

The 11th International Nanotech Symposium
& Nano-Convergence Expo

NANO KOREA 2013

July 10-12 Coex, Seoul, Korea

Important Dates

Pre-registration Due : June 10, 2013

Full Paper Submission Due : July 25, 2013

Host Ministry of Science, ICT & Future Planning
Ministry of Trade, Industry & Energy

주최 미래창조과학부
산업통상자원부

Organizer Korea Nano Technology Research Society
Nano Technology Research Association

주관 나노기술연구협의회
나노융합산업연구조합

NANO KOREA 2013 Symposium



*Nanotechnology,
Pioneer for the Next Generation Industries*





Welcome Message 인사말



Sang-Hee Suh

Sang-Hee Suh 서상희

Organizing Chair

President, Korea Nano Technology Research Society

The 11th NANO KOREA Symposium will be held from July 10 to 12, 2013, in Coex, Seoul, Korea. The symposium has been held annually from 2003, and it is the Korea's largest symposium on nanotechnology. In commemoration of its 10th anniversary last year, we looked back on what we have achieved in R&D and industrialization of nanotechnologies. This year, NANO KOREA 2013 Symposium will serve as a meaningful forum to draw up a detailed vision and goal for nanotechnology development in the next 10 years.

Thanks to your tremendous support and encouragement, NANO KOREA Symposium would develop into a centerpiece of international nanoscience and technology exchange and development.

I would also like to take this opportunity to deeply thank all the members of the organizing committee and the supporting organizations for making this big event possible. I also extend my heartfelt gratitude to all participants who have shown tremendous interest in the symposium.

Thank you.

Nanotechnology is recognized as technology that can innovatively change future societies and solve many problems faced by humanity. Jointly hosted by the Korean Ministry of Science, ICT, and the Future Planning and the Ministry of Trade, Industry, and Energy, we have held NANO KOREA Symposium and Exhibition since 2003. NANO KOREA proposes to actively discuss and present a vision and R&D direction for the next 10 years at this year's symposium now in its 11th year.



Haiwon Lee

Haiwon Lee 이해원

Symposium Chair

Executive Vice-President, Korea Nano Technology Research Society
Professor, Hanyang University, Seoul

The symposium will have a special session jointly prepared and held with the United States to devise the future direction of research based on the current status of graphene research and presentations on research achievements in 9 technical sessions as well as 3 satellite sessions covering the key pending issues in core topical areas of nano science and technology. In addition, NANO KOREA has successfully conducted programs continuously for youths and non-experts to expand the base for nanotechnology and industry. We have also prepared customized programs for marginalized people on cutting-edge science literature.

It is my hope that the event would provide an opportunity to form various networks between participants for greater cooperation between the academia, research, and industries, and for Korea to leap forward as a nanotechnology stronghold.

Thank you.



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Keynote & Plenary Sessions 기조 & 주제강연

Keynote Speakers



Dr. Jin-Nyoung Yoo 유진녕 원장 (LG Chem Research Park, Korea)

Speech Title : Korean Chemical Industry and Nanotechnology in the Perspective of LG Chem's Cases

The importance of nanotechnology from an industrial viewpoint will be discussed with LG Chem's products where nanotechnology is implemented. By contemplating the significance of nanotechnology for future technology innovation strategy, personal perspectives on how to take advantage of nanotechnology for the development of industry in general will be presented.



Prof. Kohei Tamao (RIKEN, Japan)

Speech Title : Overview of the Status of S&T in Japan, Focusing on Material Science

As a nation damaged by the earthquake 2011, establishing the process to overcome various problems towards the robust and sustainable society is critical challenges to Japan. He will talk about 6 topics include "Restoring public's confidence in S&T", "The 4th S&T Basic Plan (MEXT) and "Several schemes of international collaborations for development of young generations"

Plenary Speakers



Prof. Jari Kinaret (Chalmers Univ. of Technology, Sweden)

Speech Title : The Graphene Flagship

He will describe the Graphene Flagship project which was recently selected a flagship of European research in the area of future and emerging technologies. He will briefly review the route to the one billion euro project, its present status and future, both in terms of implementation and the research program.



Prof. Gabriel Aeppli (Univ. College London, UK)

Speech Title : Will Silicon Matter for Future Technologies?

The 20th century has been distinguished by the silicon-based information revolution. We show that silicon has remained competitive either by surpassing the challengers or by becoming increasingly integrated with them. New developments make it likely that silicon technology will continue as a key platform for the next decades as well.



Technical Sessions 전문세션

Nano Electronics & Circuits

Theme : Nano electronic devices, circuits and device modeling for future technology

주제 : 미래기술을 위한 나노전자소자, 회로 및 모델링 기술

As the device size scaled down to nanometer regime, new physics based devices are being widely studied. This session will focus on novel nano electronic devices (nano CMOS, memory and spin transistors), circuit design and device modeling for future technology.

Invited Speakers

Laurie Calvet (Pais Sud Univ., France)

"Dopants for quantum manipulations"

Toshiro Hiramoto (The Univ. of Tokyo, Japan)

"Measurement and suppression of variability in scaled transistors"

Hyunsang Hwang 황현상 (POSTECH, Korea)

"RRAM-based synaptic device for neuromorphic applications"

Joon Yeon Chang 장준연 (KIST, Korea)

"Spin control for future electronic devices"

Soon Moon Jung 정순문 (Samsung Electronics, Korea)

"The outlook for the future trend of logic technology"

Mathieu Luisier (ETH Zürich, Switzerland)

"Atomistic device simulation: going beyond the ballistic limit of transport"

Nanophotonics & Plasmonics

Theme : Nanophotonics and plasmonics technologies for future information society

주제 : 미래 정보사회를 위한 나노 포토닉스 및 플라즈모닉스 기술

Recently, there has been increasing interest in the realization of meta materials, low-power-consumption optical interconnects, and high-efficiency photonic devices due to the rapid progress of nano photonics and plasmonics technologies that control light in the nano-scale dielectric or metallic structures. In this session, various nano photonic and plasmonic technologies will be introduced and discussed such as photonic crystals, surface plasmons, nano wires, quantum dots, meta materials, optical interconnects based on Si photonics, THz photonics, and high-efficiency LEDs, OLEDs, and solar cells.

Invited Speakers

James F. Cahoon (Univ. of North Carolina at Chapel Hill, USA)

"High-resolution control of silicon nanowire shape and composition for bottom-up photonics, plasmonics, and photovoltaics"

Kyung-Sang Cho 조경상 (SAIT, Korea)

"Applications of colloidal quantum dot assemblies for the efficient charge transport in the QD-LED and solar cell"

Il-Sug Chung 정일석 (Technical Univ. of Denmark, Denmark)

"Ultrahigh-speed hybrid laser for silicon photonic integrated chips"

Pieter Dumon (Ghent Univ., Belgium)

"Silicon photonic integrated circuits"

Seongsin Margaret Kim 김성신 (Univ. of Alabama, USA)

"THz metamaterials photonics and nanostructures characterization"

Bumki Min 민범기 (KAIST, Korea)

"Gate-controlled active graphene metamaterials for manipulation of terahertz waves"

Kyung Hyun Park 박경현 (ETRI, Korea)

"Frequency tunable terahertz transceiver"

Nano Materials: Synthesis, Assembly & Convergency

Theme : Exploring nanomaterials for convergence

주제 : 융합을 위한 나노소재의 탐색

Nanomaterials have been interested as building blocks for combining, fusing and/or hybridizing various technologies including ET, IT and BT. This symposium will focus on the potential of nanomaterials for these convergency. Outstanding research on the convergency of various technologies using nanomaterials will be introduced. The fabrication of devices as well as large scale assembly of nanomaterials will also be discussed toward industrialization of convergent nanomaterials.

Invited Speakers

Jae Young Choi 최재영 (SAIT, Korea)

"Graphene and beyond graphene"

Mark C. Hersam (Northwestern Univ., USA)

"Monodisperse carbon nanomaterial heterostructure devices"

Dong Ho Kim 김동호 (KIMS, Korea)

"Fabrication of flexible solar cells with nanowire-based transparent electrodes"

Yong-Hyun Kim 김용현 (KAIST, Korea)

"Nanoscale graphene science: chemistry, strain, and friction"

David Kisailus (UC, Riverside, USA)

"Solvothermal synthesis, growth mechanism, and performance of LiFePO₄ hierarchically assembled nanorods"

Hyunjoo Lee 이현주 (Yonsei Univ., Korea)

"Atomically dispersed platinum with high activity on electrocatalytic Reactions"

Umpei Nagashima (AIST, Japan)

"Nuclear quantum effect and temperature dependence on hydrogen adsorption site of hydrogen store material, Zeolite-templated carbon"

Nano Fabrication & Manipulation

Theme : Nanofabrication and manipulation technologies for some 3D functional structured nanodevices

주제 : 기능성 나노소자를 위한 3D 나노 Fabrication 및 Nanoscale object manipulation 기술

Nanofabrication and manipulation technologies can be applied in various research/commercial fields, such as NT, BT, IT and ET as a core technology. This session will focus on nanofabrication for functional nanodevices and nanoactuators with 3D nanostructures. Also, scanning probe microscopy based manipulation, N/MENS channel/gripper, ALD and nanoscale object manipulations will be focused.

Invited Speakers

Kee Bong Choi 최기봉 (KIMM, Korea)
"Piezo stages for nano manufacturing system"

L. Jay Guo (Univ. of Michigan, USA)
"Roll-to-roll nanomanufacturing processes with applications in display and organic photovoltaics"

Dae Joon Kang 강대준 (Sungkyunkwan Univ., Korea)
"Nanoscale pattern replication of various functional materials by using electrohydrodynamic lithography"

Stefan Landis (LETI, France)
"8" and 12" wafer scale nano imprint lithography"

SungWoo Nam 남성우 (Univ. of Illinois, USA)
"Nanoplasmonic fabrication of optofluidic graphene nanopores"

Sang Hyun Oh 오상현 (Univ. of Minnesota, USA)
"Engineering metallic nanostructures for plasmonics and nanobiotechnology"

Graphene & Carbon-based Nanotechnology

Theme : Novel properties of graphene and carbon-based nanomaterials and their applications

주제 : 그래핀 및 탄소기반 나노소재의 새로운 특성 및 응용기술

Since carbon nanotubes were discovered in 1991, there have been extensive efforts worldwide to utilize carbon-based nanomaterials in various applications. The discovery of single-layer graphene in 2004 gave a fresh impetus to such efforts and renewed interest in carbon-based nanotechnology. Superb mechanical, chemical, and physical properties of carbon-based nanomaterials are expected to contribute to novel applications in various areas. Recently, the feasibility of carbon-based electronic and photonic devices, as well as composite structural materials and bio-medical applications, has been demonstrated. In this session, the latest development in graphene and carbon-based nanotechnology will be presented, with emphasis on various applications and the possibility of industrialization of such technologies.

Invited Speakers

Jong-Beom Baek 백종범 (UNIST, Korea)
"Large-scale production of edge-selectively functionalized graphene nanoplatelets"

Wonbong Choi 최원봉 (Univ. of North Texas, USA)
"Carbon nanomaterials for high efficiency energy applications"

Chang-Soo Han 한창수 (Korea Univ., Korea)
"Voltage generation from carbon nanomaterials in a fluid flow"

Seunghun Hong 홍승훈 (Seoul Nat'l Univ., Korea)
"Hybrid nanobio-devices based on carbon nanostructures and biomolecules"

Jiyoung Oh 오지영 (Univ. of Texas at Dallas, USA)
"Electro- and photo-thermal actuation of graphene oxide nanoribbon mats"

Kazuhito Tsukagoshi (NIMS, Japan)
"Semiconductive property in atomically thin films for future nano-electronics"

Nanobiotechnology & Nanomedicine

Theme : Biological and medical applications of nanotechnology

주제 : 생물학과 의학으로의 나노기술의 응용

Advances in nanoscience and technology have a great impact on biological and medical sciences with tools for manipulating biological entities, such as DNAs, proteins, and cells. Especially, they have the potential to revolutionize the way the medical community approaches modern disease management, and to provide a new type of platforms for biological studies. This session will focus on recent advances in innovative nanotechnology for early disease diagnosis and nanoscaled manipulation of biological entities.

Invited Speakers

Peixuan Guo (Univ. of Kentucky, USA)
"Assembly of biomimetic viral DNA packaging nanomotor toward bioreactors, single molecule sensing, and high throughput DNA sequencing"

Kwon-Soo Ha 하권수 (Kangwon Nat'l Univ., Korea)
"Quantitative proteomic profiling of protein activity and interactions using protein arrays"

Vadim Kessler (Swedish Univ. of Agricultural Sciences, Sweden)
"Molecular mechanisms for the synthesis of metal oxide nanomaterials for biomedical applications"

Joerg Lahann (Univ. of Michigan, USA)
"Multicompartmental particles and fibers"

Yoon-Sik Lee 이윤식 (Seoul Nat'l Univ., Korea)
"Smart nano probes for bio-applications: SERS probes for in vitro & in vivo multiplex detection"

Michiya Matsusaki (Osaka Univ., Japan)
"Control of cell surface microenvironments by LbL nanofilms for development of 3D-human tissue modes"

Je-Kyun Park 박제균 (KAIST, Korea)
"Biofunctional microfluidics for cell-based analysis and screening"

Jianhua Qin (Chinese Academy of Sciences, China)
"Facile synthesis of bioinspired micro/nano materials on a chip"

Vladimir V. Tsukruk (Georgia Institute of Technology, USA)
"Cell surface engineering with synthetic and natural LBL nanoshells"

Nano Energy & Storage

Theme : Nano-energy convergence technology for energy innovation

주제 : 에너지 혁신을 위한 나노-에너지 융합 기술

In order to solve the problems related to energy, such as climate change, and depletion of fossil fuels, technology innovation is required. Innovation of energy technology can be achieved by convergence with others such as nano and bio technologies. In many convergence technologies, nano-energy convergence is considered very innovative and prospective. In the present session, current status of nano technology converging with energy including fuel cells, batteries, solar cells, super capacitors, and hydrogen energy will be discussed.

Invited Speakers

Kyung Yoon Chung 정경윤 (KIST, Korea)

"A study on the improvement of thermal stability and electrochemical properties of cathode materials for lithium secondary batteries using In situ and time-resolved X-ray diffraction techniques"

Su Ha (Washington State Univ., USA)

"Molybdenum dioxide (MoO₂)-based SOFC"

Dong Whan Kim 김동환 (Korea Univ., Korea)

"To be announced"

Shogo Mori (Shinshu Univ., Japan)

"Issues for the development of highly efficient dye-sensitized solar cells"

Nigel Mark Sammes (POSTECH, Korea)

"To be announced"

Yung-Eun Sung 성영은 (Seoul Nat'l Univ., Korea)

"Nanoparticles for fuel cells"

EHS, ELSI & Policy

Theme : EHS, ELSI and Policy for sustainable and innovative nanotechnology

주제 : 지속가능하고 혁신적인 나노기술을 위한 EHS, ELSI 및 정책

Nanotechnology is today at the crossroad between the sustainable development and the innovative development. For next generation jump of nanotechnology both should be considered to be necessary. As for sustainable development of nanotechnology, Environment, Health, Safety(EHS) issues and Ethical, Legal, Societal Implication(ELSI) issues related to EHS are important. In addition to these subtle issues various policies to support innovative research and development of nanotechnology and activate the emerging market of nanoproducts are also needed for innovation of nanotechnology. This session aims to encourage interdisciplinary discussion on above issues, including related different disciplines such as toxicology, health science, sociology, ethics, management, policy studies etc.

Invited Speakers

Sangki Jeong 정상기 (KISTEP, Korea)

"Mini-review: policy implication of the characteristics of nanotechnology innovation and NT related industry in Korea"

Chang Woo Kim 김창우 (Nat'l Nanotechnology Policy Center, Korea)

"Nanotechnology policy direction on the new government of Korea"

Jong-Ku Park 박종구 (Nano-Convergence Foundation, Korea)

"To be announced"

IlJe Yu 유일재 (Hoseo Univ., Korea)

"In vitro and in vivo genotoxicity of multi-walled carbon tubes (MWCNTs)"

Emerging Nanotechnology

Theme : Basic nanoscience leading to innovative nanotechnology

주제 : 혁신적 나노 기술 개발의 기반이 되는 나노 과학

Due to the development of experimental facilities which can be exploited to fabricate, manipulate, and characterize materials in nano-scale, we can observe many emerging phenomena which have not been reported in large-scale. Most of the emerging phenomena are not able to be commercialized in near future and simply classified by traditional taxonomy although they may offer emerging technology or device which can open new market. In this session, emerging phenomena in nano-scale, which currently attract much attention, will be introduced and the feasibility of their applications will be also discussed.

Invited Speakers

Tomoji Kawai (Osaka Univ., Japan)

"Integrated gating nanopore devices for single molecule DNA and RNA sequencing"

Ki-Bum Kim 김기범 (Seoul Nat'l Univ., Korea)

"Fabrication of flexible solar cells with nanowire-based transparent electrodes"

Min-Ho Lee 이민호 (Kyungpook Nat'l Univ., Korea)

"Nanoscale graphene science: chemistry, strain, and friction"

Masahiko Hara (Tokyo Institute of Technology & RIKEN, Japan)

"Something new in nano-, bio- and information technology"

Jeong Young Park 박정영 (KAIST, Korea)

"Hot electron-based chemical and solar energy conversion with metal-semiconductor nanostructures"

Thalappil Pradeep (Indian Institute of Technology Madras, India)

"Affordable and clean drinking water through nanomaterials"

Ki-Bong Song 송기봉 (ETRI, Korea)

"To be announced"

Han Woong Yeom 염환웅 (POSTECH, Korea)

"Exotic spin and charge carriers along self-assembled atomic wires"

Graphene Symposium 2013 July 11, Coex, Seoul

Joint Symposium of US-KOREA Workshop on Nanotechnology (JSNT2013) in conjunction with NANO KOREA 2013

Since the discovery of single-layer graphene in 2004, there have been extensive efforts worldwide to study and utilize this unique carbon material with superb mechanical, chemical, and physical properties. Recently, the feasibility of graphene-based electronic and photonic devices, as well as composite structural materials and bio-medical applications, has been demonstrated. Development of a 30-inch touch screen based on graphene by Sungkyunkwan University is one of many examples. Both Nano Korea and US-Korea Workshop on Nanotechnology have actively included graphene as one of the most important topics and invited renowned speakers in their symposiums. This year, Nano Korea and US-Korea Workshop on Nanotechnology are hosting jointly Graphene Symposium 2013 to introduce the latest developments in graphene. We hope that this joint symposium provides a good forum to discuss what needs to be done to accelerate its applications.

Plenary Speaker

Prof. Jari Kinaret (Chalmers Univ. of Technology, Sweden)
"The graphene flagship"

Invited Speakers

Prof. Liming Dai (Univ. of Dayton, USA)
"To be announced"

Prof. Byung Jin Cho (KAIST, Korea)
"Graphene towards electronic device and systems"

Prof. Stephan Roche (Catalan Institute of Nanotechnology, Spain)
"Transport in polycrystalline graphene, magnetism and spin relaxation phenomena"

Dr. Kwang-Seop Kim (KIMM, Korea)
"Reliability of CVD-graphene transferred on flexible substrates"

Prof. Duck Joo Yang (The Univ. of Texas at Dallas, USA)
"Exfoliated graphene nanoplatelets-V2O5 composite electrodes for supercapacitor application"

Prof. Byung Hee Hong (Seoul Nat'l Univ., Korea)
"Graphene-based biomedical applications and advanced chemical analysis"

Prof. Manish Chhowalla (Rutgers Univ., USA)
"Chemically exfoliated 2D materials"

Prof. Jiwoong Park (Cornell Univ., USA)
"Graphene and boron nitride for atomically thin circuitry"

Prof. Sunmin Ryu (Kyung Hee Univ., Korea)
"Optical separation of mechanical strain, charge doping and electronic coupling in graphene"

Organizing Committee

Korea

Dr. Sang-Hee Suh (KIST, Organizing Chair/Nano Korea & Co-Chair/JSNT 2013)

Prof. Soon Hyung Hong (KAIST, Co-Chair/JSNT 2013)

Prof. Hyeonsik Cheong (Sogang Univ., Session Chair/Nano Korea 2013)

Prof. Jong-Hyun Ahn (Yonsei Univ., Session Chair/Nano Korea 2013)

USA

Dr. Byung-Lip Lee (AFOSR, Co-Chair/JSNT 2013)

Dr. Tammy Low (AOARD, Co-Chair/JSNT 2013)

Prof. Duck Joo Yang (The Univ. of Texas at Dallas)

Sponsors



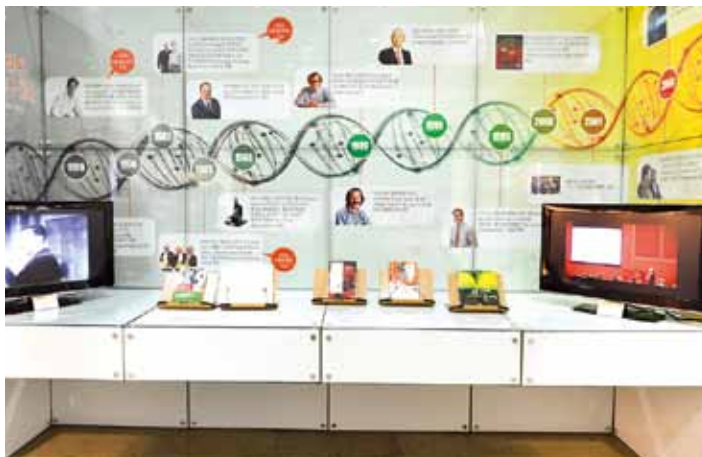
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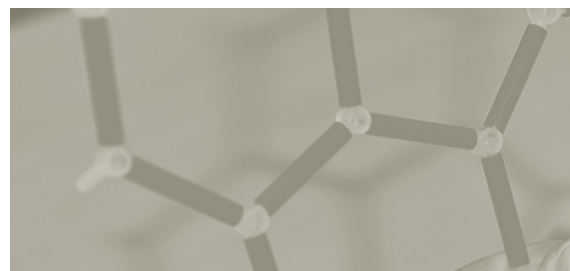


Korea Nanotechnology Research Society



Public Sessions 일반세션

- 나노기술을 이용한 미래 생명기술 Public Lecture
- 점점점... 나노 속으로 Education Program I
- 도심 속의 나노캠프 Education Program II
- 나노, 무엇을 배우나요? Education Program III
- 과학교사 연수 프로그램 Workshop for Science Educators





Public Sessions 일반세션

나노코리아에서는 나노전문가 뿐만 아니라 누구나 함께 참여할 수 있는 다양한 프로그램을 준비하고 있습니다. 일반세션은 한국어로 진행되며, 사전에 신청하시면 무료로 참여할 수 있습니다. 참가신청은 나노코리아 심포지엄 홈페이지에서 가능하며, 프로그램의 특성상 조기 마감될 수 있습니다. (Korean Only)

• 나노기술을 이용한 미래 생명기술 Public Lecture

일시 : 7월 10일(수), 14:00~16:00 위원장 : 최정우 (서강대학교)

프로그램

박문석 (분당서울대병원) “뇌성마비의 치료 및 관련 연구”
이종범 (서울시립대학교) “핵산을 이용한 생체재료의 제조 및 의학적 응용”
공경철 (서강대학교) “사람을 걷게 하는 로봇 기술”
박한수 (중앙대학교) “의료공학에 있어서 나노소재의 소개 및 적용”

• 점점점... 나노 속으로 Education Program I

일시 : 7월 11일(목), 14:00~17:00 위원장 : 고원배 (삼육대학교)

프로그램

강연 : 고원배 (삼육대학교) “재미있는 나노 과학의 세계”
신경호 (한국과학기술연구원) “조물주 따라하기”
동영상 시청 : “마법의 기술 나노”
실험 : 연잉 효과 실험, 금 나노 입자 실험, 광 촉매 실험, 나노 섬유 실험
탄소 나노 화합물 모형제작

• 도심 속의 나노캠프 Education Program II

일시 : 7월 12일(금), 10:30~15:00 위원장 : 민준홍 (중앙대학교)

프로그램

강연 : 민준홍 (중앙대학교) “금은 안 변한다고? 금도 변한다”
박태현 (서울대학교) “나노와 바이오”
동영상 시청 : “나노기술과 에너지”
실험 : 금나노 입자 합성, 합성된 나노입자 측정(SEM 전자현미경 이용)

• 나노, 무엇을 배우나요? Education Program III

일시 : 7월 11일(목), 17:00~18:00 위원장 : 황윤희 (부산대학교)

프로그램

박경완 (서울시립대) “한국 대학의 나노과학기술교육”
소대섭 (국가나노기술정책센터) “한국의 나노기술 정책”
신훈규 (포항나노기술집적센터) “Career Vision with NANO TECHNOLOGY”

• 과학교사 연수 프로그램 Workshop for Science Educators

일시 : 7월 12일(금), 11:00~18:00 위원장 : 신경호 (한국과학기술연구원)





Satellite Session 협력세션

• Germany-Korea Nano-Technology Joint Workshop

Host : gwSoar, Saarland Economic Promotion Corporation

Date & Time : July 11(Thu.), 14:00~17:00

Place : Room 307C

• Korea-Singapore Satellite Conference: Nanobio Convergence

Host : Asian Research Network, Nanyang Technological University, Ajou University

Date & Time : July 11(Thu.), 09:00~17:00

Place : Room 318C

• Translational Research in Nanomedicine

Host : Korean Society for Nanomedicine

Date & Time : July 12(Fri.), 09:00~16:00

Place : Room 301



Awards 시상안내

• NANO KOREA Awards

To promote nanotechnology development and encourage researchers, awards are given for two categories, research innovation and industrial technology, in recognition of outstanding technology, product development and research result. Works produced within the latest one year, and presented at Nano Korea will be judged. Any work with similar content that has been previously awarded will be excluded.

나노기술 개발을 촉진하고 연구자의 사기를 진작하기 위해 나노분야에서 우수한 기술, 제품 및 연구성과에 대해 연구혁신분야와 산업기술분야로 나누어 시상합니다. 최근 1년 이내 이루어진 성과로, 나노코리아에서 발표된 내용을 대상으로 심사가 이루어집니다. 동일 내용으로 기 포상된 경우는 제외 됩니다.

• Best Poster Awards

When you submit the abstract through the website, you have the option to select whether you would like to be considered as the candidate of the award. The examiner will visit during the poster presentation time, and the nominated Best Posters will be presented again at the Best Posters Presentation place for the "Grand Prize". Best poster awards will be held at the last day of the symposium.

※ 우수 포스터에 선정된 발표자께서는 별도의 장소에서 우수 포스터 발표를 할 수 있는 기회를 드리며, 시상식에서 상장과 부상이 수여됩니다.

• Full Paper Submission 논문제출안내

Full Paper Submission Due: July 25(Thu.), 2013

논문제출 마감일: 7월 25일(목)

Paper submission is not required and is entirely voluntary. Full Papers submitted to Nanokorea 2013 will be published to a special issue of Journal of Nanoscience and Nanotechnology (JNN) as a part of "Nanotechnology in Korea 2013" after peer reviews.

논문은 JNN 게재를 원하실 경우에만 제출하여 주십시오. 제출하신 논문은 심사 후, JNN special issue, "Nanotechnology in Korea 2013"으로 출간 될 예정입니다.

Program at a Glance

| Date Time | July 10(Wed.) | July 11(Thu.) | July 12(Fri.) |
|--------------|---|---|--------------------------|
| | Registration | Registration | Registration |
| | Poster Set-up | Poster Set-up | Poster Set-up |
| 9:00 | Keynote Speech Jin-Nyoung Yoo (Room 401) | Plenary Speech Jari Kinaret (Room 402) | Poster Presentation |
| 10:00 | Keynote Speech Kohei Tamao (Room 401) | Poster Presentation | TS05 TS07 TS08 |
| | Coffee Break | | |
| 11:00 | Poster Presentation | TS02 TS03 TS04 TS06 TS07 | |
| 12:00 | Lunch | Lunch | Lunch |
| 13:00 | TS01 TS03 TS05 TS06 TS09 | Plenary Speech Gabriel Aeppli (Room 402) | Exhibition Tour |
| 14:00 | Exhibition Tour | Exhibition Tour | Best Poster Presentation |
| 15:00 | Public Lecture | TS02 TS03 TS04 TS06 TS07 | TS05 TS07 TS08 |
| 16:00 | Exhibition Tour | Break | Best Poster Awards |
| 17:00 | TS01 TS03 TS05 TS06 TS09 | TS02 TS03 TS04 TS06 TS07 | |
| 18:00 | | | |
| 19:00 | | Banquet | |

- TS01** Nano Electronics & Circuits
TS02 Nanophotonics & Plasmonics
TS03 Nano Materials: Synthesis, Assembly & Convergency
TS04 Nano Fabrication & Manipulation
TS05 Graphene & Carbon-based Nanotechnology
TS06 Nanobiotechnology & Nanomedicine

- TS07** Nano Energy & Storage
TS08 EHS, ELSI & Policy
TS09 Emerging Nanotechnology

* This schedule is subject to change without notice.
 상기 프로그램은 사전 공지 없이 변경 될 수 있습니다.



Venue 개최장소

Coex (www.coex.co.kr)

Coex, World Trade Center 159 Samseong-dong, Gangnam-gu, Seoul, South Korea

서울시 강남구 삼성동 159 무역센터 코엑스

Tel: +82-2-6000-0114,

Fax: +82-2-6000-1302

NANO KOREA will be held at the Coex convention & exhibition center, an award winning facility equipped with state-of-the-art conference facilities. The center has successfully hosted many of Korea's most significant events, including the G20 Seoul Summit in 2010.



Registration 등록

| | Pre-Registration 사전등록 (~June 10) | On-Site Registration 현장등록 (July 10~12) |
|--------------|-------------------------------------|---|
| Regular (일반) | KRW 350,000 (USD 350) | KRW 400,000 (USD 400) |
| Student (학생) | KRW 130,000 (USD 130) | KRW 160,000 (USD 160) |

Registration Fee Includes

- Opportunity to present the accepted abstract
- Admission to NANO KOREA 2013 exhibition
- Conference proceeding
- Lunches (3 days)
- Invitation to Banquet (Only with Regular Registration)

* Parking permits would NOT available. 주차권은 제공 되지 않습니다.

* Students must bring a current and valid photo identification card.

학생은 반드시 신분을 확인할 수 있는 학생증을 등록대에 제시해주셔야 합니다.

Cancellation Policy

- Cancellation must be notified to the Secretariat in writing by e-mail (symposium@nanokorea.or.kr) or fax (+82-2-573-6208)

등록을 취소하고자 할 경우 등록취소신청서를 홈페이지에서 다운 받아 작성 후 이메일이나 팩스를 통하여 사무국으로 제출하여야 합니다.

- All refunds will be made after the conference for administrative reasons, and all bank services charges and all administration fees will be deducted from all conference registration refunds.

모든 환불은 행정적인 이유로 심포지엄 개최 이후에 이루어지며, 은행 수수료 및 기타 비용은 환불비용에서 공제됩니다.



Sponsorship 후원안내

나노코리아 2013 심포지엄에 다양한 방법으로 후원하실 수 있습니다.

| Section | Gold | Silver | Bronze |
|--|----------------|----------------|----------------|
| Amount (KRW) 금액 (원) | 10,000,000 | 5,000,000 | 2,000,000 |
| Logo in Main Board 메인보드에 후원사 로고 표기 | O | — | — |
| Logo on Webmail 홍보 웹메일에 후원사 로고 표기 | O | O | — |
| Advertisement in Program book 프로그램 책자 광고 | Color / 1 page | Color / 1 page | Color / 1 page |
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| Free Registration 무료등록 | 10 | 5 | — |
| Invitation Social program 공식행사 초청 | 3 | 2 | — |
| Joint Benefit 공통혜택 사항 • Printed logo in program book as an "NANO KOREA 2013 Sponsor" 프로그램 책자 내 후원기관 표기 • Logo printing in sponsor directory board 후원사 보드에 공식 후원 로고 표기 | | | |

* 자세한 사항은 심포지엄 사무국으로 문의하여 주십시오.

E-mail : symposium@nanokorea.or.kr Tel: 02-573-6207, 6210



Exhibition 전시안내

Int'l Nano-Convergence Technology Business Platform

NANO KOREA 2013 Exhibition will be held together with Microtechworld, Laser Korea, Advanced Ceramics Exhibition, Mockup Design & Prototype Manufacturing Exhibition. A Total of 350 companies / 600 booths from 15 countries will exhibit cutting-edge nanotechnology and application products to create a wide range of business through technology convergence.

이번 전시회는 350기관(기업)이 600부스 규모로 나노코리아, 마이크로테크월드, 레이저코리아, 첨단세라믹 전시회, 시제품 설계제작 산업 전시회 총 5개 신기술분야의 전시회를 합동 개최함으로써 산업기술간 협력과 교류의 범위를 확대함과 동시에 실질적인 비즈니스 프로그램을 마련하여 비즈니스창출에 역점을 두고 있습니다.

Exhibition Overview 행사개요

Period : July 10(Wed.)~12(Fri.)

기간 : 7월 10일(수)~12(금)

Venue : Coex C, D Hall

장소 : 서울 코엑스 C, D 홀

Scale 규모

- Exhibitors : 350 companies from 15 countries / 600 booths
- 출품규모 : 15개국 350개사 600부스
- Visitors : 12,000 from 40 countries(expected)
- 참관규모 : 40개국 12,000명

Exhibition Categories 출품분야

Nano Devices, Nano Materials, Nano Manufacturing, Nano Evaluation & Measurement, Applications, Micro/MEMS, Laser Fine Processing, Printed electronics, Advanced Ceramics
나노소재, 나노소자, 나노공정, 나노분석/측정, 나노응용분야, 마이크로/MEMS, 레이저미세가공, 인쇄전자, 첨단세라믹

On-Line Pre-Registration 온라인 사전등록

All visitors are strongly recommended to do "on-Line Pre Registration"

Online free registration: by July 8(Mon.), 2013 via www.nanokorea.or.kr

전시회 참관을 희망하는 분들께서는 홈페이지를 통해 7월 8일(월)까지 온라인 사전등록을 완료하시기 바랍니다.

NANO KOREA Line-up 행사구성

| Exhibition | Symposium |
|--|---|
| The 11 th International Nano-convergence Expo | The 11 th International Nanotech Symposium |
| The 6 th MicrotechWorld | Business Forum |
| The 4 th LASER KOREA | Nano-Convergence T2B Forum |
| The 3 rd Advanced Ceramics Exhibition | Business Programs |
| The 1 st Korea Mockup Design & Prototype Manufacturing Exhibition | T2B Product Transaction Meeting |
| The Printed Electronics Special Pavilion | Research Frontier |
| The Nano-Convergence T2B Products Special Pavilion | IR Seminar |
| | International Nano Business Partnering Program |

Contact Information

NANO KOREA Exhibition Secretariat 나노코리아 전시회 사무국

Person in charge : Mr. Hyun Seung-Hwan Tel. +82-31-548-2027 Fax. +82-31-624-2021

E-mail. nanokorea@nanokorea.net / ntrahyun@nanokorea.net



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Nanotechnology, Pioneer for the Next Generation Industries

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