive Campus - Fire truck tour

	17:30 Opening Discussion End of meeting 17:30 驅車返回布魯塞爾
09/23 (三)	07:00 科技組廖參事和蔡秘書於旅館會合 07:15 旅館出發前往布魯塞爾國際機場 09:45 林次長與陶研究員搭機離比赴莫斯科

二、俄羅斯部份 (9 月 23 日~9 月 27 日)

September 23, Wednesday

07:00	自旅館前往機場；自比京搭機前往莫斯科
09:45 – 14:15	次長、陶副研究員抵達莫斯科 DME 機場 SN 2835 BRU -> DME 下榻旅館 Hotel National 地址: Mokhovaya, 15/1 電話: +7(495) 258-70-00
12:05 - 15:40	周司長、馮司長抵達莫斯科 SVO 機場 E 航廈 SU 2185 VIE -> SVO
18:30	王大使建業晚宴 併邀俄羅斯科學基金會工作對象 主人：王大使伉儷 駐俄代表處：魏副代表新州、許秘書寬懷
	返回旅館 Hotel National

September 24, Thursday

09:15	自旅館出發前往 RSF
10:00 – 11:10	俄羅斯科學基金會(RSF) http://www.rscf.ru/ 工作綱要：簽署合作協定 暨雙方第一次高層會談 會談議題： 1. 確認雙方共同徵求計畫之時程及規模 2. 議定雙方年度優先推動合作領域 王大使觀禮 執行長 Alexander KHLUNOV 副執行長 Yury SIMACHEV 研究計劃處 處長 Andrey BLINOV

	計畫徵求科 科長 Igor PROTSENKO 計畫徵求科 承辦人 Sergey KONOVALOV 承辦人 Maria MIKHALEVA
12:45 – 14:00	協議單位 俄羅斯基礎研究基金會(RFBR) 午宴本訪團 餐廳：Sky Launge 地址：Pr-t Leninsky, 32a (位於 RFBR 樓上) 議題： 1. RFBR 預計於 10 月底來臺舉行第 11 屆年度會議 2. 預計安排訪團前往去年甫通過之目標導向 6 個計劃之臺方實驗室（交大、台科大、成大各兩個計畫） 副主席 Vladimir KVARDAKOV 國際處處長 Oleg SHARIPOV 國際處副處長 Alexander SHAROV 創新處科長 Elena RUDTSKAYA 國際處科長 Maria BAKTYSHEVA 國際處承辦人 Evgenia MESCHERYAKOVA
15:00 – 17:00	高等經濟學校 (Higher School of Economics, HSE) http://www.hse.ru/en/ 俄羅斯科技政策與知識經濟統計前瞻研究領域頂尖單位 議題：俄方在科技政策角色與國際科技合作資訊統計研訓功能及本部國合介紹交流 ※ 該單位及媒體擬專訪林次有關本部科技與國合政策 統計與知識經濟所副所長 Alexander SOKOLOV 國際計畫中心主任 Anna PIKALOVA 智產與技術轉移處主任 Galina SAGIEVA 國際計畫中心經理 Elena NASYBULINA
17:30 – 18:00	參觀 基督救世主教堂
18:00 – 19:00	晚餐 Café Academia
19:00 – 20:30	參觀 普希金美術館
	返回旅館 Hotel National

September 25, Friday

08:45	自旅館出發前往 MAI
09:30 – 14:30	莫斯科航空學院 (Moscow Aviation Institute, MAI) http://en.mai.ru/cn/ 俄羅斯航太領域綜合排名居首翹楚大學 議題： 1. 我方學界團隊與之合作進行技轉及產學合作可能性

	2. 考慮將 MAI 列入本部龍門計畫研習單位 校長 Anatoly GERASCHENKO 國際合作副校長 Vitaly MIKNIS 國關處處長 Sergei LUTIN 國關處科長 Elena BARANOVA
	MAI 午宴本訪團
15:00 – 16:30	網路與通訊企業 Yandex https://company.yandex.com/ 俄國最大的 IT 企業，也是全球第 4 大搜尋引擎，成立 15 年市值達 130 億美元，員工平均年齡 27 歲 議題： 1. 俄方簡報 Yandex 發展策略與服務技術內容。 2. 介紹我國資訊軟體、網路技術、行動通訊發展策略。 Product Marketing Director — Andrey SEBRANT Head, Mobile Distribution Department — Alexander ZVEREV Head, Presentation Technologies Department —Kirill ANASTASIN Senior Government Relations Manager — Igor ALEKSEEV
18:30 – 20:30	晚餐 邀請協議單位俄羅斯人文科學基金會(Russian Foundation for Humanities) 議題： 1. 如何促進兩國在人文社會領域之計畫合作 2. 規劃 2016 年 8 月海參崴舉辦第二屆臺俄雙邊研討會 主席 Vladimir FRIDLYANOV 副主席 Yury VOROTNIKOV 副行政主任 Nina VYSKOCHIL 人文科學處處長 Vasily GREBENYUK 國際處副處長 Vladimir ZAKHAROV 國際處科長 Yana SMIRNOVA
	返回旅館 Hotel National

September 26, Saturday

08:30 – 10:00	工作會議及資料整理
12:00 – 13:00	午餐
13:00	前往 SVO 機場
17:00 – 19:30	自莫斯科搭機前往阿姆斯特丹(SU3120)
21:40	經阿姆斯特丹轉機返國(BR76 AMS–BKK –TPE 2)

September 27, Sunday

19:50	抵達臺灣桃園國際機場

乙、比利時參訪活動

9 月 20 日林次長與陶副研究員從台灣出發，經法國戴高樂機場轉搭火車，抵達此行的第一站：比利時，在抵達車站前往旅館途中，直接到比利時智慧居家設施及智慧商場展示園區參觀，後到達旅館放下行李，林次長即接受我國特派記者訪問，隨後馬上趕赴歐盟研究暨創新總署拜會其國合司司長 Maria Cristina RUSSO 女士等人，會後則由我駐歐盟暨比利時代表處董大使宴請晚餐，歡迎林次長到訪並就 H2020 合作推動事交換意見。

一、比利時智慧居家設施及智慧商場展示園區 「明日之居」(Living Tomorrow)

Living Tomorrow 係由比國荷語區政府結合比國境內的智慧型生活科技研發機構與推廣應用相關的廠家，共同開發 Living Tomorrow 示範園區，作為向各界推廣未來智慧型居家生活、智慧商場以及智慧道路的可能應用。

二、歐盟研究暨創新總署（DG for Research and Innovation, European Commission）

科技部自國科會時期即積極配合歐盟「科研架構計畫」(Framework Program-FP)國際科研合作平台，包括提供台灣科研團隊 FP 計畫之先期規劃計畫(Cooking Project)補助機制，並對成功參與歐盟計畫之我國團隊給予每案每年新台幣 300 萬元之研究經費補助，過去台灣團隊與歐盟成功進行之 FP6 和 FP7 科研合作案數已達 42 項；復於 2014 年起，我國亦配合歐盟科研架構「展望 2020」(Horizon 2020) 同步成立 NCP 台灣辦公室，至 2015 年 8 月止，我國在歐盟 Horizon2020 架構下成功進行之科研合作案數則有 9 項。

歐盟 DG Research & Innovation (DG Research)業務在鼓勵歐洲基礎科學研究與技術創新，加強科研人才流通，俾提升歐洲之全球科技競爭力；並負責建立歐盟國家與第三類國家之研發合作平台。本次經我駐歐盟暨比利時代表處科技組特別讓次長拜會該署 Russo 女士，是為該組上月甫提報之第 27 屆臺歐盟年度諮商非經貿議題：建立「歐盟-台灣 IU-MoST 科技創新合作對話機制」所安排的會前會，即擬視為該項會議正式會議前之諮商工作會議，希望藉由此「非正式諮商」的機會，了解對方對我方本項提案之可能回應，並適時補充我方對本案之配套措施資訊；此外，本部亦正在重新架構國內「跨部會參與歐盟 H2020 對話平台」，此次亦為絕佳機會，給予該總署相關資訊，期能讓歐方對本部無論提案或是 H2020 之推動能有正面理解與信賴支持！

此次拜會，對方初步回應表示，臺歐盟年度諮商會議即為雙方的對話平台，與本次所提議題功能上似為重覆，另，目前臺灣與之接觸的 NCP 單位眾多，希望我們能先進行國內整合，加強臺灣 NCP 的功能為要，未來能以單一窗口或是清楚的分工方式與之聯繫，而非與歐盟單位建立新的聯繫或溝通機制。

	
圖一、本部林次長(中)及廖組長(左一)參觀比利時智慧居家設施及智慧商場展示園區，與該單位經理(右一)於展區門口合影。	圖二、本部林次長與歐盟研究暨創新總署國合司長 Maria Russo 進行工作會談，並於會後致贈紀念品及與之合影。
	
圖三、駐歐盟暨比利時代表處董大使國猷為林次長舉辦歡迎晚餐，餐後兩人合影，林次並致贈紀念品。	圖四、本部代表團參訪荷蘭 Stratumseind 2.0 智慧型社區示範街區，由該區策略主管 Albert Seubers 給予簡報。

丙、荷蘭參訪活動

9 月 22 日一早科技組 3 人陪同林次長自布魯塞爾旅館出發前往荷蘭 Eindhoven 市 Stratumseind 2.0 智慧型社區示範街區及赴 TASS International 的 Eindhoven Automotive Campus 參觀。此行安排實地參訪暨瞭解荷蘭照明製造商飛利浦(Philips)如何由工業起家，再切入創新城市發展計畫之寶貴經驗；中午並與 Eindhoven 市副市長及 Eindhoven 科技大學董事長餐敘，就我資訊及通信(ICT)產業、創新（工業、設計及科技領域）研發等議題交流意見。

一、Framework of Smart city within Brainport Eindhoven region : Tangible project-Stratumseind 2.0

本項城市打造計畫係源於90年代整個社會經濟衰退，因而促使市長、科技大學校長與國會議員3方的合作，目的在進行結構式的改善以及期望能提升經濟和

與社會功能。我們參觀的這個試範計畫Stratumseind，是位在Eindhoven市中心長400米的街道，整條路約有50間酒吧，每逢週末都有會很多來自歐洲各國的年輕遊客聚會。

由於這個計畫並非由單一商家或公司就能進行，而是需要整個社區中，包括業界、商家、居民彼此為利益共存的合作夥伴，透過政府的引領，市議會及政府部門(如警察)的支持與合作。所以計畫在最開始進行時，最困難的並不是高科技的引進，而是如何說服所有人並願意配合及參與！特別是，上面所提這種結構性的改善有三個主要面向：安全、宜居、吸引，所以如何讓大家能有共同的遠景，是一個重要的課題與突破！

除了城市街道的開發，該Stratumseind 2.0計畫的另一個項目是“Living Lab”，即透過各式不同監測儀器蒐集數據及分析，來研究影響人們的行為表現及其環境條件。比如說：透過不同路燈顏色的投射，確實發現光的顏色會影響群眾的情緒及人之間的互動，且有國籍性的顯著性差異。未來也可能利用這些分析與研究，用以評估或改善其他娛樂區或是應用在如奧運等這樣的大型活動。

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<td>圖五、22 日中午由 Eindhoven 副市長(右三)接待本部代表團，並邀請 Eindhoven 科技大學校長 Jan Mengelers(右二)一起用餐，餐後大家合影。右一為 Stratumseind 2.0 智慧型社區國際事務主任 Naomie Verstraeten。</td>
<td>圖六、本部代表團參觀 Grid Sound Sensor 實驗室。</td>
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圖七、本部代表團參觀汽車園區，由其展示公路即時監測系統。	圖八、訪問結束，林次長與我駐歐盟暨比利時代表處科技組同仁合影。

二、Framework of Smart city within Brainport Eindhoven region : Tangible project: Smart Strijp-S

下午我們參觀Smart Strijp-S，是Eindhoven 市的創意文化區，不同於上午的參觀行程在於，Stratumseind 2.0是城市打造的「試範區」，但也算是已經有居民實際生活在其中的成功應用典範區，並非只是單一建築內的展示區，Smart Strijp-S則是這些應用的來源，我們在聽取了該區的整體簡報後，參觀了4間不同產品設計的實驗室。

Strijp-S占地66英畝，目的在進行高科技的技術研發並將與文化、藝術與設計鏈結，即透過創意與技術，完成對經濟、文化和科技活動的支持與發展。Strijp-S希望透過實驗、經驗與優秀這3項信念，將這個地方打造成永續、智慧、品質及整合式的創意智能園區。

Strijp-S目前有超過500家新興企業，每年也因此吸引了150萬以上人次到訪參觀，成功的提升荷蘭Eindhoven 市的國際形象及聲譽。

三、汽車園區 (Automotive Campus, Helmond)

Automotive Campus 設立於 2009 年，是由荷蘭中央政府結合 Eindhoven-Helmond 兩地方政府、地區大學、汽車公司等所建置的產、官、學、研的整合型聚落，目標在合作開發潔淨、智慧與永續概念之汽車技術，創造出未來的行動力量！Automotive Campus 的 4 項理念是 Smart、Creative、Green and Mobility，除了技術研發，它們還提供多項服務，包括：研習會及教育訓練課程的舉辦、測試、組裝及設備共享，達到取之社會、回饋社會的永續管理。

丁、俄羅斯參訪活動

在結束荷蘭的訪問後，9 月 23 日一早林次長率陶副研究員搭機前往莫斯科，另，工程技術研究發展司馮司長展華及科學教育暨國際合作司周司長倩兩人則在結束奧地利的會議與參訪後亦於 23 日起程至莫斯科與次長會合，進行此行最主要目的-- 與俄羅斯科學基金會（Russian Science Foundation, RSF）簽署科技合作協議，並由科技組安排參訪學術與科技單位。

訪團抵達當日由駐俄代表處王大使建業與傅組長昭銘，及鄭旭峰秘書與駐處外交部同仁許寬懷秘書，分別至謝列梅捷沃國際機場及多莫傑多沃國際機場接機，並由王大使當晚設宴歡迎訪團，併邀 RSF 副執行長 Yury V. Simachev 等人。

一、俄羅斯科學基金會 (Russian Science Foundation, RSF)

RSF 係為俄羅斯聯邦政府於 2013 年底立法成立進行支持開創省研究計畫之基金會，由總統任命董事、理事委員及執行長等組織成員，特別是在本部由國科會升格為科技部後，新增對於前瞻研究及產學鏈結之推動任務，兩機構在此部分之功能與角色相仿。RSF 支助之計畫屬性強調創新高端研究，可為跨領域整合團隊、甚至實驗室，其提供補助金額每件每年期在 10-50 萬歐元間，國際合作部份為 10-20 萬歐元(約為新台幣 400-800 萬/年)；本部目前補助與俄羅斯合作之雙邊計畫約百件，但都是屬基礎研究性質，計畫額度為新台幣 80-130 萬元；若與 RSF 簽約及合作，雙方的計畫額度初擬為我方為新台幣 200-300 萬、而俄方為 400-600 萬盧布，與現行合作單位間(包括 RSFR、RFH、SBRAS 及 FEBRAS)既有區隔，且可望提升現有台俄團隊之合作研究層次。

9 月 24 日上午此行科技部代表團由林次長一平率領與我駐俄羅斯代表處王大使等人一同前往 RSF 所在大樓，當天由本部林次長與俄羅斯科學基金會執行長 A.V. Khlunov 兩人代表雙方機構假 RSF 大會議廳簽署合作協議（如附錄一及二），並由王大使出席見證簽約典禮及致詞。雙方於協議簽署完成後，緊接就雙方合作細節進行確認，雙方議定於本年 11 月及明年 5 月分別進行第一期（如附錄三）與第二期計畫徵求。

典禮結束，我方代表團一行離開 RSF，中午由本部協議單位俄羅斯基礎研究基金會（Russian Foundation for Basic Research, RFBR）副主席 V.V. Kvardakov 宴請林次長訪團，並邀王大使出席暨歡迎到俄駐任；雙方就本年 10 月底即將於臺北舉行之雙邊年會交換意見。

	
圖九、本部與俄羅斯科學基金會進行合作協議簽署典禮，雙方代表團約 20 人共同出席。	圖十、協議簽署典禮開始，由俄方 Alexander Khlunov 執行長(左)、本部林次長一平(中)及王大使建業(右)致辭。
	
圖十一、致辭結束，由俄方 Alexander Khlunov 執行長與本部林次長一平代表雙方機構簽署合作協定。	圖十二、典禮結束，雙方代表團於 RSF 大廳合影。

二、高等經濟學校 (Higher School of Economics, HSE) 統計與知識經濟所

餐後，科技部代表團一行人下午抵達高等經濟學校 (Higher School of Economics, HSE) 統計與知識經濟所，由副所長 A.V. Sokolov 接見本團並介紹俄方在科技政策角色與國際科技合作資訊統計研訓功能。該校統計與知識經濟所係科技政策與知識經濟統計前瞻研究領域頂尖單位，前曾與我國研院下科政中心有過合作關係。參訪同時，該所亦安排林次長接受該校網站編輯專訪，專訪成果如附錄四。

	
圖十三、俄羅斯基礎研究基金會副主席 V.V. Kvardakov 宴請本部代表團。	圖十四、科技部代表團參訪俄羅斯高等經濟學校，林次長與副所長 A.V. Sokolov 合影。

三、莫斯科航空學院(Moscow Aviation Institute, MAI)

MAI 係俄羅斯航太領域綜合排名居首之重點學府，25 日上午本部訪團拜會 MAI，由 MAI 校長 A.N. Geraschenko 親自向本部訪團介紹該校現況，並安排參觀飛行器設計、火箭發射系統、引擎設計、金屬加工等實驗室及實習工廠；參訪結束後午宴款待我方，此次 MAI 對我方代表團盛情款待，參訪行程密集且充實。

	
圖十五、科技部代表團與俄羅斯基礎研究基金會餐會前，途經俄羅斯第一學府—莫斯科大學，合影留念。	圖十六、科技部代表團參訪莫斯科航空學院，與校長 A.N. Geraschenko(中)等人合影。

	
圖十七、科技部代表團參觀航空學院飛機製造實作室，由該系教授親自介紹，代表團與之合影。	圖十八、科技部代表團參觀 Yandex 公司，會後林次長一平與經理 A.U. Sebrant 兩人互贈紀念品及合影。

25 日下午訪團拜會網路科技公司 Yandex；該公司係俄羅斯最大 IT 企業，亦為全球第 4 大搜尋引擎，由產品市場經理 A.U. Sebrant 簡報該公司發展策略與服務技術內容。

25 日晚上由林次訪團晚宴本部協議單位俄羅斯人文科學基金會(Russian Foundation for Humanities, RFH)主席 V.N. Fridlyanov、副主席 Y.L. Vorotnikov 等人，除討論雙方如何促進人文社會領域合作外，並就規劃 2016 年海參崴第二屆臺俄雙邊研討會交換意見。

26 日（週六）上午訪團於駐俄科技組進行工作會議後，由王大使設宴為訪團送行。訪團於該日下午搭機離俄，順利完成訪問行程。

參、心得

此行有機會能參觀荷蘭的創意城市打造智慧港計畫區，真的是一個很好的經驗，現在科技日新月異，特別是網路、新穎材料的發展上，所以一個地區在重整的規劃案中要能成功，我個人覺得並不是在於是否有集結所有最新的技術，而是對整個城市形象的製造！這必需要有生活氛圍的塑造並融入人性，一旦讓人有正面的觀感來引導，搭配著科技技術，這樣的新造城市才會人氣、才算成功。此外，一個地區要有新的發展或顯著改造，往往是從老舊或衰敗的地區著手，所以說危機往往是轉機！相反的，要在一般城市生活中重新引入最新科技，有時因為大家居住習慣了或是生活機能相對高的情況下，反而不易進行。

此次在與俄羅斯科學基金會簽署協議，有機會能與該基金會的人有第一次的接觸，雙方觀念一致、溝通良好，也讓我繼去年訪問俄羅斯創新科學園區後，再次感受到俄羅斯在求新求變求強時，所賦予年輕人的機會與使命！我國政府近年

大力提倡進行高階人力的培育，也提供了很多經費讓年輕研究人員進修或培訓，不過，這樣是否是唯一的方式？在給魚吃、教釣魚的同時，是否有帶年輕人到不同海域，讓他們自己試試身手？我確實覺得，我們給年輕人機會不夠，而人往往是被給與重任時，才能真正發揮潛力、展現所長。

肆、建議事項

一、 邀請歐盟研究創新總署(DG RTD)國際合作司Maria Cristina RUSS O司長等官員來台訪問。

二、 洽邀荷蘭Eindhoven University of Technology（TU/e）校長Jan Mengelers來台訪問。

三、 我國歐盟H2020業務推動之內部溝通平台建立及各單位間重新定位及分工。

四、 與俄羅斯科學基金會（RSF）對外公告徵求雙方第一次計畫。

五、 安排俄羅斯科學基金會（RSF）訪團於2016年來臺進行年度會議。

附錄

附件一：本部與俄羅斯科學基金會雙邊合作協定主約

AGREEMENT
BETWEEN
THE MINISTRY OF SCIENCE AND TECHNOLOGY, TAIWAN
AND
THE RUSSIAN SCIENCE FOUNDATION, RUSSIA
ON
SCIENTIFIC AND TECHNOLOGICAL COOPERATION

The Ministry of Science and Technology, Taiwan (hereinafter referred to as "MOST") and The Russian Science Foundation (hereinafter referred to as "RSF"), hereinafter collectively referred to as "Parties" and individually as "Party",

IN ORDER TO develop bilateral cooperation in the field of basic and applied research, research training, and evolvement of research teams,

HAVING REGARD to their mutual desire to strengthen cooperation,

BASED on principles of equality and mutual benefit of cooperation,

HAVE AGREED AS FOLLOWS:

Article 1

1.1. The Parties, acting within their jurisdiction, in accordance with the applicable national laws and international obligations of the states concerned and of the Parties, shall jointly coordinate mutually beneficial projects to develop scientific and technological cooperation in the field of basic and applied research in the Parties' states.

1.2. The scope of the Parties' interest shall include generally recognized branches of knowledge as specially agreed upon by the Parties.

1.3. The joint projects shall be open for participation of the international research teams, and each of them should consist of Taiwanese and Russian researchers and support staff, when necessary.

Article 2

2.1. Unless otherwise agreed in accordance with special arrangements, the Parties shall provide grant for the joint projects under the present Agreement for the participants of its side. Grant, provided by one Party, cannot be used to cover the expenses of the participants of the other Party.

2.2. Each of the Parties may exercise independent control over the expenditure of funds allocated by it.

2.3. Each of the Parties shall timely inform and advise the other Party in regard to the laws of the state of the informing Party, affecting the implementation of projects under this Agreement.

Article 3

3.1. Cooperation and coordination shall be managed by an authorized body, a joint working group (hereinafter - «JWG»), which is formed by representatives, appointed by each Party.

3.2. JWG shall determine rules and the basic principles of its work and may establish procedures for consideration and resolution of operational issues, arising during the implementation of such cooperation.

3.3. JWG shall determine the agenda of its meetings and coordinate in advance time and place of the meetings. JWG will have regular meetings alternately in Taiwan and Russia at agreed times, or when necessary at the initiative of either Party.

3.4. By joint decision of the Parties extraordinary meetings of the JWG may be held as teleconferences.

3.5. Each Party shall bear the costs of its participants associated with the meetings of the JWG.

Article 4

4.1. Any Intellectual Property Rights, originated from implementation of joint projects, funded by the Parties, belong to the Taiwanese and Russian researchers, representing the part of an international research team.

4.2. Any Intellectual Property Rights arising out of or pursuant to any Article under this Agreement, the allocation of ownership of these rights shall be determined in accordance with applicable domestic laws and international agreements to which both parties are committed.

4.3. Taiwan and Russia may use for state needs the results of intellectual activity, originated from implementation of the projects, carried out by the international research team, under this Agreement, on the basis of non-exclusive license provided by the rights holder to the state licensee.

4.4. Protection of the rights for the results of intellectual activities shall be carried out in accordance with the national legislation and regulations of each concerned states as well as international treaties, which Taiwan and Russia are committed to.

Article 5

5.1. The present Agreement shall be effective for a period of three (3) years from the date of its signature. Thereafter, it shall be automatically prolonged for consecutive periods of three

years unless and until it is terminated by either Party giving another Party a six (6) months prior notice in writing before expiration of the regular three-year period.

5.2. In case of termination for whatever cause, the provisions concerning intellectual property rights shall continue in force so long as the research results have commercial value or present significant scientific interest. In addition, the Parties shall continue to provide grant for those joint activities, already in effect for the agreed period, and all the terms and conditions of present Agreement shall continue to be in force until those joint activities are completed.

5.3. The present Agreement may be amended and annexed at any time by mutual agreement of the Parties.

Signed in Moscow on 24 September 2015, in duplicate in English language, each text being equally authentic.

On behalf of the Ministry of Science and Technology, Taiwan	On behalf of the Russian Science Foundation, Russia
LIN Yi-Bing Deputy Minister	KHLUNOV Alexander Vitalievich Director General

附件二：本部與俄羅斯科學基金會雙邊合作協定附約

ADDENDUM TO THE AGREEMENT
BETWEEN
MINISTRY OF SCIENCE AND TECHNOLOGY, TAIWAN
AND
THE RUSSIAN SCIENCE FOUNDATION
ON
SCIENTIFIC AND TECHNOLOGICAL COOPERATION
ON A COORDINATED GRANT COMPETITION FOR CONDUCTING BASIC AND APPLIED SCIENTIFIC RESEARCH

Based on the Agreement between The Ministry of Science and Technology, Taiwan (hereinafter referred to as "MOST") and The Russian Science Foundation (hereinafter referred to as "RSF") on Scientific and Technological Cooperation (hereinafter referred to as "Agreement"), hereinafter collectively referred to as "Parties" and individually as "Party", signed in Moscow on 24 September 2015, the Parties have agreed on the following:

Article 1

1.1. The Parties shall jointly coordinate grant competition to conduct basic and applied research by international research teams (hereinafter - «Competition»).

1.2. Grants shall be provided by the Parties for the implementation of science and technology projects (hereinafter referred to as «Projects»), for conducting basic and applied research with implementation term up to 3 years, in the following fields of knowledge:

Mathematics, computer and systems science;
Physics and space science;
Chemistry and materials science;
Biology and life sciences;
Basic research for medicine;
Agricultural sciences;
Earth sciences;
Humanities and Social Sciences;
Engineering.

1.3. The Competitions shall be open for participation of the international research teams, and each of them should consist of Taiwanese and Russian researchers and support staff, when necessary.

Article 2

2.1. A grant of the MOST is provided for Taiwanese researchers, representing the part of an international research team, conducting basic or applied research on the basis of a(n)

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Taiwanese scientific organization, recognized by MOST, in accordance with the results of the Competition, held on conditions stipulated by MOST.

2.2. A grant of the RSF shall be provided for Russian researchers, representing the part of an international research team, conducting basic or applied research on the basis of a Russian scientific organization, Russian educational institution of higher education or international (interstate and intergovernmental) science organization located within the territory of the Russia on the terms of gratuitousness and irrevocability of the grant, in accordance with the results of the Competition, held on conditions stipulated by the RSF.

2.3. Funding provided for one grant of MOST shall amount from 2 up to 3 million Taiwanese dollars annually. Funding provided for one grant of the RSF shall amount from 4 up to 6 million Russian rubles annually.

2.4 Projects supported by the grants provided by the RSF in accordance with the results of the Competition shall not seek funding from other sources for the entire period of implementation.

2.5 The annual amount of funding for each Project may be altered in accordance with the results of the review of the submitted reports concerning the implementation of the Projects and proper use of grants by their recipients, or in accordance with the changes in the budget of either Party.

Article 3

3.1. The first Competition shall be announced simultaneously by the Parties in November 2015. The Competition afterwards shall be announced simultaneously by the Parties in May of the following year.

3.2. The application with proposals shall be submitted jointly by two Principal Investigators (hereinafter referred to as PIs), one from Taiwan and one from Russia, to the Parties before deadline (within four (4) months after the announcement of the Competition), in accordance with the regulations of MOST and RSF, respectively.

3.3. The applications with proposals, submitted by PIs, shall contain identical Common English Form, agreed upon by the Parties,

Article 4

4.1. The Parties shall carry out review of the proposals submitted to the Competition in accordance with the regulations established by the Parties.

4.2. The Review Council of the MOST and the Review Council of RSF shall prepare rankings of proposals, which include three categories:

Category A: Projects to be funded with priority.

Category B: Projects to be funded if funding is available.

Category C: Projects not expedient to fund.

4.3. The Parties shall reach a joint decision as to the winners of the Competition within six (6) months after the deadline for submissions.

4.4. The Parties can annul the grant of Projects in accordance with the regulations of the Parties upon joint decision by the Parties. In case of termination of the grant by either Party, the other Party shall be entitled to continue funding as a unilateral research project.

Article 5

Issues concerning intellectual property rights shall be dealt according to the Article 4 of the Agreement of the Parties.

Article 6

6.1. The Addendum shall enter into force on the date of the signing by the Parties and shall be valid for the period of three (3) years. Thereafter, it shall be automatically prolonged for consecutive periods of three (3) years, until it is annulled by either Party upon a six (6) months written notice.

6.2. The Parties are not responsible for partial or complete failure to fulfil obligations under the Addendum in the case of force majeure.

6.3. The Parties shall timely inform each other about matters of dispute and difficulties with the implementation of the Projects. All issues and disputes related to the implementation of the Addendum shall be resolved by mutual agreement of the Parties.

6.4. The Addendum does not create rights and obligations governed by international law.

Signed in Moscow on 24 September 2015, in two original copies, each text being equally authentic.

On behalf of the Ministry of Science and Technology, Taiwan

LIN Yi-Bing
Deputy Minister

On behalf of the Russian Science Foundation, Russia

KHILKOV Alexander Vitalievich
Director General

附件三、俄羅斯科學基金會發布與本部簽署合作協定新聞

RSF | Russian Science Foundation

TRANSPARENCY. COMPETENCE. RESULT.

ABOUT THE FOUNDATION NEWS INFORMATION FOR RESEARCHERS DOCUMENTS CONTACTS

RSF and the Ministry of Science and Technology of Taiwan signed a cooperation agreement

tags: RSF news

The agreement provides legal framework for future joint calls of proposals in different fields of fundamental and exploratory research.

On September 24, 2015 RSF Director General Alexander Khlunov and Deputy Minister Prof. Y.B. Lin signed an agreement on cooperation between the Russian Science Foundation and the Ministry of Science and Technology in Taiwan.

"Science has no boundaries. According to empirical studies, international cooperative projects in research in terms of efficiency are 2-3 times better than the national projects. In this context, we have absolute priority in the development of international cooperation. The Russian Science Foundation is proud of having more than 150 leading foreign scientists funded by RSF as well as maintaining the world-class peer-review panel involving more than 800 international experts ", - noted in his welcoming speech, Alexander Khlunov.

Deputy Minister of Science and Technology, Taiwan Prof. Y.B. Lin stated that the cooperation between the two countries had been at different levels over the past 10 years of cooperation. However, the small size of grants for research left to be desired. With the establishment of RSF the sufficient financial support has become accessible. "I very much hope that our cooperation will generate successful fundamental and innovative results", - said the Deputy Minister.

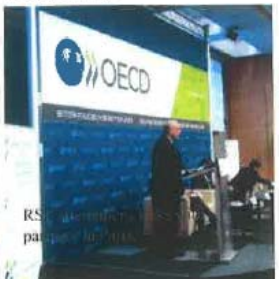
The agreement provides ground for the future joint calls of proposals to support international cooperation in the field of fundamental and exploratory research. The first call is planned to be announced as early as in November this year. The results will be announced next summer. The second call will be open in May 2016 with winners announced by December 2016. The process of project evaluation will be based on the principle of "two keys" when both parties have equal rights in decision-making.

News

ALL NEWS

21 December 2015

21 December 2015



14 December 2015

RSF has funded more than 200 projects in 8 priority areas of research

02 December 2015

附件四、本部會俄羅斯科學基金會合作研究計畫 **2015** 年徵求說明

公開徵求 2016 年臺俄(MOST-RSF)雙邊
創新科技領域合作專題研究計畫

2015.11.13

本部長期推動臺灣與俄羅斯兩國科學與技術之合作研究，自 2004 年起陸續啟動與俄羅斯基礎研究基金會（RFBR）、俄羅斯人文科學基金會（RFH）、俄羅斯科學院西伯利亞分院（SB RAS）及俄羅斯科學院東分院（FEB RAS）等四個聯邦層級研究補助機構共同支持臺灣與俄羅斯兩國人員合作研究計畫之補助方案，有效推進我國基礎科學研發能量！ 日前本部與俄羅斯科學基金會（RSF）新簽有合作協議，則希望更能全面性拓展與俄羅斯合作研究。

RSF 係為俄羅斯聯邦政府於 2013 年底特別立法成立之基金會，由總統任命該基金會之董事、理事委員及執行長等組織成員，其主要任務在支持前瞻創新之基礎與應用研究計畫，旗下分有 9 大研究主軸，提供小至個人型研究、大至世界級實驗室成立之經費支助，2014 年補助超過 1100 件計畫案，補助金額每件每年期在 10-50 萬歐元間，國際合作部份則為 10-20 萬歐元，2016 年度經費預算為 3.746 億歐元(約為新台幣 130 億)。本項由本部與 RSF 雙方之合作，與本部 2014 年 3 月升格為科技部所積極推動我國前瞻研究及產學鏈結任務相符，並與現有其他四個機構之合作方向有相當區隔，且可望提升臺俄團隊間之合作研究層次！

此次係首度徵求本部與俄羅斯 RSF 議定之雙邊合作計畫。此類雙邊合作專題研究計畫案，作業程序上必須由臺灣及俄羅斯各一位主持人組成研究團隊，針對共同之研究主題，以相同計畫名稱分別向本部及 RSF 提送申請書，經由本部與 RSF 獨立審查與共同審議通過後，分別補助己國所需研究經費。俄羅斯主持人必須依 RSF 之線上申請作業規定辦理，我方主持人則依本部專題研究計畫之線上申請作業規定辦理。 而本項臺俄團隊合作之主題與內容，則強調應為前瞻、高端之創新研究議題，鼓勵進行應用性或跨領域之整合研究，亦要求雙方主持人能落實計畫案之期中執行規劃，同時臺俄團隊應承諾盡力產出高品質研究結果。

臺灣方面申請作業重點說明如次---

一、 計畫主持人資格：須符合本部專題研究計畫申請人資格。

二、作業時間：

（一） 申請日期：即日起~2016年03月15日（以申請機構系統送出為憑）

（二） 審查結果公告日期：2016年7月底前

三、計畫執行日期：2016 年 08 月 1 日~2019 年 07 月 31 日（為 3 年期合作計畫）。

四、合作領域： 不限領域，本部及 RSF 涵蓋之各領域學門均可申請。 (本部鼓勵與俄方已有多年合作經驗或是本身已有大型計畫需進行加值性合作之國內團隊能考量提出本案申請。)

五、補助項目及額度

（一）項目：執行本項合作研究計畫所需之我方研究經費，包括業務費(含研究人力費及物品耗材費)、設備費、出國差旅費及管理費等。

（二）額度：每件計畫單年度以**新台幣 3,000,000 元為限** (俄方為 6,000,000 盧布)

六、申請方式

（一）完整計畫書提出採線上作業方式，計畫主持人請依循本部專題研究計畫之申請程序，於線上系統填列計畫申請書。部份重點包括：

i. 至本部網站(http://www.most.gov.tw/) 首頁「學術研發服務網登入」處，身份選擇「研究人員(含學生)」，輸入申請人之帳號(ID)及密碼(Password)後進入。

ii. 在「學術研發服務網」之學術獎補助申辦及查詢內「專題計畫」工作頁下第一項"專題研究計畫"點入後，選擇「雙邊協議專案型國際合作計畫(Joint Call)」進入個人基本資料畫面，若無修改，確定後即進入本系統之「主畫面」，從主畫面視窗上左上方點選新增，即可新增一筆。

iii. 進入表格製作時，「計畫歸屬」請依計畫研究主題及所屬學門勾選對應之學術司（勿直接選"科教國合司"）。

iv. CM01 申請表內「本計畫是否為國際合作研究」欄位應勾選"是"；並須於表格設定處加勾選 IM03。

v. 除一般專題計畫申請所需之各項 CM 表及相關學術司規定文件，亦應填具「國際合作研究計畫表」IM01 與 IM02，附件[vii]以 PDF 檔於 IM03 處上傳。

vi. IM01 表之「合作國家」請選「與單一國家合作」，「國別」請選填「391-俄羅斯」（勿誤填「白俄羅斯」、「蘇聯」等）。「外國合作計畫經費來源」為本部雙/多邊協議機構，並選填「俄羅斯科學基金會(RSF)」。

vii. 表 IM03 屬檔案附錄之上傳功能鍵，請將合作之俄方主持人擬向 RSF 提出本項申請案之英文計畫書、及其履歷與著作目錄等資料合併為單一 PDF 檔案後上傳至系統。未上傳者視為申請資料不全。

（二）計畫申請案須經主持人任職機構於系統中彙整後送出，依本部「專題計畫線上申請彙整」作業系統製作及列印申請名冊（由系統自動產生，並按計畫歸屬司別列印）一式二份函送本部；機構發文日應在 2016 年 3 月 18 日前。

註：俄方 RSF 公告文件及申請表如附，公告新聞：http://rscf.ru/en/node/1510

七、計畫核定：本項合作計畫須經本部及俄羅斯 RSF 雙方獨立進行學術審查，復經臺俄雙方單位共同遴選通過予以補助。補助件數依申請件數及審查結果而定。

八、計畫經費撥付、結報及報告繳交：前述相關作業均依本部專題研究計畫作業要點規定執行。

九、注意事項

1. 計畫件數之申請與核給規定：本項臺灣與俄羅斯合作之研究計畫若經雙方補助，並不列入科技部一般專題計畫件數計算；惟計畫主持人同年度執行此類「雙邊協議專案型國際合作計畫(Joint Call)」仍以 2 件為限，倘計畫主持人於 2016 年已執有 2 件此類計畫者，不得再提出本項計畫申請；若計畫於受理審議過程中，主持人另獲此類計畫達 2 件時，本部將不再核予此第 3 件。且每位主持人就本項與俄羅斯 RSF 合作之計畫申請以 1 件為限；在本部與俄羅斯 5 項協議下，同年度得執行之合作計畫亦以 1 件為原則。

2.雙方計畫主持人在提出完整計畫書前，應經過詳細溝通及討論，合作內容應經雙方同意，雙方申請之計畫名稱應相同。另，本項係屬「雙邊」計畫，應將我方研究人員訪俄或俄方來臺參與研究視為彼此重要之合作活動並列入年度規劃中。

3.臺俄雙方所需之合作研究經費，由科技部及俄羅斯 RSF 分別補助，兩方經費需求無須相同、但大致相等，我方計畫主持人提出之專題計畫申請書其經費編列(表 CM05)僅為我方團隊所需；請勿編列俄方來臺接待費用。

4. 本部鼓勵我國年輕研究人員參與此項臺俄雙邊合作研究，並赴俄羅斯至合作單位進行短期研究訪問(不得為第 3 國)，相關規劃請於計畫書中敘明，所需得編列於出國差旅費項下。

5. 本項計畫合作案需有俄方計畫主持人向俄羅斯 RSF 及我方計畫主持人向本部同時提出計畫申請，雙邊案始予成立；含以下任一情況的申請案恕不受理--

＊只有單方提出計畫申請書；

＊超過規定之申請截止日；

＊申請資料不全；

＊未依本部專題作業規定提出。

6.本計畫之研究成果智慧財產權比照本部補助專題計畫之研發成果歸屬計畫執行單位。若有結合臺俄雙方共同產出之研究成果，其智慧財產權得個案協商處理方式，建議合作倘涉有相關情事，雙方主持人/共同主持人應事先議定，必要時可共同簽訂相關計畫合約書。

附件五、俄羅斯科學基金會公告與本部合作徵求研究計畫資訊

RSF and the Ministry of science and technology of Taiwan announced a joint call of proposals

tags: RSF news

The Russian Science Foundation launched a call of proposals jointly with the Ministry of sciene and technoloy, Taiwan to support international research teams.

This call is based on the principle of "two keys" - both sides have an equal right in determining the winners.

The grants will be provided to implement the basic and exploratory research in 2016 – 2018 in 9 branches of knowledge.

The research grant of the RSF will amount from 4 to 6 million rubles annually.

The condition of funding from RSF is the obligation of the research team to make the results of their research public.

Printed copies of applications will be accepted until March 15, 2016 at the address: Moscow, GSP-2, 109992, Solyanka str., 14, p. 3.

The results will be announced before July 1, 2016.

The more detailed information is available in the section "Competitions".

News ALL NEWS

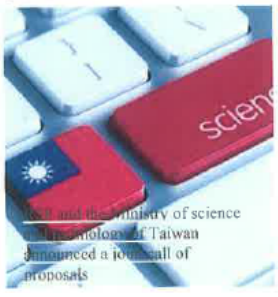
21 December 2015

21 December 2015

14 December 2015

RSF has funded more than 200 projects in 8 priority areas of research

02 December 2015



RSF and the Ministry of science and technology of Taiwan announced a joint call of proposals

附件六、俄羅斯高等經濟學校對林次長一平專訪稿

HIGHER SCHOOL OF ECONOMICS
NATIONAL RESEARCH UNIVERSITY

Interview of Dr. Yi-Bing Lin, Deputy Minister of Science and Technology of Taiwan, to the Web Portal of National Research University Higher School of Economics

September 24, 2015

Moscow, Russia

'If you want to collaborate with a foreign country, you must learn its history and culture first'.

On September 24, 2015, a delegation of the Ministry of Science and Technology of Taiwan (MOST) visited HSE Institute for Statistical Studies and Economics of Knowledge (ISSEK). Just before this visit, MOST signed an agreement with the Russian Science Foundation (RSF) for jointly supporting bilateral research projects. Therefore, the MOST delegation wants to look for outstanding Russian academic units for Taiwanese researchers to collaborate with. HSE, being one of the best Russian universities in the sphere of economics, statistics, foresight and science policies, is certainly on top of MOST's visit list. With the goal to identify perspective areas of cooperation, researchers of HSE and MOST delegates shared their unique fields of expertise and discussed key trends and instruments of Taiwan's and Russia's state policy on international cooperation in science, technology, and industrial innovation. During the visit, Dr. Yi-Bing Lin, Taiwan's Deputy Minister of Science and Technology, gave an interview to the HSE news portal, in which he cited Karl Marx's theory, while talking about big data and futures studies.

— *You work at the cutting edge of IT research. Could you please tell us what we should expect in the near 'digital' future?*

— My primary area of research is telecommunications and, more specifically, mobile phones. I'm a pioneer in this area. As for its future, we now witness fast growth of the so-called 'Internet of Things', or IoT. A huge variety of devices (mobile and other) have a lot of tiny sensors, which collect raw data. When you send these data back to the server, there is a lot of information to analyse. How can we use the data collected by IoT devices wisely? I believe that whoever masters the skill of big data analysis, will be the winner. Big data is becoming something essential, and this won't change.

A serious problem is that some countries, for example, in Africa, don't master this skill. If you

don't master the big data, you'll be on the poor side of the curve. Countries that are doing so, however, learn to analyse big data and, as a result, are able to do business anywhere and beat their competitors.

Take Marx's theory about capitalism. The rich people become richer, and the poor people become poorer. You see that this is exactly what is happening in the world and, I believe, in Russia as well. By the end of the 20th century, Marx's theory was no longer popular, but today, people think about his theory again in order to find new ways to promote justice. How can we solve the problem? How do you create a fortune? You go to the stock market, and you make predictions. If you're not smart enough, you lose a lot of money. Rich people always have better tools than you. The only thing you can do is to train those poor people to become rich. They should use their knowledge, and to learn how to use big data tools.

— *What do you think about futures studies? Are foresight studies given high priority in Taiwan?*

— You have to do foresight. Otherwise, you'll be in very serious danger. Foresight studies should underpin government policy, in order to allow for smart allocation of resources. If you don't do it right, you're in a big trouble. That's why these studies are very important. Foresight can help prevent certain problems, as it gives you an initial solution. However, when you try to implement this solution, you have to adjust it, because the environment is changing dramatically.

Within the Ministry of Science and Technology of Taiwan, there is Foresight Division, which is responsible for science and technology policy. It has a large pool of experts. One such group consists of professors. We can use their ideas, which are typically not critical but innovative. On the other hand, we have experts from the industry, who help us adapt academics' ideas to the challenges of the real world. In addition, we also have Strategic Review Board (SRB). SRB consists of famous experts in different technology areas. They review the plans proposed by Foresight Division and make further adjustments. Once SRB has agreed on a policy, the Cabinet orders the Ministries to get involved and to contribute to policy implementation.

— *You are a scientist and a public officer, all at the same time. Are there any benefits from combining these two roles? How does your scientific background help you in your political work? And does your public officer position influence your research?*

— I work for the government five days a week. On Saturdays and Sundays, I work with students. I don't consider teaching as a job. It's just something I love to do. I also like my governmental duties as well; it's not just a job for me. I joined the government because I think this is something I should do. When you enjoy what you're doing, you feel that it is worth it. But you don't sleep that much.

As for the benefits, scientific training gives you a logical view. When we study for PhD, the main purpose is not to learn a technology. The most important thing is to learn how to think logically.

Once you do it, you can do all kinds of research. And thanks to this training, when I take a look at different kinds of research I'm going to sponsor, I know exactly how to do it in order to get the best result.

And, of course, it's a mutual process. When I try to come up with a policy for an area of research, I get feedback and I need to adjust my decision. And through this process, I learn. A good thing about being a government officer, a sponsor for all kinds of research projects is that you see different aspects from different research areas. And I learn that there's a different way to do research. This feedback helps me a lot. And I think: can I apply that philosophy to my own research? In most cases, the answer is 'yes'. This way you become more and more flexible.

— *Taiwan and Russia cooperate in a variety of S&T areas, both in basic and applied research. How fruitful is this partnership, in your view?*

— For the past ten years, we've been collaborating successfully with the Russian Foundation for Basic Research, Russian Foundation for Humanities, as well as the Siberian and Far Eastern Branches of Russian Academy of Sciences. This year, we've moved forward with the Russian Science Foundation. We are making new investments because the previous cooperation experience has been positive. One area for collaboration between Russian and Taiwanese researchers is medical devices. This is an example of how we can transform professors' research to industrial use. We do it a lot within Taiwan. But there is very good innovation research in Russia. We've already seen very fruitful results from our cooperation. There are a lot of good papers. And we are trying to investigate the papers and see whether we can transfer these studies to industrial use. Sometimes, ideas come from Russian scientists, and Taiwanese professors do the implementation. Sometimes, it's the reverse.

— *How do you see the collaboration between our countries in five or ten years?*

— As I said, everything has to be adjusted. For the past ten years, we had a very solid mutual trust to do research and to collaborate. This is the most important thing: if you don't have mutual trust, you can't collaborate. Right now, with the Russian Science Foundation, we have a three-year programme. This morning, I talked to RSF director, Alexander Khlunov. I told him that if after three years of cooperation, both sides decide to invest more resources, it will mean that we have been successful.

We think about Taiwan-Russia cooperation from a strategic perspective. It's important for us to collaborate with your country. If you really want to collaborate with a foreign country effectively and to come up with a good programme of partnership, you must learn its history and culture first. As a person in charge of Taiwan's international collaboration policy, I put a lot of effort to learn about Russian history and culture in order to strengthen our partnership.