出國報告（出國類別：國際會議）

2012 年台法與台俄雙邊年度活動及兩國科研、創新機構開拓訪問

服務機關：行政院國家科會委員會
姓名職稱：賀陳副主任委員弘
國合處林處長宗泰
國合處鄭秘書旭峰
國合處陶副研究員正統
派赴國家：法國、俄羅斯
報告日期：101 年 12 月 24 日
出國時間：101 年 11 月 25 日 ~
101 年 12 月 6 日

摘　要

本次國科會賀陳副主委弘與國際合作處林處長宗泰等赴歐訪問係依本會與法國及俄羅斯之協議單位所議定年度規劃活動整併辦理，同時，安排與科研單位進行開拓性的參訪，順利並圓滿達成多項任務。

在法國部份，包括：（1）主持台法科技獎頒典禮及酒會，（2）拜會法國Soultz-sous-Forets市-了解此跨法德瑞等多國合作並由歐盟與法國環境暨能源管理署（ADEME）所支持之歐洲地熱能源計畫新一代試驗系統。（3）拜會法國自然科學博物館(MNHN)-雙方討論可能共同推動之合作方案。（4）參與5th台法前鋒科學論壇PGM期中會議，議定本屆4領域主題。（5）拜會法國中小企業創發補助融資集團(OSEO)。

在俄羅斯部份，包括：（1）與俄羅斯基礎研究基金會進行年度雙邊會議，不僅聽取13位俄方計畫主持人報告研究計畫執行進度，及追認今年7月間通過14件雙邊研究計畫案、討論明年工作時程及跨領域合作機制。（2）與俄羅斯人文基金會工作會談，簽署本年工作結論。（3）拜會俄羅斯第一學府國立莫斯科大學、聯邦政府Skolkovo大型科研創新計畫、聖彼得堡經濟特區與綠城經濟特區及俄國科技公司。

目次

壹、緣起及目的

國科會一向致力國際合作業務之推動，目前與 42 個國家之科研單位及國際組織簽署 104 項協議，其中，在歐洲部份的國家中，以與法國的科研合作最為長久、完整、方案多元，與俄羅斯的共同補助之合作計畫數及團隊則為最多，每年都會與協議機構安排會面進行年度規劃、審議計畫申請案、舉辦學術活動及交換資訊等，維持良好互動及促進科研活動。

此次訪問活動前半段訪法國、後段赴俄羅斯；訪團一行人第一天剛抵法國，即兵分兩路，部份前往 Soultz Sous Forêt 參訪，了解此跨法德瑞等多國合作並由歐盟與法國環境暨能源管理署（ADEME）所支持之歐洲地熱能源計畫新一代試驗系統，並尋求學習及技術引進之可能性，部份則參與台法前鋒論壇期中會議，接下來兩天下午均舉辦與台法科技獎頒獎活動，上午則分別至法國 OSEO 與自然科學博物館參訪。第四天一早則搭機到聖彼得堡進行後段行程。

本會自 2004 年底與俄羅斯基礎研究基金會（Russian Foundation for Basic Research, RFBR）簽署合作協定副約，雙方合作已邁入第 8 年度；以往雙方在 3-4 月各自進行計畫及研討會初審，5 月初交換比對審查結果，5-6 月間召開雙方合作年會，選定補助計畫並討論改進方案與提出新合作構想。

依雙方輪流辦理原則，今年應在莫斯科召開。然而，5 月間因我方長官行程無法配合，故本次年會日期經雙方協調更改至 12 月初，銜接在賀陳副主委弘及國合處林處長宗泰訪法行程之後。

我團並希望藉此行了解俄羅斯在科技創新之發展情形，爰請駐俄科技組吳組長石乙、RFBR 及其他單位協助安排拜會俄聯邦特別經濟特區（其設立目的類似我國科學園區）及前任總統梅德韋傑夫通過之大型科研創新計畫”Skolkovo”總部。

此外，本團亦拜會本會另一位於莫斯科之協議單位 – 俄羅斯人文科學基金會（Russian Foundation for Humanities, RFH），雙方確認今年新增之研究計畫清單。

貳、過程

甲、法國訪問行程

法　國 Nov. 26 – Nov. 29, 2012 in Paris	
Nov. 25th **Sunday**	**23:50　賀陳副主委搭長榮班機 BR087 赴巴黎** **國合處林處長宗泰及承辦人陶正統陪同**

Nov. 26th Monday	06:40 抵巴黎機場 CDG (Aerogare 1) 組長及張秘書接機後— A. 副主委 [由正統陪同] 前往 CDG Aerogare 2 09:35-10:40 搭乘法國航空 AF7760 前往 Strasburg 11:10 [駐法科技組秘書桐恩於機場接機與陪同] 搭計程車至 GEIE Exploitation Minière de la Chaleur Add : Route de Soultz in KUTZENHAUSEN (Platform GPK1), Soultz Sous Forêt 12 :30-13:30 Lunch 13 :30-15:00 Detailed presentation of the Soultz geothermal project 15 :00-15:30 Visit of the plant 15 :30- 搭車離開 Soultz Sous Forêt 17 :55-19:10 搭乘法航 AF7315 前往巴黎奧利(ORLY)機場 20 :10- Dinner hosted by Cnrs (與台灣代表團會合) Restaurant : Le Congrès Auteuil Add : 144 Boulevard Exelmans 75016 Paris B. 處長 [由吳組長陪同] 前往 CNRS 總部 10:15-18:30 The 6th FT-TW FoS Interim Meeting 處長代表國科會於開幕致詞 14:30-16:30 NSC—BFT PHC Orchid Selection Meeting Meeting Room K S1 217 Venue : CNRS Add : 3 Rue Michel-Ange Paris 19 :00-21:00 Dinner hosted by Cnrs Restaurant : Le Congrès Auteuil Add : 144 Boulevard Exelmans 75016 Paris 下榻旅館: Hotel TROCADERO LA TOUR **** PARIS 5 bis, rue Massenet - 75116 PARIS – FRANCE Tel + 33 (0)1 45 24 43 03

	Fax + 33 (0)1 45 24 41 39 **http://www.trocadero-la-tour.com/pages/hotel_1.html**
Nov. 27st Tuesday	**09:00 出發前往會議地點** **10:00-11:30 Visit OSEO** - **call on Dr. Jean-Jaques Yarmoff, International Partnerships Director** **Add :** 27-31, avenue du Général Leclerc 94710 Maison-Alfort Cedex, France **Tel :** 01 41 79 96 01 **12:00-14:00 Lunch Meeting hosted by Ambassador Lu (possibly with Meet Ms. Béatrice Chassaing, Conseillère adjointe de coopération et d'action culturelle of BFT)** **Restaurant: La Ferme Saint Simon** **Add : 6 Rue de Saint-Simon 75007 Paris** **14 :00-18:00 法蘭西學會自然科學院((Adadémie des Sciences))年度頒獎大典** **Add : 23 quai de Conti 75006 Paris**
Nov. 28nd Wednesday	**09:00 出發前往參觀地點** **10:00-12:00 Visit Natural History Museum** - **call on Dr. Gilles Boeuf, President of the Museum** - **visit research unit** **12 :30-14:30 Lunch** **15 :00-17:00 駐法國代表處拜會呂大使慶龍** **18:00-20:00 台法科技獎頒獎典禮暨酒會** **副主委與呂大使於典禮致詞** **Venue: 自然科學院** **23 quai de Conti 75006 Paris** **20:00-22:00 副主委與呂大使共同主持晚宴** **Restaurant: 巴黎正陽樓餐廳** **Add : 25 Avenue Pierre 1er de Serbie 75116 Paris**

Nov. 29rd Thursday	**07:20　旅館 check-out** **07:30　前往機場** **10:20-16:35　從巴黎戴高樂機場 (CDG Aerogare 2 Terminal E) 搭乘法航 AF 2252 至聖彼得堡(LED)** ● **RFBR 同仁、科技組吳組長及鄭秘書到機場接陳副主委訪團** 備註：國合處法國業務承辦人正統從巴黎戴高樂機場 (CDG Aerogare 1)搭乘長榮 BR088 (11:20-07:05+1) 班機返國

6th FT-TW FoS Interim Meeting

本會以法國在臺協會（BFT）為對口，自 2008 年合作展開「台灣-法國前鋒科學論壇」，並於 2011 年續約辦理第 5 及第 6 屆，此 2 屆法方合作夥伴包括法國在台協會（BFT）、法國國家科學研究中心（Cnrs）、法國高等工程師學院校長聯盟（CDEFI），以輪辦原則，第 6 屆由法方主辦。

本論壇係為一個跨領域主題交流活動，提供並鼓勵台灣與法國兩國各 22 位 45 歲以下具研究潛力之年輕科學家對話交流之平台，主題包括物理科學、應用科學、生命科學、人文社會科學等四大領域；此年度之系列研討會，包括每年 11 月之 PGM 期中會議及次年 6 月之正式論壇，此次 11 月 26 日所舉行之期中會議，雙方將有 4 領域之 PGM (Planning Group Member)、活動籌辦與經費補助單位代表共同出席，目的在議定 6 月大會之 4 大領域主題與作業時程。

法國 OSEO

OSEO 為法國協助中小企業創新與發展專案補助研發融資集團，與我經濟部技術處於本（2012）年 2 月於駐法代表處共同簽署合作備忘錄，旨在促進台法企業與組織之科技交流與創新合作。我駐法科技組曾於本年 4 月時聯合法國國家科學研究署（ANR）及 OSEO 單位共同籌辦「從 TecSan 前端研究到生醫產業合作」研討會，期待在國科會「產學大小聯盟」的框架下，藉由過去與 ANR 健康技術團隊合作研究計畫（TecSan）的經驗，前往 OSEO 了解在生醫產業經濟國際合作之可能。

此次 11 月 27 日的拜會，雙方對如何透過我科學園區進行跨國產學合作之可能機制以及如何橋接一國中小企業與彼國大型企業間之合作等議題有相當討論。

台法科技獎

台法科技獎係依據自然科學院與國科會所簽署的「台法科技基金協議」所設

立，自 1999 年起開始辦理，本（2012）年度係為第 14 屆，今年的台法科技獎頒獎領域為生命科學（涵蓋生物、醫學、化學、農學），得獎團隊為國立臺灣海洋大學張清風校長與法國巴黎第六大學（UPMC）、國家科學研究中心（Cnrs）、巴黎自然歷史博物館（MNHN）Sylvie Dufour 教授。

依往例，本項台法科技獎頒獎酒會，相關活動包括：（1）2012 年 11 月 27 日下午參加法蘭西學院之年度大獎會議，進行觀禮；及（2）11 月 28 日下午 6 時假自然科學院舉行台法科技頒獎活動與酒會（議程如下表），此由國科會及法蘭西學院為雙方主人，並由代表處共同主辦；得獎人將獲得獎金 38200 歐元。會後則會邀請法方科學院參與人員（如院長、終身秘書、審查委員及承辦人）、我方代表團等進行小型餐會。

Cérémonie de la remise solennelle du Prix

de la Fondation scientifique franco-taïwanaise

le 28 novembre 2012 à 18 heures

Salle des Cinq Académies
Palais de l'Institut de France
23 quai de Conti – 75006 Paris

2012 年 11 月 28 日（星期三）下午 6 時

台法科技基金獎

頒獎典禮程序

Allocution de M. Philippe TAQUET
自然科學院副院長 M. Philippe TAQUET 致辭

Allocution de M. Hong HOCHENG
國科會賀陳副主委弘致辭

Allocution de M. Jean-François BACH
自然科學院 Jean-François BACH 終身秘書致辭

Allocution de M. Michel Ching-Long LU
駐法代表處呂大使慶龍致辭

Présentation des lauréats par M. Jean-François BACH

得獎人介紹 : Jean-François BACH 終身秘書

Remise du Prix par MM. Jean-François BACH et Hong HOCHENG à Mme Sylvie DUFOUR et M. Ching-Fong CHANG
國科會賀陳副主委弘與 Jean-François BACH 終身秘書頒獎予張清風校長暨 Sylvie DUFOUR 教授

Réponse de Mme Sylvie DUFOUR et M. Ching-Fong CHANG
得獎人張清風校長暨 Sylvie DUFOUR 教授致答辭

Cocktail
酒會

法蘭西自然科學院副院長 P. Taquet(右)頒發獎牌予 2 位台法科技獎年度獲獎人並合照。

	
法蘭西自然科學院終身秘書 Bach(左立者)致贈獎金予台法科技獎年度獲獎人。	2012 台法科技獎得獎人 Dufour 女士受獎後發表得獎感言。

法國 MNHN

法國自然科學博物館(MNHN)創於 1635 年，位於巴黎市的植物園內，原為御用藥草園，1793 年成為國立自然史博物館，為一公立科學文化專業機構，受高等教育暨研究部與生態部的管轄，在全法國設有 14 處分部，負有(1)基礎研究暨應用、(2)保存並管理收藏品、(3)教育、(4)傳遞知識、(5)鑑定五項主要任務。

博物館下設四個部門及七個研究處。參與之國際合作，主要進行生物多樣性保護、永續發展、向大眾傳遞知識等三大活動，領域涉及(1)蒐藏、(2)生物多樣性與其保護研究、(3)演化與發展機制研究、(4)熱帶環境研究、(5)博物館學研究等五大領域。

此次拜會緣於法蘭西學院自然科學院副院長 Taquet 將於 2013 年 1 月後新任院長，渠於就任前於 11 月來台訪問時，以其多年前曾任 MNHN 院長之經驗，認為與我國有多項合作機會；此行於 11 月 28 日的參訪，拜會現任館長與國際事務長，雙方討論合作推動多項合作，包括該博物館與我台中科博館之館際合作(展場設計與人員訓練)、索羅門及南亞海域種子保育計畫，及台灣海洋船與法國海洋工作站之海洋觀測與研究計畫等。

2013/2014 台法(NSC-BFT) 幽蘭審查會議

本會與法國在台協會於 2006 年簽署合作協議後共同提供人員互訪計畫及雙邊研討會之補助，目前已執行 7 年，並已補助 65 件二年期計畫與 27 場研討會。

幽蘭計畫審查會議依輪辦原則，今年在法國舉辦，此次配合台法前鋒論壇期中會議同時舉行，故地點亦選擇在 CNRS 總部；本年度共收得 26 件計畫與 7 件研討為申請案，此次於年度會議中共同擇定 7 件人員互訪計畫與 3 場雙邊研討會。

乙、俄羅斯訪問行程

俄　羅　斯 2012.11.29-2012.12.02 in SPb (Saint Petersburg) 2012.12.02-2012.12.05 in Moscow	
Nov 28, Wednesday	駐俄科技組吳組長、RFBR 同仁 Ms. Shevereva 先抵達聖彼得堡 國合處鄭秘書自台北經首爾、莫斯科抵達聖彼得堡 行前工作會議
Nov. 29 Thursday	Ms. Shevereva, 吳組長、鄭秘書前往 LED 機場 16:35 賀陳副主委、林處長 arrive in SPb from Paris AF 2252 CDG –> LED (10:20-16:35)
Nov. 30th Friday	拜會科技公司參觀工廠、拜會 Saint Petersburg SEZ, Noidorf Area Head of Administration – Melnikov Oleg Vasilievich, one of his Deputies and 2 or 3 managers
Dec. 2nd Sunday	15:00 Return to Moscow by express “Sapsan” No. 161A
Dec. 3rd Monday	俄羅斯基礎研究基金會年度會議 10:00- 12 :00 NSC-RFBR Annual Meeting (I) Reports by Russian PI’s, Presided by Prof. Gabibov Alexander Gabibovich 第一部分：13 位俄方計畫主持人報告研究計畫執行進度（報告名單如附件 1） 12:00-13:30 NSC-RFBR Annual Meeting (II) Bilateral Discussion, Protocol Signing 第二部分：追認今年通過 14 件雙邊研究計畫案（通過清單如附件 2）、討論明年工作時程及跨領域合作機制。 國合處林處長並簡報台灣計畫主持人之意見調查結果。簡報如附件 3。 15:00-17:00 Visit Vice President of Moscow State University, Academician A.R. Khokhlov 18 :30 Dinner, hosted by Ambassador Antonio Chen Invitees : V.Kvardakov, A.Sharov, S.Tsyganov, E.Rudtskaya

Dec. 4th Tuesday	RFBR representative- Kolchina Svetlana 10:00-12:00 Visit Skolkovo Innovation Centre (Headquarter in Krasnaya Presna) Lenihan Conor, Vice President of Skolkovo Foundation Shubin, Acting Director of IT Cluster Nikolai Suetin, Director on Science and Technology of IT cluster 14:30-17:00 Visit to Zelenograd SEZ and MIET (National Research University of Electronic Technology) Sergey V. Umnyashkin, Vice President, MIET 1830 Meeting with Russian Foundation for Humanities (RFH) 本會與俄羅斯人文基金會今年新增之 3 件計畫清單如附件 4 與會者：1. Yury L. Vorotnikov, Vice Chairman 2. Vasily P. Grebenyuk, Consultant (ex. Vice Chairman), 3. Andrey N. Blinov, Deputy Director, 4. Vladimir N. Zakharov, Head of International Division + ITRI, Sergey Siyanko, Ekaterian Mneva + RFBR' representative- Kolchina Svetlana
Dec. 5th Wednesday	RFBR' representative- Kolchina Svetlana Visit to Moscow Power Engineering Institute, MPEI 17:30 Deputy Chairman H. Hocheng leaves Moscow, airport SVO Flight number : KE924 17:40 Director General Willis T. Lin leaves Moscow, airport DME Flight number : JL442
Dec. 6th Thursday	09:10 賀陳副主委於仁川國際機場轉機 搭乘大韓航空 KE691 班機返國 11:00 賀陳副主委返抵臺灣 10:00 林處長於東京成田機場轉機 搭乘長榮航空 BR195 班機返國 13:05 林處長返抵臺灣

俄聯邦聖彼得堡經濟特區、綠城經濟特區簡介、"Skolkovo" 會談主要人員之基本資料分別如附件 5、附件 6 及附件 7。

參、心得

一、 臺灣在面對國家經濟發展之能源需求，以及國際減碳標準之強大壓力下，各方都在尋求臺灣能源的解決方案，由於臺灣天然資源貧乏，並沒有石油或天然氣等，依據專家說法，除了核能，碳封存及再生能源是另兩個可行方向，此外，臺灣為島國又有火山，風能及地熱發電亦均是我們的選項之一，不過，都不能作為主要的能源來源，換言之，我們可能無法投入大量的研發，最有效的作法是學習國外已發展成熟的技術，引進與合作，如此次至 Soultz 參訪，了解該項計畫主要技術發展及運作，相信對我國地熱研究發展有相當的幫助。

二、 本會與法國進行之幽蘭計畫執行多年，近年每年都會共同補助 10-15 件交流計畫及 3-5 場研討會，惟此次法方對部份計畫即使雙方審查結果俱佳，卻以"敏感性議題"為由(但不告知是那些議題)，不同意補助，且不以其他計畫遞補，結果只補助 7 件交流計畫與 3 件研討會，少了約三分之一！究其原因可簡單提出 2 個，一者為科研政策可能增加對法國自我強項領域之保護，另一者為歐洲整個金融與經濟復甦情況不佳，造成其科研預算緊縮。

三、 俄羅斯政府亟欲擺脫能源經濟困境，恢復蘇聯時期強大科研能量與工業製造，除在 2005 年通過聯邦經濟特區（分科研、製造、港口與觀光四類。其中科研經濟特區類似我科學園區）設立辦法外，在 2007 與 2010 年分別由總統主導，通過聯邦特別法令成立「RUSNANO，俄羅斯奈米國營企業」與「Skolkovo 創新計畫」，兩者皆投入令人乍舌的龐大預算；加上近年其他大型學術計畫，如聯邦大學設立（特別是位在海參崴的遠東聯邦大學）、Pharma 2020 製藥工業發展策略、MEGA Project 等等，據統計俄羅斯已是世界 top 10 spenders on innovation and science，顯示俄國政府推動知識經濟的決心。俄羅斯擁有優良學術傳統，近 10 年經濟成長率平均為 7%，躋身世界第六大經濟體(PPP)，專利數量迅速增加。

四、 Skolkovo 計畫之領導團隊泰半為外國（歐美）人士，董事會與顧問群盡為高薪延攬之跨國大企業 CEO 與諾貝爾獎得主；12 月 4 日當天接待本團之副總裁 Conor Lenihan 為前愛爾蘭科技部長，其他俄籍員工皆操流利英語。

五、 從參觀實驗室及工廠過程，可發現俄國研發人員基礎扎實、設備新穎，但從技術原型如何提高良率、轉成商品、自動化生產，還有許多困難；這應是我國廠商與俄合作的契機。

六、 本訪團全程之住宿、國內交通（市區租車、長途高速鐵路車票）皆由俄方協議單位 RFBR 負擔，並全程派員陪同；此係 2008、2010 年後，第三度由 RFBR 負擔當地支出，已漸成慣例。據悉我國各部會代表團前往俄羅斯與獨立國協國家，不論是食宿、交通之支出，甚少由對方出資補助，足說明

俄方對雙邊科技合作之重視。此係本會與駐俄代表處多年努力成果，而合作夥伴 RFBR 居間協調亦功不可沒。俄羅斯近年經貿、科研與國際影響力逐漸復甦，台俄雙方了解雙邊科技合作之互補互惠，此合作友誼與歷史時機值得重視與把握。

肆、建議事項

在後續與法國以及俄羅斯兩兩國間科研合作活動之進行，擬依此行會議決議持續推動或追蹤辦理。

甲、法國部份

一、 協助聯繫Soultz計畫主持人與我能源國家型計畫辦公室後續研討地熱鑽井可能之規範與技術引進以及合作研究。

二、 聯繫推動與法國MNHN在兩國海洋研究與全球種子保育之合作。

三、 與法國在台協會協同OSEO合作研議自法國71個競爭性聚落中心(Competative Cluster Center)中安排適當者組成代表團來台訪問，並協調我園區管理局協助辦理廠商進駐與媒合。

乙、俄羅斯部份

四、 目前 NSC-RFBR 計畫多為自由型；考量有限資源，可減少這類計畫數量，並推動跨領域、目標導向之合作。 建議續辦 2010 年曾進行之跨領域計畫徵求，並適當提高預算之經費，吸引優秀研究團隊參與。

五、 目前台俄三個計畫徵求 RFBR, SBRAS, FEBRAS 競爭甚為激烈，唯獨人文領域的 RFH 計畫徵求收件數量仍然偏低。建議應多鼓勵國內學者參與。

六、 目前俄國科研界薪資已高，廉價且優秀人才難尋；若欲吸引人才需採取更長期的做法，如台俄雙向之研究生/博士後暑期研究計畫。此類計畫不但促進俄國年輕學者認識台灣，亦可增加我國學生之視野。

七、 研究與 Skolkovo 科研創新計畫合作之可能性。

八、 俄國科研經濟特區對我科學園區之豐富經驗興趣甚高，建議考慮在俄方自付旅費與住宿的前提下，邀請前來參加竹科或南部科學園區舉辦之 workshop，並建立雙邊廠商資訊交換之管道。

附錄

附件一、第 6 屆「台法前鋒科學論壇」期中會議紀錄

Minutes of 6th FTFoS Interim Meeting

Paris, 26 November 2012

The 2012 French-Taiwanese Frontiers of Science Interim Meeting was held on Monday, November 26 at CNRS Headquarter in Paris.

Participating Planning Group Members:

Hsuan-Yi CHEN [Taiwanese Co-chair]
Professor, Department of Physics, National Central University
Chien-Neng LIAO
Professor, Department of Materials Science and Engineering,
National Tsing-Hua University
Shau-Ping LIN
Professor, Institute of Biotechnology, National Taiwan University
Thung-Hong LIN
Assistant Research Fellow, Institute of Sociology, Academia Sinica

Valérie PEZO [French Co-Chair]
UMR 8030 Genoscope, CEA
Fabienne GAUFFRE
Chemical Sciences Institute, Rennes University, CNRS
Charlie GOSSE
Laboratory for Photonics and Nanostructures, CNRS
Laurent PREVOT
Associate Professor, University Aix-Marseille

Other participants:

NSC

LIN Tsung-Tai

NTHU

WANG Wei-Chung

DOONG Ruey-An

CHENG Xin-Yi

CNRS

KHAN-MALEK Chantal

CDEFI

LERONDEL Gilles

Ministry of Higher Education and Research

MELKA Marc

CHATTON Dominique

Ministry of Foreign and European Affairs

CHASSAING Béatrice

PLATZGUMMER Emmanuelle

FoS – FoE Unit

Cécile MARGOSSIAN

Sylviane MARAIS

I. Introduction

Dr. Chantal Khan-Malek Deputy Director, Asia-Pacific, Europe of Research and International Cooperation Office – CNRS and Dr Tsung-Tai LIN, General Director, Department of International Cooperation - NSC, have delivered the opening remarks.

II. Session

After agreeing to vote for suitable topics by raising hands at the end of the meeting, the Planning Group Members made presentations of all the topics. These presentations have been followed by discussions, considering the following points:

1. Topics should be attractive to stimulate discussions among non-experts.
2. Both distinguished Taiwanese and French researchers under 45 years old should be available as chairs and speakers candidates for topics.

The session topics presented were:

Session I -Physical Sciences (Fabienne Gauffre & Hsuan-Yi Chen)

Fabienne Gauffre Colloids and active matter
Atomic-scale Manipulation of matter/Cold atoms
Post-silicon Era

Hsuan-Yi Chen Arrow of time and non-equilibrium thermodynamics
Extreme events and non-equilibrium systems
How do physical models scale?

Session II - Life Sciences (Valérie Pezo & Shau-Ping Lin)

Valérie Pezo Developmental biology and regenerative medicine
Mechanobiology and optogenetics
Metabolomics and health

Shau-Ping Lin Ecology, biodiversity and evolution
New challenges and opportunities for Agriculture
How brain functions?

Session III - Applied Sciences (Chien-Neng Liao & Charlie Gosse)

Charlie Gosse Disaster prevention/prediction
Machine in Man
Medical diagnosis

Chien–Neng Liao Solar light
Innovative biomaterials
Advanced computing

Session IV - Humanities and Social Sciences (Thung-Hong Lin & Laurent Prévot)

Laurent Prévot Game theory and rationality
Social network: quantitative analysis, modeling and its impact
Ethnocentrism in science! How our cultural heritage influences our scientific research

Thung-Hong Lin Discrimination in modern society
Sustainable development and intergeneration choices
Society and new technology: adaptation and personal behavior changes

The Planning Group Members voted to adopt topics and agreed which sessions to have Taiwanese/French chairs determined as follows:

Session Field	Session Topic	Chair
Physical Sciences	Arrow of time and non-equilibrium thermodynamics	Taiwanese
Life Sciences	Ecology, biodiversity and evolution	French
Applied Sciences	Disaster prevention/prediction	Taiwanese
Humanities and Social Sciences	Social network: quantitative analysis, modeling and its impact	French

III- Timetable

During December- Mid January

Each PGM provides to FoS Unit and NSC a list of candidates for chairs and speakers of his/her assigned session

* Chairs/Speakers should be

1) 45 years of age or under (doctoral students and postdocs are not eligible);

2)full-time researchers affiliated with either Taiwanese or French universities/research institute;

3) able to take the initiative in coordinating and developing dialogue in English;

4) winners of prestigious fellowships or awards for young scientists;

5) those who have not attended a previous FoS symposium;

6) affiliated with research institution different from those of PGMs.

PGMs are requested to confirm candidates' availability to attend the symposium before making nominations.

NSC: Call for Taiwanese General Participants

Mid to end of January

The French advisory board authorizes the chairs and speakers.

↓

January-Mid February

Call for General Participants (12 French: 3 per session per country).

NSC: Evaluation process of General Participant's application as candidates for Taiwan part.

↓

Mid February-Mid April

Evaluation process of General participants application for the French part.

The NSC and NTHU team organize 2 Taiwan Frontiers of Science Symposia.

↓

End of April

The French advisory board approves the list of general participants. It is possible to give the opportunity to previous GPs to participate a second time. The GPs should be replaced at least 50% in every symposium.

The NSC approves the final list of chairs, speakers and general participants from Taiwan side.

↓

April-May

FoS Unit collects the abstracts (chairs and speakers), CVs, glossaries, posters abstracts and compiles the symposium booklet.

↓

June 10-13, 2013

6th French-Taiwanese- Frontiers of Science Symposium
Bordeaux region

附件二、**2012**「台法科技獎」新聞報導

台法科技獎 張清風杜福爾獲獎

中央通訊社 THE CENTRAL NEWS AGENCY *中央社 – 2012 年 11 月 29 日 上午 9:32*

（中央社記者蔡筱穎巴黎 28 日專電)中華民國國科會與法國自然科學院今天頒發第 14 屆台法科技獎，獲獎人為海洋大學校長張清風，以及法國國家科學研究中心（CNRS）、巴黎自然歷史博物館（MNHN）教授杜福爾。

在法蘭西自然科學院舉行的頒獎典禮，由行政院國家科學委員會副主任委員賀陳弘、中華民國駐法大使呂慶龍，與自然科學院副院長達給（Philippe Taquet）共同主持。

張清風與杜福爾（Sylvie Dufour）自 1992 年即開始合作研究水生動物生理生態領域，其中尤以鰻魚及黑鯛等魚類與珊瑚的生殖內分泌生理等，有許多新的發現與重大貢獻，因而榮獲本屆科技獎殊榮。

杜福爾在致詞時表示，到台灣進行研究是一個極為豐富的經驗。在科學上，台灣實驗室的研究非常有活力。在人性方面，彼此成為好朋友，分享共同的研究反應成果。在文化上，認識了一個差異很大同時又非常貼近的文化。

杜福爾很高興得獎，並表示將促進台法的國際合作。

張清風表示，這個獎非常有意義，代表台法研究的合作穩固而深遠。他認為，台灣與法國可再強化合作，法國的基礎和應用科學極強，相較於其他國家，跟法國合作是非常愉快的經驗，法國科學家誠實，是非常好的合作對象。

張清風指出，合作 20 年，兩人共同指導研究生，並造就教授之間的交流與互訪，舉辦雙邊海洋生物生理研討會，對未來年輕一代幫助很大。

未來台法雙方計畫成立演化生物學暨海洋生態生理學聯合實驗室，以其擴大合作計畫，延攬新的團隊，並促進青年研究員未來在此領域的台法合作。（本文附有影音）1011129

附件三、**2013/2014**「台法幽蘭計畫」審查會議紀錄及清單

Bureau Français à Taipei 法國在台協會

行政院國家科學委員會 National Science Council

台法幽蘭計畫
2012 年 11 月 26 日評審委員會會議記錄

地點：法國國家研究中心(CNRS)，巴黎 Michel-Ange 園區，會議室
日期：2012 年 11 月 26 日，14 時 30-16 時
參與人員：
林宗泰先生，行政院國家科學委員會，國際合作處處長
吳文拮先生，臺北駐法國代表處，科技組長
Béatrice CHASSAING 女士，法國在台協會學術合作與文化處副處長
Emmanuelle PLATZGUMMER 女士，法國外交部學術交流處
Marc MELKA 先生，法國高等教育暨研究部，歐洲與國際合作司
Dominique CHATTON 先生，法國高等教育暨研究部，歐洲與國際合作司
Marie-Claude DAUCHEL 女士，法國高等教育暨研究部，國際評審組

決議：幽蘭計畫申請于 2012 年 6 月 11 日截止，學術專業審核分別由臺灣、法國主管機關各自審查，計畫審查結果評等由[D]到[A+]

我方時向雙方主管機關申請的 24 項台法交流合作申請案，評審委員會遴選推薦補助 2013-2014 年 7 項新交流合作案。
我方時向雙方主管機關申請的 7 項台法研討會申請案，評審委員會遴選推薦補助 2013 年 3 場研討會

經過 2013 年審核補助之交流計畫與研討會列於附件，申請通過百分比為 30%
12 項自 2012 年開始執行之計畫於 2013 年繼續執行。

Pascal Le DEUNFF
法國外交部
科技交流與研究部處長

林宗泰
行政院國家科學委員會
國際合作處處長

2013-2014年台法幽蘭計畫-人員交流互訪計畫核定補助名單
2013-2014 France-Taiwan Orchid Program - Joint Project - Selected List

計畫執行起日為2013年1月1日，補助經費以公文另行通知。 Dec. 19, 2012

No.	Department _NSC	Title of Project	PI _ Taiwan	Organization _Taiwan	PI _ France	Organization _France	Funding Reference
1	生物處 Life Sciences	趨化素受體CXCR3的辨識研究 Recognition of the chemokine receptor, CXCR3	薛士哲 Shih-Che SUE	國立清華大學生物資訊與結構生物研究所 Institute of Bioinformatics and Structural Biology, National Tsing Hua University	Andreas BIKFALVI	University Bordeaux I	102-2911-I-007-506
2	生物處 Life Sciences	非侵襲擴散影像於人腦微細組織結構研究 In-vivo microstructural measurement of human brain tissue using diffusion MRI	林慶波 Ching-Po LIN	國立陽明大學神經科學研究所 Institute of Neuroscience, National Yang-Ming University	Cyril POUPON	Chief of Nuclear Magnetic Resonance Laboratory	102-2911-I-010-502
3	生物處 Life Sciences	水稻黃斑病毒多功能蛋白質控制水稻發育的機制 Role of multifunctional viral proteins and RNA silencing suppressors in the control of rice host development	邢禹依 Yui-Ie Caroline HSING	中央研究院植物暨微生物學研究所 Institute of Plant and Microbial Biology, Academia Sinica	Florence VIGNOLS	Institute of Research and Development	102-2911-I-001-503
4	生物處 Life Sciences	粒線體脯胺酸轉運子的發現與其在抗旱中的重要性 Discovery of mitochondrial proline transporters and their importance in drought	葉保羅 Paul Edwin VERSLUES	中央研究院植物暨微生物學研究所 Institute of Plant and Microbial Biology, Academia Sinica	Arnould SAVOURÉ	Université Pierre et Marie Curie	102-2911-I-001-504
5	人文處 Social Sciences	十七、十八世紀亞洲與傳統及歐洲與國的呈現 European appropriation of East Asian Cartographical Traditions in 17th-18th centuries	毛傳惠 Chuan-Hui MAU	國立清華大學歷史研究所 Institute of History, National Tsing Hua University	Vera DOROFEEVA-LICHTMANN	CNRS (UMR 8173 Chine-Corée-Japon)	102-2911-I-007-507

6	自然處 Natural Sciences	地核正熱耦物對地幔異質性的影響 Influence of thermo-chemical structure in the lower mantle on rotational modes	戴貝爾 Frederic DESCHAMPS	中央研究院地球科學研究所 Institute of Plant and Microbial Biology , Academia Sinica	Yves ROGISTER	EOST Strasbourg	102-2911-I-001-505
7	自然處 Natural Sciences	組合結構的隨機生成：以解析組合作法 Random generation of combinatorial structures: new rigourous approach for attribute grammars via analytic combinatorics	黃顯貴 Hsien-Kuei HWANG	中央研究院統計科學研究所 Institute of Statistical Science,Academia Sinica	Olivier BODINI	Laboratoire d'informatique de Paris 13 (LIPN)	102-2911-I-001-506

2013 年台法幽蘭計畫 - 雙邊研討會 核定補助名單
2013 France-Taiwan Orchid Program - Workshop - Selected List

研討會舉辦日期應在: 2013.1.1~2013.12.31間，補助經費以公文另行通知。 Dec. 19, 2012

No.	Department_NSC	Title of Project	PI_Taiwan	Organization_Taiwan	PI_France	Organization_France	Venue & Time
1	人文處 Social Sciences	從文本發生學看中文手稿 Chinese Manuscripts in the Light of Genetic Criticism	易鵬 Peng YI	國立中央大學英美語文學系 Department of English, National Central University	Sandrine MARCHAND	L'Unité de Formation et de Recherche (UFR) de Langues Étrangères, University of Artois	Paris, France April 2nd-4th, 2013
2	生物處 Life Sciences	台法生醫用小型豬研討會 Research on Miniature Pigs for biomedical research in Taiwan and France	鄭秋竹 Yu Shin CHENG	行政院農業委員會畜產試驗所/ Executive Yuan, Livestock Research Institute, Council of Agriculture	David VAL-LAILLET	INRA - UR1341 ADNC	Taiwan October 22nd-23rd, 2013
3	自然處 Natural Sciences	量子資訊基礎與應用研討會 Workshop on Quantum Information, Foundations & Applications	陳岳男 Yueh Nan CHEN	國立成功大學物理學系（所） Department of Physics, National Cheng Kung University	Daniel BRAUN	Universite Paul Sabatier	Toulouse, France November 5th-8th, 2013

附件四、法國的地熱發展計畫簡介

有鑑於強烈的發展需求，地理暨礦物研究局（Bureau de Recherches Géologiques et Minières，BRGM）於 2006 年底設立地熱處，以期加強在地熱發展方面的貢獻，並提升法國、歐洲及國際地熱能源的應用潛力。

法國地理暨礦物研究局創於 1959 年，為法國公立工商機構（EPIC），受高等教育暨研究部（MESR）與生態能源暨永續發展部（MEDDE）的雙重監督。地理暨礦物研究局是地球科學研究的參照機構，其研究包括

(1)Soultz-sous-Forêts 市的歐洲地熱能源計畫新一代試驗系統；

(2)巴黎盆地等沉積盆地深層的資源；

(3)地熱鑽井規範與技術與

(4)海外省的傳統火山研究。以下介紹前三項研究領域：

(1) Soultz-sous-Forêts 市的歐洲地熱能源計畫

為了善加利用地熱能源，科學家試圖利用地熱刺激系統技術（EGS - Enhanced Geothermal System，藉由水力壓裂來提高滲透深度的技術）來開採地熱。全球有數個試驗場正在進行相關技術研究，其中最先進的，是由熱岩探勘研究團隊(GEIE - Exploitation minière de la chaleur) 在法國蘇茲蘇佛瑞市（Soultz-sous-Forêts）展開的歐洲地熱能源計畫（European Deep Geothermal Energy Programme）。此計畫由法國、英國與德國共同合作，並獲得歐盟與法國環境暨能源管理署（ADEME）的支持。

Soultz-sous-Forêts 市位於萊茵河地塹西側，離史特拉斯堡（Strasbourg）約五十公里。該地擁有高度的地溫梯度，上世紀時曾歷經 Péchelbronn 石油公司的開採。科學家已經鑽了兩個深井，一個深 3600 公尺，另一個深 3800 公尺，兩個深井之間的距離為 450 公尺;另外也鑽了五個地質觀察井(深度從 1400 公尺至 2200 公尺不等)。

經過十年的鑽探測試，科學家首度於 1997 年成功在兩個深井之間進行水循環，流量為每秒 25 公斤，溫度在攝氏 140 度以上，幫浦運送功率微弱，但無腐蝕現象。這項成果讓以法國電力公司（EDF）及其子公司史特拉斯堡電力公司為主之業界團體的合作計畫得以持續，鑽得三個深 5000 公尺的深井，並於 2006 年開始提供雙流發電服務，功率為 1 MW。除了來自法國國家科學研究中心（CNRS）、地理暨礦物研究局、各大學的科學家之外，尚有來自德國、瑞士與英國的科學家，共同在歐洲乾熱岩協會（EHDRA）的召集下進行合作。

(2) 大巴黎地區的地熱開採

大巴黎地區年代最早的地熱網絡可追溯至三十年前，當時的技術是利用幫浦

將位於地下 1800 公尺（侏羅紀中期的地層）、溫度為攝氏 56 度至 85 度的水送上地表的交換器，再將水灌回侏羅紀中期的地層，這就是所謂的「地熱雙峰」原理。原先安置的 55 個裝置當中，目前尚在使用的有 34 個，並透過 29 個地熱網絡向 15 萬戶家庭提供暖氣。

1980 年代中期，地理暨礦物研究局與其他單位進行了不同的研究，證實這些地熱系統的可靠性與持久性，並提出解決腐蝕等等問題的方法。有鑑於這些研究，環境暨能源管理署與大巴黎地區於 2007 年決定大力支持地熱能源，並於奧利地區（Orly）投資 1 千萬歐元，新建新的「地熱雙峰」系統，並於 Sucy-en-Brie 鑽探新井、調整老舊的回灌井。

地理暨礦物研究局也針對地熱資源的潛力，進行新的研究，特別是三疊紀（Trias）時期的含水層水溫最高、所處位置也最深。

(3) 地熱鑽井規範與技術

在地理暨礦物研究局與環境暨能源管理署的支持下，2002 年成立了法國熱幫浦協會（AFPAC）。該協會制定了熱幫浦安裝者證書（Qualipac）與法國熱幫浦設備證明規範（NF PAC）。

地理暨礦物研究局另外設立了地熱委員會，旨在協助進行地熱鑽探。目前該局正在進研擬法國規範化協會（AFNOR）的地熱鑽探特殊規範。地理暨礦物研究局也是再生能源工會（SER）的一員，該工會旨在發展相關部門之外的活動（lobbying）。

為了回應相關業者的需求，地理暨礦物研究局與環境暨能源管理署設計了培訓計畫。該局也負責製作專業指導手冊，並在中央地區委員會（Conseil régional du Centre）的要求下，與十多個鑽井公司共同執行地方活動。

附件五、**NSC-RFBR** 年度會議俄方計畫主持人報告名單

2012 RFBR-NSC Annual Conference

List of Rus-PI Reporters

Moderator: Professor Alexander GABIBOV (Head of the RFBR International Competitions Council)

(reporting duration up to 7-8 minutes)

NN	TW CO-PI	TW Institution	RUS CO-PI	RUS Institution	Title of the Project	Reporter/ Докладчик
1.	Lee Ching-Fu 李清福	National Hsinchu University of Education, Department of Applied Science	Gennadi Naumov	State Institute for Genetics and Selection of Industrial Microorgnims (GNII)	Evolution and molecular taxonomy of ascomycetous yeasts from Taiwan (Phylogenetic analysis of biological macromolecules)	Naumov Gennadi/ Наумов Геннадий Иванович
2.	Hwung-Hweng Hwung 黃煌煇	National Cheng Kung University	Valeriy G.Petnikov	A.M.Prokhorov General Physics Institute, Russian Academy of Sciences	Underwater acoustic and remote surface monitoring of internal waves on the Taiwan shelf	Petnikov Valeriy/ Петников Валерий Георгиевич
3.	Ai-Li Shiau 蕭瓊莉	Department of Microbiology and Immunology,	Evstafieva Alexandra	Belozersky Institute of Physico-Chemical Biology, Moscow State	Roles and molecular mechanisms of action of oncoprotein prothymosin	Evstafieva Alexandra/ Евстафьева

		National Cheng Kung University Medical College, Tainan		University	alpha in p53-dependent transcription, anti-apoptosis, and tumor metastasis	Александра Георгиевна
4.	Chan Benny K.K. 陳國勤	Academia Sinica, Biodiversity Research Center	Kolbasov Grigory Alexandrovich	Faculty of Biology, Lomonosov Moscow State University	Reconstruction of the phylogeny of the Acrothoracica barnacles (Crustacea Cirripedia) with using both morphological and molecular approaches. A new synthetic systematics of the Acrothoracica	Kolbasov Grigory/ Колбасов Григорий Александрович
5.	Chung-Hsieh Kuo 郭重顯	National Taiwan University of Science and Technology / Department of Electrical Engineering	Felix Leonidovich Chernousko	Institute for Problems in Mechanics Russian Academy of Sciences	Intelligent wall-climbing minirobot with multisensory control system	Bolotnik Nikolai/ Болотник Николай Николаевич
6.	Jaw Fu-shan 趙福杉	Institute of Biomedical Engineering, National Taiwan University	Yury Andreyevich Pirogov	Lomonosov Moscow State University	Cell and drug therapy of brain ischemia in small animal experiments with MRI control	Pirogov Yury/ Пирогов Юрий

						Андреевич
7.	Guang-Yu Guo 郭光宇	Graduate Institute of Applied Physics, National Chengchi University	Klimov Vasily Vasilyevich	Lebedev Physical Institute, Moscow	Electromagnetic theory and simulation of plasmonic meta-materials	Klimov Vasily/ Климов Василий Васильевич
8.	Sun Chih-Hong 孫志鴻	Department of Geography, National Taiwan University	Tikunov Vladimir Sergeyevich	Geographical faculty M.V.Lomonosov Moscow State University	Creation of a conceptual basis and developing a atlas information and decision support system of sustainable development of Central Asia	Tikunov Vladimir/ Тикунов Владимир Сергеевич
9.	Der-Jang Liaw 廖德章	National Taiwan University of Science and Technology / Chemical Engineering	Anatoli A.Ischenko	Moscow Lomonosov State Academy of Fine Chemical Technology	UV-protective and photoactive composite polymer materials based on nanocrystalline Silicon and Silicon Carbide	Ischenko Anatoli/ Ищенко Анатолий
10.	Sheu Rong-Jiun 許榮鈞	National Tsing Hua University/ Institute of Nuclear Engineering and Science	Feynberg Olga Savelievna	Russian Research Center "Kurchatov Institute"	Neutronic Consideration of Flexible Fluoride Based Nuclear System for Mo-99 Production	Feynberg Olga/ Фейнберг Ольга Савельевна

11.	Yeh, Tsung-Kuang 葉宗洸	National Tsing Hua University (NTHU)/Institute of Nuclear Engineering and Science	Victor Vladimirovich Ignatiev	Russian Research Center "Kurchatov Institute"	Basic studies for large scale 99?? production in the fuel salt of small power reactor	Ignatiev Victor/ Игнатьев Виктор Владимирович
12.	Chang, Chih-Han 張志涵	Institute of biomedical Engineering, National Cheng Kung University	Irina Goryacheva or Selutckiy Yuriy	Institute for Problems in Mechanics, Russian Academy of Sciences	Analysis of contact characteristics and surface shape variation in carpometacarpal joint of thumb	Goryacheva Irina/ Горячева Ирина Георгиевна or Selutckiy Yuriy/ Селюцкий Юрий Дмитриевич
13.	FONG-CHIN SU 蘇芳慶	Institute of Biomedical Engineering, National Cheng Kung University	Dosaev Marat	M.V.Lomonosov Moscow State University	Development of a laparoscopy diagnostic technique of soft biological tissues pathology using a videotactile senso	Dosaev Marat/ Досаев Марат Закирджанович

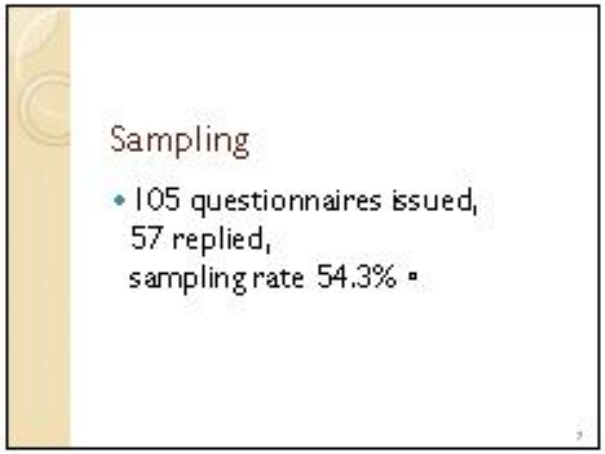
附件六、新增 14 件 NSC-RFBR 雙邊研究計畫案計畫清單

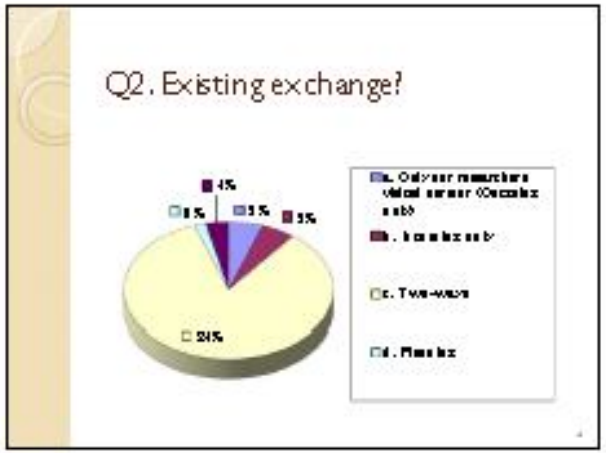
Annex 1 NSC-RFBR Joint Research Projects 2012-2015

No.	T-W PI	T-W Affiliation	RU PI	RU Affiliation	Project Title
1	Jih-Hwa Guh 顧記華	National Taiwan University, School of Pharmacy 國立臺灣大學醫學院藥學系暨研究所	Zefirov Nikolay Sergeevich Зефиров Николай Сергеевич	M.V. Lomonosov Moscow State University МГУ им. М.В.Ломоносова	Rational design, synthesis and biological evaluation of novel small-molecule agents with antitumor activity
2	Chien-Ching Ma 馬劍清	Mechanical Engineering Department, National Taiwan University 國立臺灣大學機械工程學系暨研究所	Nikita Fedorovich Morozov Морозов Никита Федорович	St. Petersburg State University Санкт-Петербургский государственный университет	Dynamics, Stability and Robustness of Functionally Graded Materials
3	Yu-Chen Hu 胡育誠	National Tsing Hua University, Department of Chemical Engineering 國立清華大學化學工程學系（所）	Elena Viktorovna Parfyonova Парфенова Елена Викторовна	Russian Cardiology Research and Production Complex Российский кардиологический научно-производственный комплекс Министерства здравоохранения и социального развития	Treatment of ischamia with autologous adipose-derived stem cells that persistently express vascular endothelial growth factor
4	Shi-Yow Lin 林祈佑	National Taiwan University of Science and Technology 國立臺灣科技大學化學工程系	Boris Anatolyevich Noskov Носков Борис Анатольевич	St. Petersburg State University Санкт-Петербургский государственный университет	Conformational transitions of protein/polyelectrolyte complexes at the liquid - gas interface
5	Sy-Yan Kuo 郭斯彥	Department of Electrical Engineering, National Taiwan University 國立臺灣大學電機工程學系暨研	Andrei Valerievich Kopylov Копылов Андрей Валериевич	Tula State University Тульский государственный университет	Enhanced Traffic Flow Video Analysis design of Transport Monitoring Systems
6	Chuan-Jinn Tsai 蔡春進	Institute of Environmental Engineering, National Chiao Tung University 國立交通大學環境工程研究所	Alexander Mihailovich Starik Александр Михайлович Старик	Central Institute of Aviation Motors Центральный институт авиационного моторостроения им. П.И. Баранова	Study of cluster and nanoparticle formation in complex plasma produced in the course of composite and metallized fuel combustion
7	FONG-CHIN SU 蘇芳慶	Institute of Biomedical Engineering, National Chang Kung University 國立成功大學生物醫學工程學系	Marat Zalimkhanovich Dosaev (Original PI Yuri Grigorievich Martynenko passed away) Досаев Марат Залимханович (Original PI Юрий Григорьевич Мартыненко passed away)	Lomonosov Moscow State University, Institute of Mechanics Научно-исследовательский институт механики Московского государственного университета	Development of a laparoscopy diagnostic technique of soft biological tissue pathology using a video tactile sensor

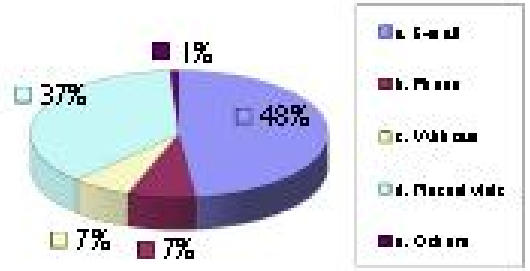
8	Shy, Shenqyang (Steven) 施聖洋	National Central University/Mechanical Engineering, Center for Energy Research, College of Engineering 國立中央大學機械工程學系	Sergey Sergeyevich Minaev Минаев Сергей Сергеевич	Institute of Theoretical and Applied Mechanics of SB RAS Институт теоретической и прикладной механики им. С.А. Христиановича СО РАН	Ignition Studies of Gaseous Pre-mixtures in High Pressure Turbulent Environment
9	Chen Yang-Yih 陳陽益	Department of Hydraulic and Ocean Engineering 國立成功大學水利及海洋工程學系（所）	Vladimir Evgenyevich Zakharov Владимир Евгеньевич Захаров	P.N. LEBEDEV PHYSICAL INSTITUTE Физический институт им. П.Н. Лебедева РАН	Abnormal Waves in the Ocean (ABWO)
10	Yeong Maw Hwang 黃永茂	National Sun Yat-sen University 國立中山大學機械與機電工程學系(所)	Oleg Borisovich Naimark Наймарк Олег Борисович	Institute of Continuous Media Mechanics UB RAS Институт механики сплошных сред Уральского отделения РАН	Localised plastic deformation and ductile failure in the vicinity of contact surfaces in metal forming and under impact loading
11	Hu Chin-Kun Hsin 胡進錕	Institute of Physics of Academia Sinica, Taipei 中央研究院物理研究所	Bratov Alexander Sergeevich Братов Александр Сергеевич	Moscow State University of Railway Engineering Московский государственный университет путей сообщения	Hamilton-Jacobi Equation Approach to Mathematical Models of Virus Evolution and Cell Dynamics
12	Chang Chia-Liang 張家良	Physics Department of National Dong Hwa University (Hualien, Taiwan) 國立東華大學應用物理研究所(理)	Alexander Vasilievic Priasshev Александр Васильевич Прияшев	Physics Department and International Laser Center, Moscow State University МГУ Физический ф-т	Carbon nano particles for biomedical applications: Effects on the blood properties and functions of cardiovascular system
13	Chin Shan Lue 呂欽山	Department of Physics, National Cheng Kung University, Taiwan 國立成功大學物理學系（所）	Andrey Andreevich Gippius Гиппиус Андрей Андреевич	Moscow State University МГУ Физический ф-т	New correlated thermoelectric material: synthesis, crystal structure, and magnetic resonance spectroscopy
14	Guanter Engling 白光宇	Biomedical Engineering and Environmental Sciences, National Tsing Hua University 國立清華大學生醫工程與環境科學系	Olga Borisovna Popovicheva Попович Ольга Борисовна	Institute of Nuclear Physics, Moscow State University Научно-исследовательский институт ядерной физики имени Д.В. Скобельцына МГУ	Development of combustion emissions source quantifications for high-quality air pollution monitoring in Taiwan and Russia

附件七、國合處林處長簡報：台方 **PI** 問卷調查





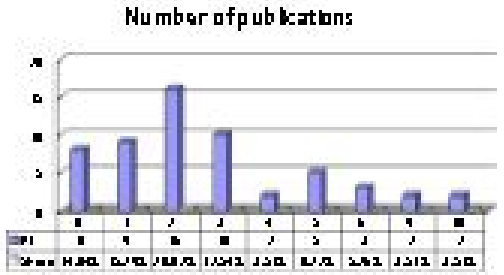
Q3. How the cooperation was conducted?



Q4. Young researchers (Ph.D. students and Post-docs) exchange?

- Totally 122 young researchers paid visit to Russian side within 57 received questionnaires. Averagely 2 people per project.

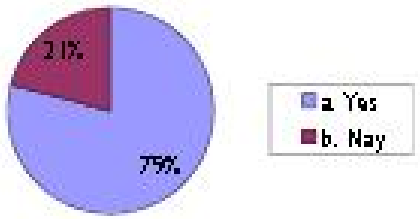
Q5. Publication in international journals?



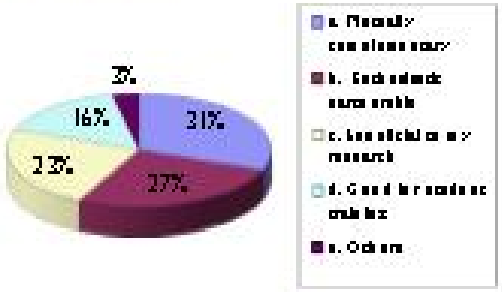
Q6. Patents and technology transfer?

- 3 patents and 3 technology transfers within 57 received questionnaires

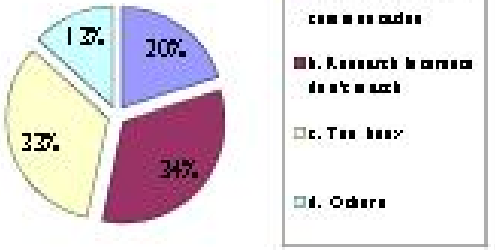
Q7. Both sides willing to submit next proposal?



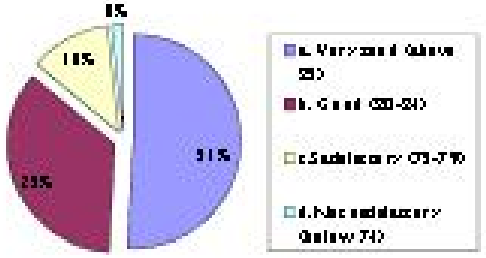
Q8. Reasons for continuing cooperation?



Q9. Reasons for not continuing cooperation?



Q10. How do you evaluate results of your cooperation?



附件八、新增 **3** 件 **NSC-RFH** 雙邊研究計畫案計畫清單

Russian PI	Russian Institution	Taiwanese PI	Taiwanese Institution	Project Title
Сильвестров С.Н. Silvestrov	ФГОБУ ВПО "Финансовый университет при Правительстве Российской Федерации" Financial University attached to the Government of Russian Federation	郭明政 Ming-Cheng Kuo	國立政治大學法律學系 Department of Law, NCCU	俄羅斯與台灣財金部門法律調節的比較分析 Сравнительный анализ правового регулирования финансово-банковского сектора России и Тайваня Comparative analysis of the legal regulation of Russia and Taiwan financial-banking system
Ручин В.А. Vladimir Ruchin	СГТУ SSTU, Saratov State Technical University	潘偉華 Pan Wei Hua	國立雲林科技大學企業管理系暨研究所 National Yunlin University of Science and Technology	知識轉移與社會經濟發展關係-以台俄高等院校國際合作項目的比較研究 Передача знаний в системе высшего образования развитие общества: сравнение социально-экономических условий России и Тайваня The knowledge transfer in higher education and development of society: to compare the socio-economic conditions in Russian and Taiwan
Кононов А.В. Alexander Kononov	ИМ СО РАН Sobolev Institute of Mathematics	林妙聰 Bertrand M.T. Lin	國立交通大學資訊管理研究所 Institute of Information Management, NCTU	資源限制下排程之研究：考量資源回收再製作業 Задачи оптимизации расписаний работ с дополнительными затратами на восстановление ресурсов Resource-constrained Scheduling with Separate Recycling Operations

附件九、俄聯邦聖彼得堡經濟特區簡介

JSC "SEZ" JSC "Special Economic Zones" – Official website

[illegible]

Official website

» JSC "SEZ" JSC "Special Economic Zones" » Special Economic Zones » Innovation Zones »

Saint Petersburg

SAINT PETERSBURG	SAINT PETERSBURG INNOVATION ZONE
ECONOMICS	OVERVIEW
GRP: RUB [illegible] trillion	The St. Petersburg Innovation Zone was created pursuant to the Russian Government's Resolution No. [illegible] dated December [illegible], [illegible].
BUDGET: RUB [illegible] billion	Both the Russian Government and the Government of St. Petersburg are involved in implementation of the St. Petersburg Innovation Zone project.
FIXED ASSET INVESTMENTS: RUB [illegible] billion	The zone occupies [illegible] hectares and consists of [illegible] sites:
KEY SECTORS: Mechanical engineering, [illegible], defence, shipyards, automotive, [illegible], chemical, and consumer industries	• [illegible] – [illegible] ha. Located in [illegible] District, St. Petersburg • [illegible] – [illegible] ha. Located in St Petersburg's [illegible] District
MAJOR COMPANIES	ST. PETERSBURG ZONE'S OBJECTIVES

Kirov Plant; Power Machines OJSC; Elektrosila Factory; [illegible] Turbine Works; Vagonmash; Baltiysky Zavod; Severnaya Verf; Admiralty Shipyards

TRANSPORTATION (beginning of [illegible])

RAIL: [illegible] km of tracks per 1000 sq km (excluding Leningrad Region).

St. Petersburg is a major rail hub.

It handles cargo traffic bound to the Russian Baltic Sea ports, the Baltic states, and Finland.

The hub consists of five railway terminals: Baltic, Vitebsk, Moscow, Ladoga, and Finland stations.

ROAD: [illegible] km of roads per 1000 sq km (excluding Leningrad Region).

The M10 'Scandinavia' highway links St. Petersburg to Moscow and Finland.

The M11 'Narva' highway runs between St. Petersburg and Estonia.

M18 connects St. Petersburg to Petrozavodsk and Murmansk.

M20 connects St. Petersburg to Pskov and Belarus.

The M10 and M20 highways are part of Pan-European transport corridors.

- Develop technology-intensive sectors
- Manufacture innovative products
- Commercialize achievements in knowledge-intensive sectors
- Increase the region's competitiveness

PRIORITY INDUSTRIES

The St. Petersburg Zone focuses on:

- Precise and analytical instruments
- Software products, communication equipment for various applications, automatic process control systems, military and civil avionics
- Medical technologies, pharmaceuticals
- Robotics, optronics, nanomaterials
- Hydrogen energy, solar energy, thermal electricity

The St. Petersburg Innovation Zone will include the following clusters:

- Information technology and telecommunications
- Medical technologies and pharmaceuticals
- Instruments and nanomaterials
- Energy efficiency

Pharmaceuticals is the most rapidly emerging cluster.

EXISTING RESIDENTS

The Zone currently has [illegible] resident investors.

Their total committed investment is RUB [illegible] bn.

INCENTIVES AND PREFERENCES

Resident investors enjoy the following tax reliefs:

- Property tax exemption
- Land tax exemption
- VAT exemption
- Corporate income tax reduced to [illegible]%
- Insurance contributions reduced to [illegible]%
- Free customs zone

Other preferences for the St. Petersburg Zone's residents include:

AIR:
The city is serviced by Pulkovo International Airport.

Its annual passenger traffic is over 7 million people.

The airport has a road link to St. Petersburg.

SEA:
St. Petersburg's harbourage area allows year-round navigation.

St. Petersburg's Big Port is connected with the Gulf of Finland by the 27 km long Sea Canal.

The navigable Neva river is the last part of the Volga-Baltic route and connects the city to Lake Ladoga.

SOCIAL INDICATORS

TOTAL POPULATION:
4.6 million

EMPLOYABLE POPULATION:
2.8 million

PERSONAL INCOMES
Per capita monthly income
RUB 21,[illegible]

- Preferential rental rates
- Preferential utility connection terms
- Legal guarantee of the privileges provided in the St. Petersburg Innovation Zone Agreement

ST. PETERSBURG ZONE INFRASTRUCTURE

NEUDORF

The Neudorf site is fully completed. It is divided into three areas:

- The administrative area
- The production and testing area
- The customs area

Neudorf's Administration & Business Centre includes an exhibition complex and has a gross floor area of 14,000 sq m.

Its completed infrastructure includes a 10 MW gas-fired boiler house, electricity networks, 12.0 MW power supply facilities.

Investors' production business activities are supported by comprehensive transport and utility infrastructure, which includes a 6.7 km long road, a 3,500 m3/h gas line, a 6.78 km long heating network, a 1,350 m3 water supply line, and a 2.7 km sewerage line.

Customs house infrastructure has been built. Site fencing is equipped with video surveillance systems. There are two gatehouses to control entry of people and motor transport.

The Neudorf site is not far from Peterhof, which is the location of a long-standing science complex that consists of 12 research institutes, the Laser Physics Centre, the Telecommunications Centre, St. Petersburg State University, Admiral Makarov State Maritime Academy, and numerous military colleges.

NOVOORLOVSKAYA

The Novoorlovskaya site will welcome investors in late 2011. It is divided into four areas:

- The administrative area
- The production and testing area
- The customs area
- The recreation area

The site's design includes a business incubator with a technology transfer centre. The gross floor area is 15,000 sq m.

Resident investors may build their own facilities in the production and testing area. For this purpose, 52 plots will be allocated with areas ranging from 0.5 to 3.3 hectares.

The customs area will include an administrative building, perimeter fencing, customs control engineering structures, and checkpoint infrastructure.

ACADEMIC INSTITUTIONS There are 106 institutions of higher education and 79 research institutes in St. Petersburg and its suburbs.	The recreation area is designed for leisure and sports activities. The Novoorlovskaya site will be equipped with: a 1.6 km long road, an computing system, a 2.6 km long telecommunications network, a 1.5 km heating line, a 2.6 MW power supply network, 6.9 km storm drainage with waste-water treatment facilities, a 4.5 km sewerage system, and a 1.4 km water supply pipeline. The Novoorlovskaya site is located in immediate proximity to several institutes of the Russian Academy of Sciences: Ioffe Physics and Technology Institute, Electrophysics and Electric Power Institute, and Applied Astronomy Institute.

附件十、俄聯邦綠城經濟特區簡介

JSC "SEZ" JSC "Special Economic Zones" – Official website

http://eng.oao-oez.ru/special_economic_zones/ts_innovation/zelenograd/

Official website
» JSC "SEZ" JSC "Special Economic Zones" » Special Economic Zones » Innovation Zones »
Zelenograd

ZELENOGRAD, MOSCOW	ZELENOGRAD INNOVATION ZONE
ECONOMICS BUDGET RUB 10.5 Bn INDUSTRIAL OUTPUT RUB 10.8 Bn KEY SECTORS Electronics Micro-electronics MAJOR COMPANIES Mikron, Sitronics, Angstrem, ELMA Research & Production Centre, Nanotechnology-MDT, Proton-MIET, Binnopharm	OVERVIEW The Zelenograd Innovation Zone was created in Zelenograd Borough, Moscow, pursuant to the Russian Government's Resolution No. 779 dated December 21, 2005. The zone occupies 150.9 hectares and consists of three sites: • MIET, 4.4 ha • Alabushevo, 142.4 ha • EcoCity, 4 ha ZELENOGRAD ZONE'S OBJECTIVES • Development innovative infrastructure • Create breakthrough technologies and products able to compete in the domestic and international markets • Promote domestic and foreign investment in Zelenograd's science and technology-intensive industries • Upgrade Zelenograd's manufacturing sector • Commercialize innovative products developed by Zelenograd's companies PRIORITY INDUSTRIES

Volvo car assem

TRANSPORTATION

RAIL

Zelenograd Borough is linked to "mainland" Moscow by a section of the Moscow—St. Petersburg railway.

Alabushevo station is 200 m of the Zelenograd Zone.

Trains arrive at Leningradsky Station.

Zelenograd is equipped with passenger platforms and a freight dock.

ROAD

Zelenograd is connected to other parts of Moscow by Leningradskoye and Pyatnitskoye highways (27 km).

The Moscow—St. Petersburg Highway (M10) lies 25 km east of the Zelenograd Innovation Zone. The Alabushevo—Chashnikovo road, now under construction, will link the Zone to M10.

AIR

Sheremetyevo International Airport is 15 km away from the Zelenograd Zone

SOCIAL INDICATORS

TOTAL POPULATION
211,000

EMPLOYABLE POPULATION
122,700

PERSONAL INCOMES
Per capita monthly income RUB 18,000

ACADEMIC INSTITUTIONS
Moscow Institute of Electronic Technology (MIET)

Moscow State Academy of Business Administration

Institute of International Business Education

VOCATIONAL SCHOOLS
Technology College #43

The Zelenograd Innovation Zone focuses on:

- Micro-electronics
- Information technology
- Navigation and guidance systems
- Nanotechnology
- Laser and plasma technologies
- Bio-technologies, life support and human security systems
- Renewable energy technologies

The Zelenograd Zone will include the following clusters, which are currently being shaped:

- The biopharmaceutics cluster (BioCity) sponsored by Binnopharm
- The IT cluster sponsored by Cisco System Solutions and ELAR
- The nanotechnology cluster sponsored by Nanotechnology-MTD, NT-Active, and Sitronics-NT
- The microelectronics cluster sponsored by EPC and Kompozit Research Institute
- The energy-saving technology cluster sponsored by LED Technologies 000 and Soyuz Design Centre

EXISTING INVESTORS

The Zone currently has 23 resident investors

Their total committed investment is RUB 20.7 Bn.

INCENTIVES AND PREFERENCES

Resident investors enjoy the following tax reliefs:

- Land tax exemption
- Property tax exemption
- VAT exemption
- Corporate income tax reduced to 15.5%
- Social insurance contributions reduced to 14%
- Free customs area

Other preferences for the Zelenograd Zone's residents include:

- Preferential rental rates for land, offices etc.
- Favourable administrative environment
- Access to financing, private equity funds, venture funds, banks
- Governmental funding (including interest-free)

ZELENOGRAD AGENCY FOR INFRASTRUCTURE

MIET Site

The site includes the following facilities:

- Innovation Business Centre (13,000 sqm)
- Administration & Business Centre with an exhibition hall (15,000 sqm)
- Common-use centre (30,000 sqm)
- Human resources training centre (15,000 sqm)
- A 250,000 sqm complex under construction, to include an innovation centre, a technology transfer centre, and a specialised personnel training centre

Alabushevo Site

The site will include residents' infrastructure assets and buildings, whose total

Polytechnic College PSG	[illegible]
MIT Electronics and IT College	[illegible]

附件十一、Skolkovo 計畫會談主要人員基本資料

Conor Lenihan

Vice President for International Business Conor Lenihan has served in several government ministries including Foreign Affairs, Justice& Interior, Integration, Education, Enterprise, Trade & Innovation. At the Department of Foreign Affairs he ran Irish Aid, the development co-operation wing of the department, which had a budget of up to one billion euro. He re-organized and rebranded Irish Aid producing a White Paper that gave a road map for the expansion of Irish development aid activities including the opening of new embassies and aid operations. In 2007 he became Ireland's first minister for Integration and led a whole of government initiative to deal with large volume immigration into Ireland which culminated with the publication of a new policy statement "Migration Nation " Up to March of 2011 he was Ireland's Minister for Science, Technology & Innovation where he created a single budget line for science and technology funding as well as participating in the country's Innovation Task Force. As part of his role in the Ministry he participated in trade and investment missions, frequently presenting to top global companies who already invest in Ireland or were about to do so. Given the importance accorded to the knowledge economy he was a member of the Cabinet Sub-Committee on Economic Recovery.

He was first elected to the Irish parliament in 1997. Prior to his election he was a senior executive with an Irish-owned mobile operator and subsequently worked as an advisor to O2. In the 1990s he launched two FM radio stations, one in Dublin and the other in the Czech capital Prague. He began his working life as a newspaper journalist and continued into broadcasting. He also worked with the Inner London Education Authority a body which supervised over a thousand schools and 3rd level colleges in the London boroughs.

In the 1980s he was based in the Palace of Westminster where he was a Political Correspondent for the Irish News. While in London he was a member of the European Commission's Speakers Panel. He was educated at Belvedere College, University College Dublin, Dublin City University and INSEAD. He has a BA (Hons) degree in Economics, History and Politics. He also holds a post-graduate qualification in Communications and attended the INSEAD Young Managers Program.
He is currently on the Polish Board of San Leon Energy, a London-listed oil & gas company. He is a member of one of the best known political families in Ireland with

his grandfather, father, aunt and brother all having records of service in the Irish parliament and in key ministerial positions. His father, the late Brian Lenihan, held a number of cabinet portfolios and was Ireland's deputy Prime Minister

Kurilov Sergey

CEO, Technopark "Skolkovo"

Sergey has been CEO of Technopark "Skolkovo" since August 2011.

Prior to joining Technopark "Skolkovo", Sergey worked in various positions at TNK-BP Management for several years.

Sergey began his career with companies that specialise in strategic consulting for professional medical experts and high technologies.

Sergey graduated from St Petersburg State University of Economics and Finance.

Prof. Edward Seidel

http://www.skolkovotech.ru/stuff/edward-seidel

Senior Vice President for Research and Innovation Skolkovo Institute of Science and Technology Moscow, Russia

Ilia Dubinsky

Director, Center for Entrepreneurship and Innovation SkTech

Gabrielle Allen

Professor SkTech

Education

B.S., 1988, Mathematics, University of Nottingham M.Ast., 1989, Applied Mathematics and Theoretical Physics, University of Cambridge Ph.D., 1993, Physics and Astronomy, Cardiff University