Korea-Austria Nano Innovation Workshop

주한 오스트리아대사관 무역대표부와 나노기술연구협의회가 공동 주최하는 본 워크숍에서는 오스트리아와 한국의 나노기술 연구개발에 대해 소개하고, 오스트리아 파트너와 공동연구 프로젝트에 관심 있는 한국 연구자들을 위한 지원프로그램을 소개합니다. 한-오스트리아 나노 이노베이션 워크숍은 모든 참석자에게 개방되어 있습니다.

일시: 2019 년 7 월 3 일(수) 16:00~18:00
장소: 일산 킨텍스 제 1 전시장 210A 호
주관: Austrian Embassy Commercial Section, Seoul www.advantageaustria.org/kr
나노기술연구협의회
사회자: 안진호 교수(한양대학교)
진행언어: 영어

Time	Program
16:00~16:03	Ji Beom Yoo (President, Korea Nano Technology Research Society) *"Opening Remark"*
16:03~16:05	H.E. Michael Schwarzinger (Ambassador, Austrian Embassy Seoul) *"Opening Remark"*
16:05~16:10	Brief introduction of each participant (by moderator)
16:10~16:25	Dr. Friedrich Pesendorfer (CEO, Plasma Innovations and Inocon) *"Introduction of Austrian Nano R&D: Micro- and Nano-Layers produced with atmospheric plasma coating"* INOCON Technology is developing with numerous research projects atmospheric plasma coatings for micro- and nano-layers. The coatings are applied under atmospheric pressure. This atmospheric plasma coating technology is therefore suitable for automated production.The coatings can also be applied on temperature-sensitive substrates. Silicone- and glass-nano-layers can be applied on textiles, paper and practically on all types of plastic.The in line coating process is a dry process and is in coparison to galvanic processes wery environmentally friendly. The nano-layers can have e. g. barrier-functions, the hydrophilic glass layers improve adhesion properties up to 10 times and the hydrophobic silicon layers are non adhesive. The application range of these layers is very wide, from anti-fog layers to biocidal layers. INOCON would like to get in contact with Korean researchers interested in atmospheric plasma coating for research projects.
16:25~16:40	Dr. Yongsul Song (President, Amogreentech Co., Ltd.)

	"Development of High Thermal Conductive Carbon-Nanometal Composites by Plasma Treatment and Its Application for Injection Molding" As next-generation automobiles and electronic devices are becoming lightweight and highly integrated, demand for heat dissipation and EMI components is increasing. Recently, nanocomposites composed of high thermal conductivity ceramics, metals, carbon materials, and polymers have been actively studied, but commercialization has been delayed due to insufficient flow characteristics for injection molding. We have developed carbon-nanometal composite fillers using plasma treatment, and have produced a highly heat dissipation compound for injection molding that can solve heat and electromagnetic problems through compounding with polymers. Heat dissipation/EMI parts using carbon-nanometal-polymer compounds are expected to be applied to various industrial fields such as automobile, display, communication, energy and lighting due to excellent heat dissipation and EMI characteristics.
16:40~16:55	**Dr. Ernest E. Fantner** **(CEO, GETec Microscopy)** *"Introduction of Austrian Nano R&D:Correlative In-Situ Analysis of Nanostructures byCombination of AFM, SEM and FIB"* In histalk Dr. Fantner will present recent nano-mechanical analysis of free-standing 2D-layersand nanowires as well as analysis of selected individual nano-particles which can beperformed only if the AFM is seemingly integrated in the SEM host system.Furthermore, he will present first results from in-situ electrical and magnetic characterization of nanostructures using novel self-sensing cantilevers with functionalized tips for conductive, magnetic or thermal measurements which are fabricated by the 3D nano-printing technique using focused electron-beam induced deposition (FEBID). Together with the Department for Integrated Sensor Systems (DISS) at Danube University in Krems,GETec is participating in research projects with China and Taiwan and would like to explore cooperation possibilities with South Korea.
16:55~17:10	**Dr. Sang-Joon Cho** **(Vice President, Park Systems)** *" Innovations in AFM for Nanotechnology and Collaborative Efforts for Application Developments"* Atomic Force Microscope (AFM) is a powerful instrument in characterizing nanoscale features, but it is not yet widely used because of lacks of accuracy and repeatability in measuring absolute dimensions. However, the importance of AFM analysis is growing due to the strong necessity to investigate and characterize innovative nanomaterials. Finding new materials with innovative characteristics in nanoscale have helped

	guide many industries to grow and the newly found materials have contributed breakthroughs in sectors such as energy, transportation, and life science. Quantitatively characterizing electrical, magnetic, mechanical, and morphological properties of these materials are major concerns for both research and industrial sectors. Park Systems innovated AFM technology based on crosstalk-eliminated AFM and non-contact mode imaging. The emergence of the technology with such capabilities is of great interest for the semiconductor industry and others. Through active collaboration with our partners, it proved AFM could open the door to new ways to control the development of the material's facets and help increase efficiency and decrease failure and cost.
17:10~17:20	Dr. Roland Brandenburg (Coordinator International R&D Cooperation, Austrian Research Promotion Agency) *"Funding schemes and support for Austrian-Korean R&D cooperation"* Results of a survey conducted among the Austrian research community in 2018 show that there is substantial interest for cooperation with Korean partners, including the field of nano technologies and other areas. Cooperation agreements with KIAT and KOTRA support this interest and to facilitate and promote Austrian-Korean R&D cooperation. Also, the Beyond Europe funding programme was introduced in 2015 to support and enhance the international R&D cooperation of Austrian companies. Participation of non-European (e.g. Korean) research centers and companies is welcome and can be funded to some extent. In addition, funding by several thematic funding programmes is also accessible to Korean researchers in transnational R&D projects. Moreover, the M-ERA.NET network is open for Korean participation in advanced materials.
17:20~17:30	Jae Yong Song (Director, National Research Foundation of Korea) *"Overview of Nanotechnology Policy in Korea"* The nanotechnology in Korea was initiated by the Nanotechnology Development Promotion Act in 2001. During last two decades, there have been the drastic growth and outstanding outcome in nanotechnology of Korea, in the view of science and technology, including industry. The strategy in nanotechnology development is planned in detail, when being classified as nanomaterials, nano-devices, nano-bio, nano-energy/environment, nano-process/-measurement, and nano-safety. The status of government investment and key achievements is introduced. In this talk, I would also like to present the current R&D policy of Korea and an outlook for next decade of nanotechnology in Korea, for instance, National Nanotechnology Initiative of Korea, National NT Roadmap, several national R&D projects, and etc. It is noted that the nanotechnology of Korea has simultaneously been developed in industry side as well as S&T field. The nanotechnology of Korea is being developed on the basis of open innovation with domestic and global partners, i.e., S&T colleagues and industrial collaborators.

17:30 – 17:40	Q&A
17:40~17:45	*"Closing Remark"*
17:45~18:00	Networking with Austrian beverages