



Union Internationale Pour La Science, La Technique et Les Applications du Vide
International Union for Vacuum Science, Technique and Applications
Internationale Union für Vakuum Forschung, Technik und Anwendung

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IUVSTA Communications Committee Chair



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Executive Council Meeting 125, Hotel Natura, Rogla, Slovenia

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ECM 125 was held on Sunday, March 12th 2017 at the Hotel Natura, Rogla, Slovenia. The President of the Union, Lars Montelius, gave a welcome address in which he expressed his appreciation for all the nice developments during the previous triennium within the Union. Especially on the activities related to new member societies and committee work efficiency as well as the increased communication activities. These developments lay a good foundation for the activities during the present Triennium. Further, he expressed his willingness to serve the union the present triennium in a formally effective, but also active and creative way. New tools and means to showcase the Union in society, to improve the important educational and communication activities and to interact with the outer world shall be developed and implemented.



The Secretary General, Christoph Eisenmenger-Sittner expressed his thanks to the Korean Vacuum Society and especially Professor Geun Young Yeom for organizing an excellent ECM 123 and, even more important, an extremely successful and well received IVC 20, in conjunction with which the 19th General Meeting (GM 19) of the Union was held. Also the very first short meeting of the new representatives for the Triennium 2016 – 2019, ECM 124, was held during IVC 20. Within this meeting a top notch scientific presentation was given by Sander Otte on his work on data storage on the atomic level. This new item of a top level scientific presentations at an ECM was suggested and introduced by Lars Montelius and it is planned to have such talks also at other ECM's on an irregular basis. The Secretary General also thanked the organizers of ECM 126 for the organization of this first meeting of the Triennium which was held in a very relaxed and productive atmosphere. Concerning future events the Secretary General communicated that the venue and date of IVC 22 in 2022 was selected at ECM 123. IVC 22 will take place September 11th (Sun) – 16th (Fri), 2022 in Sapporo, Japan.

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The Secretary General reported on the status of negotiations with tentative new member societies. At GM 19 two new member societies were admitted to the Union unanimously: The Bulgarian Union of Physicists and the Vacuum Society of the Philippines. Both new members are willing to contribute 1 share to the finances of the Union. The emerging Societies Committee is keeping track on potential new members, among them Turkey and Romania. At this time no new developments are known.

Concerning future ECMs it was clarified that at ECM 125 no call for bids for future Executive Council Meetings was issued. A tentative schedule with optimum meeting dates for ECM's 127 – 129 was sent to the delegates recently. This schedule adapts to the relatively early IVC 21, July 1st – 5th, 2019 in Malmö, Sweden. Before the conference ECM 130 will be held from June 28th -30th, 2019. Bids for ECM 127 and 128 will be solicited at ECM 126, Sept. 29th – Oct. 1st in Sofia, Bulgaria.



Presents exchange between the IUVSTA President and the hosts



Midnight torch walk in the forest

Following the Secretary General's report the Treasurer presented the validated budget for 2016 and the proposed budget for 2017. After this presentation and a brief discussion of the financial data, ECM 125 was adjourned and the 4th Annual General Meeting of the Union (AGM 4) was opened. Within this meeting both budget items were unanimously approved by the present delegations. Thereafter ECM 125 was resumed and it was generally agreed that this form of holding the Annual General Meeting was much more efficient than having it after ECM.

In the following committee reports the work of the preceding committee meetings was recaptured. An important action was taken during the report of Publications Committee: The chair of this committee, Ivan Petrov proposed to rename the Committee to "Communications Committee" because this name would better reflect the main future work of the committee. The President agreed to this proposal and suggested this name change to ECM which unanimously approved.

N!B! The ECM126 web-site is open for registration: http://www.veit.dir.bg/iuvista/iuvista_ecm.htm



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80th IUVSTA Workshop “Ultra-low Emittance Light Source Vacuum Systems”, 24-28 October 2016, NSRRC, Hsinchu, Taiwan

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The goal of the “80th IUVSTA Workshop for the Ultra-low Emittance Light Source Vacuum Systems” is to find the best solutions on the vacuum design and the manufacturing processes for those upgrade projects, ongoing or being planned, of synchrotron light source facilities to achieve the ultra-low emittance of < 0.5 nm·rad in the coming years. There are many challenging issues on vacuum design and engineering under debate and need to be well evaluated by the vacuum experts from the worldwide institutes or facilities. This workshop provides a forum for intensive discussions after each presentation, and was held in October 24-28 (2016) in Hsinchu, Taiwan. The venue is the National Synchrotron Radiation Research Center (NSRRC) where a brand new 3 GeV synchrotron light source named “Taiwan Photon Source (TPS)” has completed the commissioning and just opened to the user operations about one month ahead of the workshop. There were about 50 participants from 26 organizations of 15 countries attended the 80th IUVSTA Workshop and enjoyed the fruitful presentations and technical discussions. Four-day program covers 34 presentations including 12 invited talks, a visit to the TPS light source, a welcome reception, an excursion, and a workshop dinner etc. activated the brainstorming on those critical issues of vacuum design for the new or upgrade projects. All the presentations were divided into 8 sessions covers the technical topics including the facility reports, the vacuum design concepts, the surface engineering and treatments, the NEG-coating technologies, the critical components, methodology of the manufacturing, and the gas pressure modelling. The facility reports include 3 new accelerator light sources, NSLS II (USA, 2015), TPS (Taiwan, 2016), and MAX IV (Sweden, 2016) being in operation or commissioning; 6 upgrade projects include ESRF-EBS (France), APS-U (USA), ALS-U (USA), SPring-8 II (Japan), Diamond II (UK), and PLS-III (Korea) under designing; and 2 new light source projects: KEK-LS (Japan) and HEPS (China) under planning. The most popular issue widely discussed in the workshop was the NEG-coating technologies implemented into the beam ducts of the storage ring vacuum systems that associated with 9 presentations. The operational experiences about the NEG-coated chambers built-in the existed accelerators including the LHC, LEIR, etc. at CERN (Switzerland), the Synchrotron SOLEIL in Paris (France), and the MAX IV in Lund (Sweden), presented the successful performance as expected. However, on the other hand, there are still more than half of new projects adopt different design aspects which may not be appropriate with the NEG-coating. There comes another issue about the reliability of the accelerators associated with the higher heat load from the synchrotron radiation during the higher beam-current operations. The design and manufacturing methodologies for the vacuum beam ducts and the critical vacuum components against the high heat load were widely discussed. Several participants from the manufacturing companies include VAT (Switzerland), SAES Getters (Italy), FMB (Germany), VACOM (Germany), Wave Power (Taiwan), as well as the research institutes include KEK (Japan), SPring-8 (Japan), BNL (USA), NSRRC (Taiwan), IMT (Slovenia), STFC (UK), and BINP (Russia), presented their manufacturing processes of the products, working experiences, trouble shootings, advices on the delivery scheduling controls, etc. were much valuable and helpful for the new projects on critical design, quality control, and entirely project control managements. For those upgrade projects of some facilities, a very tight schedule on replacing the entire machine by a new system is foreseen must be completed in a short period of shutdown interrupt the users’ experiments typically within one year. It may result in a different systematic design philosophy of the accelerator vacuum systems associated with the fast installation procedure at the beginning of the project. The modelling works on pressure distribution of the accelerator vacuum systems are always helpful on reviewing the overall design optimization. There are 4 talks presented the simulation



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programs about the pressure distribution based on the “MolFlow”, combined with the ray-tracing program of “SynRad” and the modelling from “3D-CAD”, were useful and becoming practical when implemented with more experimental data.



Though the fruitful daily coffee breaks were filled in the sessions, a workshop dinner at a seafood garden restaurant near the Hsinchu harbor were arranged for all the participants tasting the typical local seafood. Besides, a half-day excursion to visit the National Palace Museum and the Taipei-101 Tower in Taipei city was still attractive for everyone to browse the Chinese culture, enjoy the Taiwanese life, and refresh the spirit. On Oct. 28, the last day of workshop, all the participants were invited to the TVS-2016 Annual Symposium (30th anniversary of the Taiwan Vacuum Society) in conjunction with the 5th International Joint Symposium (co-organized by the Vacuum Societies of Korean, Japan, USA, China, Taiwan, and the Surface Science Society of Japan) in the National Tsing Hua University (NTHU) nearby the NSRRC for more interactions with the peoples from the academic and the industrial fields in Taiwan. All the information can be found from the website of the Taiwan Vacuum Society: <http://www.taiwanvacuum.org>.



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AIV, XXIII Conference – Florence, April 5 – 7, 2017

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The **AIV XXIII Conference** was held at Convitto della Calza, located in the heart of the city, unique among Florence conventions location for its combination of a 16th-century cloister and halls frescoed with masterpieces such as Francibigio's Last Supper.

The conference title was **Materials, Interfaces, Processes in Industrial and Basic Research Applications**

At his brief opening statement, the President of AIV, Luciano Scaltrito, remarked the importance of the vacuum in any branch of the science and motivated the great presence of companies to promote the partnership in projects focused in industrial needs, as fundamental goal of Horizon 2020 program.

(<http://www.aiv.it/aiv-xxiii-conference/>)

AIV XXIII Conference, opening

Main exponents from University, Research, Industry and IUVSTA have celebrated the opening:

Dr. Luciano Scaltrito - Opening of the Conference by AIV President

Dr. Lorenzo Bacci - Chief Executive Officer - University and Research - Regione Toscana

Dott. Davide Rogai - Confindustria Firenze

Dr. Antonio Raschi - President of CNR Firenze Research Area

Prof. Andrea Arnone - Vice Rector for Technological Transfer - Università di Firenze

Prof. Anouk Galtayries - Greetings by IUVSTA President-Elect

Dr. Espedito Vassallo - Introduction by the Chairman of the Scientific Committee

Particular mention is due to two speakers who kindly opened the Conference: Raffaella Fontana (CNR - INO) in introducing the application of the light for paintings' repair ("La luce per l'arte"); Guido Saracco (Center for Sustainable Futures, Istituto Italiano di Tecnologia, Torino) in talking about the life cycle of CO₂ (Groundbreaking technologies for CO₂ capture and utilization).

AIV XXIII Conference, scientific program

The conference program featured by oral and poster presentations that provided scientific information and ideas relevant to the topic sessions.

1 - Micro and Nano Scale Engineered Coatings and Films (Chairs: P. Ossi, E. Vassallo)

The session addressed the modification of surfaces, both by surface treatments and by depositing suitable surface layers of different thickness, depending on the required application.

2 - Biointerfaces and Surface Science (Chairs: M. Rocca, S. Iannotta)

This session dedicated to surface properties studied with surface science methods and to bio-interfaces. These topics are of major impact in catalysis, nanosized electronics, energy harvesting, biotechnology, and bio-medical research.



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3 - Nuclear Fusion Technology (Chairs: S. Dalbello, G. Mazzitelli)

ITER is the large-scale international scientific experiment that aims to demonstrate the scientific and industrial feasibility of fusion energy. The session focused on the latest developments on running and planned fusion experiments.

4 - Materials and Technologies for Additive Manufacturing (Chairs: L. Scaltrito, A. Lamberti)

The session covered the most recent advances in composite and functional materials, innovations for improved resolution, integration of different processing techniques and creative design for the next generation of additive manufacturing technology.

5 - Vacuum Technology (Chairs: E. Maccallini, P. Michelato and R. Cimino)

Facilities spanning from accelerator, interferometer and fusion reactor are nowadays pushing the vacuum technology towards new frontiers. Most of the time to achieve the required characteristics for each facility, very well controlled process conditions of the materials is required. In order to achieve this goal, special surface treatments and coatings are required like in the Superconducting Cavities, New Generation of Synchrotron radiation source, Large Interferometers.

6 - Ultracold quantum gases and precision spectroscopy (Chair: Catani)

The research sector in science of Quantum Gases and High-Precision Spectroscopy has shown impressive results. These achievements are intimately related to the exceptionally-high degree of optoelectronic and ultra-high-vacuum technologies embedded in such experimental systems.

7 - Industrial session (Chair: S. Ferrero)

The objective of this session was to provide a unique forum for the industry leaders to present their latest developments and the perspective on future technical challenges and discuss potential solutions.

AIV XXIII Conference, Student award and Gala dinner

Scientific Committee assessed the best poster and the prize giving ceremony celebrated to achieve the people involved, as reported in the following pictures.



Gala dinner, halls frescoed with masterpieces Francibigio's Last Supper



AIV President, Luciano Scaltrito and recipient of the AIV Student prize, Mariano Palomba



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AIV XXII Conference started with a Basic Vacuum Course and followed by six, high scientific level, conference sessions, one poster session and a dedicate session for industrial presentation. The **AIV Executive Board** promoted the new session dedicated to Materials and Technologies for Additive Manufacturing to cover the most recent advances in composite and functional materials.

Figure 1. Overview by Numbers



AIV XXIII Conference, endorsed by



AIV XXIII Conference, supported by



AIV XXIII Conference, Closing

The Conference aimed to raise the level of academic and industrial knowledge of the vacuum science and technology field. Thanks to the activity of the AIV officers, organizing and scientific committee members and participants, we believe this goal has been achieved.

On behalf of the organizing committee, we thank academic and industrial researchers who supported the conference and hope to see you again at AIV-24 in Naples, Italy.

Publication of papers

The XXIII AIV conference received also the endorsement of the American Vacuum Society to publish the best works in the Journal of Vacuum Science and Technology/A. A pre-Peer review of the main works will be done from an internal committee of AIV and then the main works will be submitted for review in JVST/A.

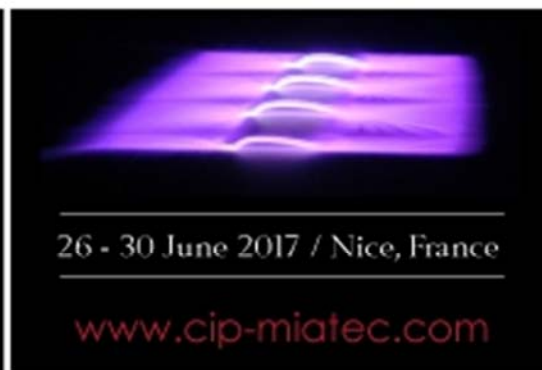
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Access the detailed Scientific program 

The 2 biennial conferences, **21st CIP & 5th MATEC**, held jointly in **Nice** from **June 26 to 30, 2017** will begin in 2 months.

Further to the reviewing process and the recent meeting of the Committees, the joined **Scientific program** have been built around **5 Plenary** and **15 Invited lectures**. After the 1,5 days devoted to **Short courses**, 5 half-days conferences with 19 sessions in the **11 topics** will allow more than 100 speakers to present their work.

THE PROGRAM IS NOW ONLINE!

WARNING! As Nice is a popular & touristic city, especially in this period, we recommend to you book quickly your accommodation: **Housing bureau link**. Please note a limited number of rooms have been secured **until May 15th**.

www.cip-miatec.com



CIP-MIATEC 2017 will be organized jointly with the **SVTM 2017** (International Exhibition on Vacuum and Surface Engineering), annual industrial exhibition on vacuum technologies and materials treatment that will bring together more than 120 companies very active in the field.



Organized by **Société Française du Vide (SFV)**
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As you already know, the **17th European Conference on Applications of Surface and Interface Analysis (ECASIA'17)**, will be held in **Montpellier** (France) from **24 to 29 September, 2017**.

REGISTRATION IS NOW OPEN!
EARLY BIRD DEADLINE: 7 JULY 2017

The call for papers is now closed and the 400 communications received from more than 40 countries are under reviewing. While the **Scientific committee** is building an **outstanding program** around the **Speakers already invited**, you can pre-register from now to participate to the Conferences and/or to the **Short courses** proposed to complete the event.

Indeed, these **4 short courses** will be the occasion for attendees to deepen their knowledge or discover new faces of this field:

- *X-Ray Photoelectron Spectroscopy (XPS/ESCA)* -
John T. Grant / 2 days: Sun. 24 & Mon. 25 Sept.
- *Gas-Surface interaction: theory, experiments and applications*
Irina Graur Martin / 1 Day: Tue. 26 Sept.
- *Quases-Tougaard XPS-Workshop*
Sven Tougaard / 1 Day: Thu. 28 Sept.
- *CASAXPS: extracting information from data*
Neal Fairley & Vincent Fernandez / 1 Day: Thu. 28 Sept.

> REGISTER NOW AND TAKE BENEFIT OF THE EARLY BIRD RATE

<http://www.ecasia2017.com/>



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VEIT 2017

School home

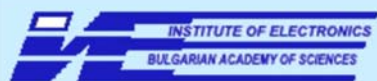
TWENTIETH INTERNATIONAL SUMMER SCHOOL ON VACUUM, ELECTRON AND ION TECHNOLOGIES

25 – 29 September 2017, Sozopol, Bulgaria

The main topics include:

- Thin films deposition
- Surfaces and thin films processing and analysis
- Coatings for advanced applications
- Plasma-surface interaction and plasma diagnostics
- Modeling and computer simulation

You are cordially invited to participate in the International Summer School on Vacuum, Electron and Ion Technologies. The 2017 edition is the 20th in a series of events organized with the aim to act as a forum for interchange and dissemination of knowledge and ideas on the latest developments in electron-, ion- and plasma-assisted technologies. It is a major scientific event and a meeting place for young scientists and distinguished speakers and experts from around the world focusing on the state-of-the-art scientific developments with emphasis on both the physics and the engineering aspects of these technologies which have become important research tools and production processes. The scientific program will include about 25 invited lectures and reviews. Contributed papers are also solicited and will be presented mainly in poster sessions. Informal atmosphere, combined with the spirit of the sea, will stimulate further collaborations and joint works.



Conference web-site: <http://www.veit.dir.bg/>

Note: ECM126 in Sofia will follow VEIT 2017

The Local Committee will assist with transportation between Sofia and Sozopol for people who will attend both events.

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AVS 64th International Symposium & Exhibition

Tampa Convention Center, Tampa, Florida
Symposium: Oct 29–Nov 3, 2017 | Exhibit: Oct 31–Nov 2, 2017

"Surfaces, Interfaces and Materials: A New Vision"

This year's annual meeting theme is intended to investigate, understand and provide solutions to the challenges for Next Generation technologies. A sampling of topics that encompass this theme will include:

- 2D Materials
- Actinides and Rare Earths
- Advanced Ion Microscopy
- Advanced Surface Engineering
- Applied Surface Science
- Biomaterial Interfaces & Biomaterials Plenary
- Electronic Materials and Photonics
- Exhibitor Technology Spotlight
- Fundamental Discoveries in Heterogeneous Catalysis
- Magnetic Interfaces & Nanostructures
- Manufacturing Science & Technology
- MEMS and NEMS
- Nanometer-scale Science & Technology
- Novel Trends in Synchrotron and FEL-Based Analysis
- Plasma Processing for Biomedical Applications
- Plasma Science & Technology
- Scanning Probe Microscopy
- Spectroscopic Ellipsometry
- Surface Science
- Sustainability
- Tandem MS
- Thin Films
- Tribology
- Vacuum Technology

Call For Abstracts
Deadline: **May 1, 2017**

Complete details available online at www.avs.org
5/2/2017 10:02:48 PM

Deadline extended to May 8th, 2017

Details available at www.avs.org
212-248-0200
avsnyc@avs.org



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AEPSE 2017

The 11th Asian-European International Conference on Plasma Surface Engineering & The 1st Global Plasma Life Fair

September 11 (Mon) to 16 (Sat), 2017

Lotte Hotel Jeju & Jeju International Convention Center , Jungmun, Jeju Island , KOREA

Call for Abstracts

The 11th Asian-European International Conference on Plasma Surface Engineering (AEPSE2017) and the 1st Global Plasma Life Fair on Sept. 11(Mon) to 16(Sat), 2017, in Jeju, Republic of Korea. The AEPSE2017 is organized by Asian Joint Committee for Applied Plasma Science and Engineering(AJC-APSE) in collaboration with European Joint Committee on Plasma and Ion Surface Engineering (EJC/PISE).

Abstract Submission : May 15, 2017

www.aepse2017.org

1. Topics of AEPSE2017

- Fundamental for Plasmas, Films and Coatings
- Plasma and Ion Sources, processes
- Semiconductor and Digital Electronics
- Flexible Electronics and Devices
- Tribological Coatings and
- Protective Coatings
- Functional Plasma Surface Treatment
- Optics and Opto-electronics
- Nano materials and Devices
- Green Energy and Environment
- Bio and Agriculture
- Medicine and Life Science
- Analysis and Evaluation
- Industrial Technology and New Applications

2. Topical Special Workshops

- Flexible Electronic Materials and HiPIMS
- Advanced Hybrid Surface Engineering
- Plasma Bio and Agriculture

3. Conference Proceedings

The papers will be published in the nominated SCI journals, "Surface Coatings and Technology", "Thin Solid Films" and "Journal of Biomaterials and Tissue Engineering" as regular papers.

4. AEPSE2017 Events

- Welcome Reception : Sept. 11(Mon)
- Global Network Evening : Sept. 13(Wed)
- Conference Banquet : Sept. 14(Thur)
- Global Fair Night : Sept. 16(Sat)
- Excursion of Jeju : Sept. 14(Thur)

5. Registration fees

- Pre-registration : US\$ 650
- Post registration : US\$ 700
- Student : US\$ 300





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Taiwan Association for Coating and Thin Film Technology - TACT 2017
National Dong Hwa University in Hualien, Taiwan, October 15 to 18, 2017
<http://tact2017.conf.tw/site/page.aspx?pid=901&sid=1130&lang=en>



Since TACT was established in December 1998, we are happy to celebrate her 19th birthday this year. This association has organized five international conferences so far, including Asia CVD 2005, TACT 2009, TACT 2011, and TACT 2013, and TACT 2015. TACT 2017 will be the sixth one. This TACT 2017 will be held from October 15 to 18, 2017 at National Dong Hwa University in Hualien, Taiwan.

As a continuity from 2009, 2011, 2013, and TACT 2015. TACT2017 is the fifth one in the row as the important biennial events for knowledge exchange and interactive platform for researchers and engineers from academia and industry. The TACT 2017 will cover a wide spectrum of aspects related to thin film and coating technologies for sustainable energy, semiconductor, optoelectronic, tribological, organic, biological, protective, and functional coatings. Special issues will be published in "Thin Solid Films" and "Surface and Coatings Technology"

The TACT 2017 features seven important symposia, one short course, two plenary, and ten keynote talks, namely:

- A. Coatings for sustainable energy
- B. Nanostructured and nanocomposite coatings
- C. Optical, semiconductor and optoelectronic films
- D. Tribological and protective coatings
- E. Organic and biological coatings
- F. Metallic and magnetic coatings
- G. Topical symposium: theory, simulation, and modeling; quantitative surface analysis
- SC. Short course: basic principles of XPS and peak-analysis (fitting) of real-data

Plenary Speakers

1. Prof. Lars Hultman, Linköping University, Sweden
2. Prof. John Rogers, Northwestern University, USA

Keynote Speakers

Dr. Andre Anders, Lawrence Berkeley National Laboratory, US
Prof. Paul Braun, University of Illinois at Urbana-Champaign, USA
Prof. Steve Bull, Newcastle University, UK
Prof. Li-Chyong Chen, National Taiwan University, Taiwan
Prof. Yip-Wah Chung, Northwestern University, USA
Dr. Ali Erdemir, National Argonne Laboratory, USA
Prof. Jr-Hau He, King Abdullah University Science and Technology, Saudi Arabia
Prof. Jong Su Kim, Yeungnam University, Korea
Prof. Masaharu Shiratani, Kyushu University, Japan
Prof. Sam Zhang, Nanyang Technological University, Singapore