



Asia Nano Forum

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Table of Contents

<i>Report from Australia</i>	3
<i>Report from Iran</i>	4
<i>Report from Japan</i>	5
<i>Report from Malaysia (NanoMalaysia Berhad)</i>	7
<i>Report from Malaysia (NNC)</i>	10
<i>Report from Philippines</i>	13
<i>Report from Taiwan</i>	16
<i>Report from Thailand</i>	20
Acknowledgement	24

Report from Australia

The Australian Nanotechnology Network has sponsored a number of high profile workshops and conference in the period between July and December 2018. Among them are the

- The Australian Nanotechnology Network and the Australian National Fabrication Facility in partnership with RMIT University present 'Thinking BIG with Nano,' 21/11/2018 - 22/11/2018. This workshop tailored for early-career researchers and late-stage PhD candidates showcased research translation in nanotechnology and provide facilitated training in taking ideas from concepts to a viable business.
- The 3rd International Conference on Emerging Advanced Materials (ICEAN) 30/10/2018 - 02/11/2018. The conference aimed to bring together scientists active in the fields of advanced nano and biomaterials, especially optronic, photovoltaic, magnetic, organic, porous, composite, computational, sensor, battery, fuel cell, catalytic and biomaterials, from all over the world. The ICEAN-2018, hosted by the Global Innovative Center for Advanced Nanomaterials (GICAN) and co-organized by EWHA Woman's University, South Korea and Qatar University, provided an opportunity to share the knowledge and create a collaborative platform where the top research experts from all over the world can work together on key and challenging research areas including advanced nano and biomaterials.
- Frontiers in Bio-Nano Science is an ARC Centre of Excellence in Convergent Bio-Nano Science (CBNS) event for the next generation of pro-active scientists and innovators to discuss ideas, share their skills and grow their careers. The development of Bio-Nano science as a tool in research to an innovation for industry can only arise from integration of ideas and techniques from all CBNS disciplines. This one-day symposium on 27/09/2018 provided a relaxed and inspiring environment for CBNS EMCRs to engage in cross-disciplinary networking and collaboration.
- The World Polymer Conference, MACRO, Cairns Convention Centre 01/07/2018 - 05/07/2018. Over the years, the MACRO conference has developed a strong reputation for bringing together the latest polymer research from top international polymer scientists. A number of leading Plenary and Keynote Speakers from around the world and also a very large number of contributors were presenting their work.
- The 3rd International Symposium on Renewable Energy Technologies This symposium brought together top scientists to discuss the latest advances in functional materials for sustainable energy conversion and storage technologies. The main objective of the symposium was to promote international cooperation and partnership between world leaders in the fields of nanomaterials for clean energy applications. The topics included Low dimensional nanomaterials design and developments, Photocatalysts and photoelectrochemical devices for solar fuel production and environment Semiconductors materials for new generation solar cells, Electrode materials for efficient energy storage systems including batteries and supercapacitors, New nanomaterials for electrocatalysis and fuel cell applications, and Magnetic materials for renewable energy conversion and storage systems G Computational nanomaterial science

Report from Iran

1. Twenty Iranian Nanotechnology Companies Participated in CHInano 2018

Twenty Iranian nanotechnology companies alongside INCC participated in CHInano 2018. In the sideline of the exhibition, a match making event was held with a special attention on biomedical technologies and business between Iranian and Chinese firms. CHInano is focusing on nanoparticles, energy, clean technologies, and nano-biotechnology areas and is aimed at creating an international platform in order to develop nanotechnology related cooperation. The CHInano 2018 was held on October 24th to 26th in Suzhou, China.

Report from Japan

1. INS (International Conference on nanoelectronics Strategy) at Tohoku University on May2018

INS (International Conference on nanoelectronics Strategy) is a successor of International Nanotechnology Conference (INC) . Until now, they had 12 times of INC. INC consisted of US, Europe and Japan nanoelectronics related members(Officials, National institutes, Universities and Private companies).

INS Mission is to foster mutual understanding and cooperation among partners form industry, academia and government of leading regions to advance innovations in electronics, computing, communications and related industries. Latest science and technology trends on Nanoelectronics as well as overviews of major funding programs will be presented from leading regions to share views on scientific and societal challenges for sustainable technological and economic growth.



This time,35 people who were university professors, scientists and business executives from US, Europe, Korea, Taiwan and Japan presented important matters of nanoelectronics and related policies. Especially, on Days 2, jointed all members discussed 3 matters, 1. Edge & IoT devices, 2. AI for auto-driving, 3. Advanced AI systems. As a result, they were trying to discuss about the future nanoelectronics. They could be effective involvements of science and technology.



On May14-15 at Tohoku University INS conference introduced as follows;

- Policy & funding (Japan, USA, Europe & Asia)
- Introduction of Tohoku University
- What AI expects from nanoelectronics
- What AI expects from nanoelectronics (Value chain)
- Lab tour of Tohoku University
(Places of visit)

Aobayama New Campus
Cyberscience Center Tohoku University
Tohoku University Tohoku Medical Megabank Organization



Last day, some members joined in Lab tour of Tohoku University. They could visit new special points of Tohoku University, Aobayama New Campus, Cyberscience Center and Tohoku Medical Megabank Organization.

Report from Malaysia (NanoMalaysia Berhad)

1. Nanotech Industrial Revolution 4.0 2018

NanoMalaysia Berhad and Universiti Teknologi PETRONAS (UTP) organised a one-day event called the Nanotech Industrial Revolution 4.0 2018 - Economic Development through Industry Revolution 4.0: Electrical, Electronic Devices, and Energy and Environment on 15 August 2018. The event was held at Sunway Hotel, Kuala Lumpur.

The Nanotech Industrial Revolution 4.0 2018 was a one-day forum with international and local speakers focused on current market trends, development, issues and the future of Industry 4.0 through the application of nanotechnology. It was focused on the areas of Electrical, Electronics and Energy, and Environment sectors.

The event was formatted as an interactive forum with Q&A sessions and opportunities for networking and business matching.

The keynote speaker was Professor Vladimir Falko, the Director of the National Graphene Institute UK and it was supported by NANOVerify Sdn Bhd and MIDA.



2. Graphene Malaysia 2018

Graphene Malaysia 2018 was held on 29th and 30th October 2018 at Menara MITI, Kuala Lumpur. The flagship event under the National Graphene Action Plan 2020 was organised by NanoMalaysia Berhad and Phantoms Foundation. Previous Graphene Malaysia events were held in 2016 and 2017. Graphene Malaysia 2018 was supported by the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC), Ministry of International Trade and Industry (MITI), the Malaysia International Development Authority (MIDA) and SCOPUS.

The event was jointly launched by the Deputy Minister of Energy, Science, Technology, Environment and Climate Change (MESTECC), Puan Isnaraissah Munirah Majilis and the Deputy Minister of International Trade and Industry (MITI), Dr Ong Kian Ming. The opening saw the witnessing of an MOU handover between Carbon Waters of France and Mont Aero Sdn Bhd and the launch of the Mi-Atomizer by MIMOS while during the Official Dinner, there was an MOU handover between NanoMalaysia Berhad and Universiti Teknologi PETRONAS (UTP). The dinner, attended by the Secretary General of MITI, Datuk Isham Ishak saw 4 companies graduated under the National Graphene Action Plan 2020. They are Goodway Integrated Industries Berhad, DRB- Hicom Defence Technologies Sdn Bhd, SOL Polymer Sdn Bhd and ACME Chemicals Sdn Bhd. The companies produced industrial products for applications in the areas of rubber, oil and gas, plastics and defence. The potential revenue for the 4 companies is RM2.8 billion with more than 1,400 high-value jobs added.

Fifteen local and 20 international speakers from US, UK, South Korea, China, Spain, Taiwan, Singapore, France and Japan presented on various topics on the graphene industry during keynote and plenary sessions at Graphene Malaysia 2018. There was also a special session by Skeltech on the second day of the event.

There was also an exhibition during Graphene Malaysia 2018 with more than 14 exhibitors participating. Graphene Malaysia 2018 was officially closed by the Deputy Secretary General of MESTECC, Dr Ramzah Dambul.





Report from Malaysia (NNC)

National Nanotechnology Centre (NNC), a division under the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC) is responsible for the coordination of research, development and all related activities of nanotechnology such as awareness programme in Malaysia.

NNC has conducted a few prominent programmes in 2018, such as:

1. NANOTECHNOLOGY AWARENESS PROGRAMME

Throughout the year, NNC MESTECC has conducted 15 awareness programme. The programmes were tailor made to suit each target group. NNC MESTECC went to selected Secondary Schools and conducted interactive nanotechnology talks which included hydrophobic properties demonstration, and quizzes. NNC MESTECC showcased exhibits like Blue Morpho Butterfly and Ferrofluid to gain interest and to create curiosity from the public crowd. For the hands-on activity, Buckyball Papercraft managed to capture attention of the young audiences.



2. NATIONAL NANOTECHNOLOGY PROGRAMME (NANOKEB 2018)

NanoKEB 2018 was held on 9-11th October 2018 at the Technology Park Malaysia. It is an annual event of NNC MESTECC which was held as a platform for stakeholders in nanotechnology to interact and discuss about the development and way forward of nanotechnology. NanoKEB 2018 comprises activities such as Interactive Talks by local university lecturers and researchers, and 4 Technical Workshops in collaboration with strategic partners which are University of Malaya, Malaysian Agricultural Research and Development Institute (MARDI), and SIRIM Berhad. Besides talks and workshops, NanoKEB 2018 also hosted Nanotechnology Innovative Research Project Competition (PIN). PIN was opened for the on-going Post-Graduate/ Master's Degree and Doctoral Degree students to present their original ideas / suggestions to overcome current environmental issues using nanotechnology.



3. OLYMPIAD NANOTECHNOLOGY MALAYSIA (ONM) NATIONAL COMPETITION 2018

The ONM 2018 national level competition was organised by the National Nanotechnology Centre (NNC), Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC) in collaboration with MIMOS Berhad as the venue partner and the Malaysian Solid State of Science and Technology (MASS) Association as the National Nanotechnology Olympiad Scientific Committee. ONM 2018 preliminary round screening test was held from 30th September till 10th October 2018 which attracted 210 participants. NNC MESTECC has shortlisted 30 best candidates for the final round of Nano Camp ONM 2018 which was held from 22nd to 26th October at MIMOS Berhad. Nanotechnology Applications for Green Transportation is chosen as the theme for 2018. The ONM Nano Camp participants were exposed to industrial and technical visits to MIMOS Semiconductor Sdn Bhd, The Malaysian Green Tech Corporation Berhad, and Hi-Tech Instruments Sdn Bhd. Speakers from The Malaysian Green Tech Corporation Berhad and The Malaysian Automotive Institute had enlighten the participants on the national policy and future initiatives in green technology and automotive industry. During the final day of the ONM Nano Camp, 6 groups had presented their proposal and solutions for the Nanotechnology Applications for Green Transportation theme to the judging team from MASS. The ONM 2018 Overall winner is Mrs Nadiah Ghazali from University of Malaya. The 1st runner-up goes to Mr Andrew Ng Kay Lup also from University of Malaya and the 2nd runner-up goes to Mr Alif Syafiq Kamarolzaman from Putra University of Malaysia. 7 participants received gold medal awards, 10 participants received silver medal awards and 10 participants received bronze medal awards.



4. NANOSAFETY COURSE 2018

National Nanotechnology Centre of the Ministry of Energy, Science, Technology, Environment and Climate Change Malaysia together with the United Nations Institute for Training and Research (UNITAR) jointly organized a Nanosafety Course at the Putrajaya Marriott Hotel from 12 to 16 November 2018. Nanosafety experts, Dr. Vladimir Murashov from the U.S. National Institute for Occupational Safety and Health (NIOSH) and Dr. Peter Kearns from the Organisation for Economic Cooperation & Development (OECD) were the invited speakers. Dr. Georg Kaarlaganis from UNITAR delivered his presentations via Skype.

The course was aimed at providing an insight on the safety of nanotechnology and nanomaterials. Its module, which mirrored UNITAR's 'eLearning Course: Introduction to Nanomaterial Safety', encompasses: introduction; hazards; occupational, population and environmental exposures; risk assessment and risk management; and global programs on manufactured nanomaterials. The total 67 course participants include stakeholders from local and neighbouring countries, namely the Philippines, Thailand and Vietnam. Participants acknowledged the course to be very informative and hope it could be organized again next year.



Report from Philippines

1. DOST-ITDI spearheads Stakeholder's Forum on Nanotechnology



The Department of Science and Technology-Industrial Technology Development Institute (DOST-ITDI), through its Nanosafety Project, held a stakeholder's forum last October 8, 2018 at The Bayleaf Hotel, Intramuros, Manila, Philippines. This forum that was attended by 47 participants coming from industry, government agencies, regulatory agencies, academe, professional organizations, and NGOs, aims to discuss the status of nanotechnology in the Philippines.

Dr. Annabelle V. Briones, Officer-in-charge of ITDI, in her opening remarks reported that safety on the use of nanomaterials is an international concern. Thus, the project on nanosafety was initiated in ITDI. While, Dr. Arnold Alguno, the Philippine representative of the Sub-Committee on Material Science & Technology (SCMST) of the ASEAN-COST, discussed the role of nanotechnology in driving economic growth and addressing many of the nation's most pressing needs and also shared that nanotechnology-related initiatives in the country must first be harmonized and nanosafety be assessed. Dr. Blessie A. Basilia, the project leader of the nanosafety project, on the other hand, shared that nanotechnology is already with us but its health and safety assessment still needs to be established in the Philippines. She briefly discussed the Nanosafety initiatives of different countries such as Thailand, Singapore, Malaysia, Pakistan, Iran, Austria, and UK, which the Philippines can use as a guide in the development of its own Nanosafety guidelines.

One of the highlights of the event is the Industry sharing wherein representatives from Boysen/Philippine Association on Paint Manufacturers (PAPM), Inc., Chemrez Technologies, Inc., Beta Nanocoating Philippines, Inc., and Nanofixit Inc showed how nanotechnology boosts the manufacturing industry such as the use of nano titanium dioxide in paints for cleaner air, development of self-healing/repairing coatings, coatings that increase tool life, and antibacterial nano cleaning products. One of the speakers also noted that the Philippines offers a great opportunity for entrepreneurs in nanotechnology.

Three regulatory bodies of the government such as the Bureau of Product Standards-Department of Trade and Industry (BPS-DTI), Food and Drug Administration (FDA) and Occupational Safety and Health Center – Department of Labor and Employment (OSHC-DOLE) discuss the international Standards, Guidelines and Protocols for Nanotechnologies (ISO/TC 229), nanosafety in cosmetics and occupational safety and health regulations in the Philippines, respectively.

2. Benchmarking Activity of Philippine Nanotechnology Delegation in Malaysia



The Philippine nanotechnology delegation from the Department of Science and Technology (DOST), University of the Philippines Los Baños (UPLB), Mindanao State University – Iligan Institute of Technology (MSU-IIT) and Occupational Safety Health Center (OSHC) conducted benchmarking activity through series of meetings and laboratory visits to the National Nanotechnology Centre-MESTECC, MIMOS Berhad, NanoCAT, University Malaya, SIRIM-IBRC, Biocompatibility Lab, Universiti Kebangsaan Malaysia and NanoMalaysia Berhad on Nov. 21-23, 2018. Malaysia’s National Nanotechnology Center - Ministry of Energy, Science, Technology, Environment and Climate Change (NNC-MESTECC) thru Mr. Mohd Helme Mohd Helan facilitated the visit of the Philippine delegation to the above mentioned nanotechnology facilities. The benchmarking activity is one of the milestone indicators and an output of the work component of the DOST-GIA project ‘Environmental, Health and Safety Research in the Risk Assessment of Nanomaterials (Phase 1)’ headed by Dr. Blessie A. Basilia. The said activity enabled the team to learn the best practices for the establishment of policy, standards, guidelines and protocols on Nanosafety; Nano-mark development and facilities for Nanosafety implementation.

3. Meeting on the formation of Technical Committee on Nanotechnologies (TC-85)



The Department of Trade and Industry’s Bureau of Philippine Standards (DTI-BPS) created the BPS Technical Committee (TC) 85 on Nanotechnologies last October 2018. The DTI’s Bureau of Philippine Standards (DTI-BPS) created the Technical Committee (TC) on Nanotechnologies TC-85 to develop the Philippine National Standards on Nanomaterials in line with the Department of Science and Technology (DOST) project on “Environmental, Health and Safety Research in the Risk Assessment of Nanomaterials”. This project is headed by Dr. Blessie A. Basilia of the Industrial Technology Development Institute (ITDI).

The first technical meeting for the establishment of the Technical Committee on Nanotechnologies (TC-85) was held last October 26, 2018 at the Advanced Device and Materials Testing Laboratory (ADMATEL), DOST Cpd., Taguig City, Metro Manila, Philippines. It was hosted by the Bureau of Philippine Standard (BPS) – Department of Trade and Industry (DTI). The meeting was attended by various stakeholders from the academe, government, consumer, testing institutions, and, industries. A brief presentation regarding the organizational structure of BPS and the composition of TC-85 was given by Ms. Ana Victoria Lim of BPS.

Report from Taiwan

1. WORKING GROUP REPORT / COMMERCIALIZATION

Taiwan participated in ISO/TC229 on behalf of ANF

The ISO/TC229 Nanotechnologies 21st Plenary Meeting 2018 was held from 29 October to 2 November 2018 in Kuala Lumpur, Malaysia. Three experts from Taiwan participated in this 5-day event on behalf of ANF, the Liaison member of ISO/TC229. There are currently 5 Working Groups (WGs) under TC229 which includes JWG1 (Terminology and Nomenclature), JWG2 (Measurement and Characterization), WG3 (Health, Safety and Environmental Aspects of Nanotechnologies), WG4 (Material Specifications), and WG5 (Products and Applications). Among these 5 WGs, WG5 was recently created and aims to describe how nanomaterials are enhancing their capability or functionality and then to develop performance-based standards for nano-enabled or nano-enhanced products and applications. This year WG5 invited Taiwan, Malaysia, and Iran to present their own system and share their experience. In Taiwan, 52 testing specifications with 106 testing items in the nano mark system have been established one after the other since 2003. In the talk “Taiwan Nano Mark System -- Performance-Based Specifications for Nano-Enabled Products”, Taiwan representative also illustrated the operation process of nano product certification and performance evaluation protocols used in the Nano Mark system, the world’s first nano-product certification system.



TANIDA held Nanotechnology Business Forum

In conjunction with 2018 TANIDA Plenary Meeting, the “Low-carbon Circular and Novel Functional Materials Forum” was held on 5 October 2018 in Taipei. This event focused on novel functional materials using nanotechnology and low-carbon circular materials, this event also exhibited prototypes using nanotechnology such as Precise Robotic Arm, Reflective Thermal Insulation Materials for Building, Deodorization Curtains in Car, and Biomaterials for Electronics and Food Packing. An upcoming event on 14 December is the “2018 Nanomaterials and Production Application Forum and Product Show” which includes topics of Graphene, Nanoclay, Nano Sol-gel, and Quantum Dot. TANIDA stands for Taiwan Nanotechnology Industry Development Association and was founded in 2004. Dr. Ting-Kuo Lee, current Vice President of ANF, was elected Chairman of TANIDA at the 2018 TANIDA Plenary Meeting in October. TANIDA aims to facilitate the integration of R&D efforts at universities, research institutions and

industry to accelerate the commercialization of nanotechnology and to meet industries' needs of developing high valued-added products and technology. In early 2017 Taiwan's Nano Mark established in 2003, also the world's first nano-product certification system, was transferred to TANIDA for the professional and independent functionality after 13-year operation under the auspices of the government.



2. WORKING GROUP REPORT / NANOSAFETY & RISK MANAGEMENT

Taiwan participated in the 2nd EU-Asia Dialogue on Nanosafety

The 2nd EU-Asia Dialogue on Nanosafety promoted by EU-Nanosafety Cluster (NSC) and Asia Nano Forum (ANF) in EU and in Asia respectively was held on 29 October in Vienna, Austria. Nanosafety experts from European and Asian countries gathered to get insights on actual and future human and environmental nanosafety research, to then discuss in the breakout sessions, and how to progress towards thematic collaboration. The representative from Taiwan, a founding member of ANF, was invited to share Taiwan's developmental experience of nanosafety research. Some comments raised by Dr. C.S. Yang from Taiwan in the 4th Breakout session "Nanosafety and Nanomedicine Characterization" includes the importance of comprehensive physical-chemical characterization, the importance of novel techniques like high energy X-ray and liquid TEM, dimensional measurement of product with nano objects by using at least two different ways, advantage of Taiwan's advanced technology of Micro/Nano process and achievements on Organ-on-Chip in international nanosafety research. Through this dialogue between EU-NSC and ANF, it is expected to form further international collaboration with all efforts on development of international nanotechnology standards.



3. PARTNERSHIP COLLABORATION

Taiwan continues to participate in the M-ERA.NET

Dr. Jason Chang, representative of National/Regional funding organization of Taiwan, the Ministry of Science and Technology (MOST), continued to participate in the M-ERA.NET Call 2018 Selection Meeting and Steering Board Meeting held in Bucharest, Romania on 18-19 September 2018. About 30 participants from Germany, Austria, Norway, Belgium, Switzerland, Italy, Spain, Hungary, Poland, Czech, Slovenia, Latvia, Romania, South Africa, and Taiwan gathered to determine the result of pre-proposal evaluation. The rule is that the proposal must have the support from at least two EU and associated countries and three funding agencies. Five pre-proposals with Taiwan teams' participation this year were recommended to submit full proposals. Six research topics of Call 2018 are *Multiscale modeling for materials engineering and processing (M3EP)*, *Innovative surfaces, Coatings and interfaces*, *High performance composites*, *Functional materials*, *New strategies for advanced material-based technologies in health applications*, *Materials for additive manufacturing*. All representatives at the Steering Board Meeting the next day also reached consensus on discussions about budget, progress of working group, achievement review since 2012, and topics for Call 2020. Taiwan Ministry of Science and Technology (MOST) joined as an observer in the same year as EU setup the M-ERA.NET program in 2012.

Taiwan hosts the Taiwan-US Nanotechnology Program Kickoff Meeting

2018 Taiwan/USAF Nanostructured Materials for Sensing and Sustainment -- Program Kickoff and Technical Exchange will be held in Taipei on 10-11 December, 2018. The new joint program "Taiwan/USAF Program on Nano-Structured Materials for Sensing and Sustainment" was initiated by Taiwan Ministry of Science and Technology (MOST) and US Air Force Office of Scientific Research (AFOSR). After individual evaluation of proposals and reaching consensus between both sides, the Joint Call selected ten projects with Taiwan and USAF teams' participations to be funded. The joint research teams will give presentations on proposed research plan. In addition to new research plan, experienced joint teams are also asked to share their past achievements. This program announced every 3 years has the Technology Readiness Level (TRL) between 1 and 1.5 and mainly focuses on six topics of materials research including *Novel multifunctional materials*, *Materials for quantum phenomenon*, *Materials for flexible energy systems*, *Materials for infrared sensing/imaging*, *Bio-inspired materials for sensing*, and *Predictive functional materials*. Cooperation between Taiwan and USAF could be traced back to 2004. The past decade has witnessed a successful model to further international collaboration on nanoscience and nanotechnology between Taiwan and USA. As a result of these joint projects, a number of international, particularly interdisciplinary research teams have been formed to challenge established boundaries in science and open up many new fields of research.

4. NANOTECH POLICY

Taiwan's IANTP to the next stage

Initiated in 2015 and under the auspices of the Ministry of Science and Technology (MOST), Taiwan's Innovation and Application of Nanoscience Thematic Program (IANTP) is reaching the next stage and reviewing the implementation strategies. In addition to current funded research from a basic "Concept Development" of Technology Readiness Level (TRL) to a more advanced "Prototype Validation", some added priorities are expected to strengthen IANTP's advantage, including fundamental issues for product or developing technology and development of crucial equipment or key technology for solving scientific or industrial problems between TRL2 and TRL4. Furthermore, a new program "Taiwan Accelerator Plus (TAcc+)" launched by Ministry of Economic Affairs (MOEA) recently also provides a connecting professional service between researcher and entrepreneur, such as free startup workspace, experienced mentors and abundant capital network, to help make a competitive team for startup. An orientation session for IANTP and TAcc+ will be held next month. By matching these policy programs, it is expected to inspire researchers' in-depth thinking of technology commercialization and to achieve their entrepreneurial ambition.

Report from Thailand

1. NANOTEC Researcher in “Women in Research at #LINO18” Blog



Spotlight on Dr. Jeerapond Leelawattanachai, NANOTEC researcher from Nanomolecular Target Discovery Laboratory is one of the young female scientists who appears in the interviews “Women in Research at #LINO18” blog. This blog is to feature young female scientists participating in the 68th Lindau Nobel Laureate Meeting to increase the visibility of women in research.

Dr. Jeerapond’s research work is focusing on tuberculosis (TB) diagnosis. These diagnosis incidences follow Thailand’s National TB programme of 2017 which is aiming to promote tuberculosis diagnosis research in the country. She is currently working on the development of affordable diagnostic tools for developing countries. In this interview, she answered the questions about her career path, her passion for science, her struggles and successes and also giving advice to other women in research.

In addition, Dr. Jeerapond is awarded the 2nd Young Scientist Award 2018 at the 68th Lindau Nobel Laureate Meeting in Germany. This award is presented to a person with advance scientific knowledge and having positively impact as the major global challenges for society with Science-based solutions.

2. NANOTEC Researcher in Asian Scientist Magazine

Dr. Pussana Hirunsit, NANOTEC researcher from Nanoscale Simulation Laboratory appeared in Asian Scientist Magazine, in the Column “Asia’s Rising Scientists” which aim to develop significant scientific knowledge.

Dr. Pussana is working on molecular simulations to understand and identify nanocatalysts which can be used to convert carbon dioxide into chemicals and fuels.

Nanocatalysts is one of the methods to lower the levels of atmospheric carbon which affected climate change. This method would convert the carbon dioxide by producing in large amount during manufacturing and burn the fossil fuels into chemicals and renewable energy sources.

In 2017, Dr. Pussana was awarded “The L’Oreal Thailand’s Women in Science” which is aiming to present researchers who are outstanding in creating sustainable solutions and contributing towards the development of the country.



3. Workshop on “High Quality Measurement for Advanced Manufacturing”



In September 2018, NANOTEC in collaboration with National Institute of Metrology (NIMT) organized the workshop on “High Quality Measurement for Advanced Manufacturing” which aims to distribute the knowledge, experience and method between scientists. Apart from the workshop, NANOTEC and NIMT organized a meeting with Inter Lab Comparison partners from 17 laboratories, 7 nations including Iran, Indonesia, Malaysia, Taiwan, Philippines, UK and Thailand to discuss the comparison results on nanoparticle sizes. The nanoparticles included polystyrene latex and TiO₂ (diameter ranged from 10 nm–700 nm). The measurement methods are open to all techniques such as Dynamic Light Scattering (DLS), Atomic Force Microscopy (AFM), Transmission Electron Microscopy (TEM), and Scanning Electron Microscopy (SEM).

4. Meeting on “Perovskite Solar Cells-Towards Commercialization”



In October 2018, Ministry of Science and Technology (MOST), NANOTEC in collaboration with SCG Chemicals Co. Ltd. organized the meeting on “Perovskite Solar Cells-Towards Commercialization” which aimed to demonstrate achievement in scientific and technological innovation and to promote research on Perovskite Solar Cell for commercialization.

This meeting is part of “CAS Innovation Expo (Bangkok) 2018” organized by the Ministry of Science and Technology (Thailand), the Embassy of the People’s Republic of China in Thailand, and Chinese Academy of Sciences (CAS).

Due to the ability of perovskite solar cell that can absorb light across wavelengths and except power conversion efficiencies, NANOTEC researchers from Nano functional coating laboratory decided to apply a new fabrication technique called Rapid Convective Deposition to improve the efficiency and stability of perovskite solar cell.

5. The MOA between NANOTEC (Thailand) and Shanghai University (The People's Republic of China)



In September 2018, NANOTEC organized the ceremony to sign a 3 years memorandum of agreement (MOA) with Shanghai University. This agreement aims to co-establish the 1st joint research and development center to enhance cooperation in conducting researches projects on Green Nonomaterials and related fields.

The center of joint research and development will be located on both side of the institutes. The research activity of this center will focus on the project related to Nanoscale simulation, Nanomaterials for energy and catalysts, Functional nanomaterials and interfaces, Nanoengineered soft materials for green environment and serve as a platform for exchange of academic staffs and students.

6. The Research Network Nanotechnology Collaboration in Thailand



In October 2018, NANOTEC organized the Research Network of Nanotechnology (RNN) collaboration signing ceremony which has an impact for 3 years. This agreement aims to increase researchers' mobility and involvement in research collaboration activities. The members of RNN consist of 11 research laboratories, 7 universities including Mahidol University, King Mongkut's University of Technology Thonburi, Chulalongkorn University, Kasetsart University, Khon Kaen University, Suranaree University, VISTEC. The examples of collaboration research projects are the development of medical monitoring, waste water treatment and multilayer paper-based device colorimetric and electrochemical quantification of metals.

7. The 2nd IMS (Japan) -NANOTEC (Thailand) Joint Research Meeting



In October 2017, NANOTEC and the Institute of Molecular Science (IMS), Japan, have established the collaboration by signing an agreement to strengthen research partnership and to organize the 1st IMS-NANOTEC Joint Research Meeting at NANOTEC, Thailand Science Park. This agreement aims to promote collaboration on science, technology and innovation activities including exchange of research and characterizations.

In November 2018, the 2nd IMS-NANOTEC Joint Research Meeting was held at IMS, Japan. The meeting schedule consisted of research collaboration discussion, laboratory tour for computational science and presentation. Recently, NANOTEC researchers from Nanoscale Simulation laboratory, Dr. Chompoonut Rungnim is the exchange researcher under the program “Institute for Molecular Science for the International Internship Program in Asia (IMS-IIPA)” for 3 months.

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