5th INTERNATIONAL CONFERENCE on Analytical Science & Technology

ICAST 2017

October 23 – 24, 2017
KBSI Ochang Center
Cheongju, Korea

KBSI
Korea Basic Science Institute

JAST
Journal of Analytical Science and Technology

GRAST
Graduate School of Analytical Science and Technology

Welcome Message

We cordially ask for your attention to the 5th International Conference on Analytical Science and Technology (ICAST 2017), which will be held at the Korea Basic Science Institute Ochang Center, in Cheongju, Korea from 23-24 October, 2017. The conference is co-sponsored by the Journal of Analytical Science and Technology (JAST) and the Graduate School of Analytical Science and Technology (GRAST) in an effort to build a strong partnership with world renowned researchers and institutes of analytical sciences.

This year, the conference will be focusing on the following fields of analytical science: Bio Technology, Nano Technology, Environmental Technology, and Instrumentation. Plenary lectures given by Prof. Stephen Pennycook (NUS), Prof. Sung Hoon Kim (SNU) and Prof. David Larbalestier (NHMFL) are the main highlights of the conference. Sessions will be led by invited speakers from various countries who have already established careers in their own fields of research. Moreover, posters by young scientists and students will make the conference a dynamic arena of discussion and exchange of ideas.

ICAST symbolizes the mission of KBSI as a national center of equipment for basic and advanced analytical sciences and technology. By organizing this conference, members of KBSI ensure incessant support to basic sciences through the development of state-of-the-art equipment and analytical methods. Your support and cooperation will be greatly appreciated.

We look forward to meeting you at ICAST 2017 !

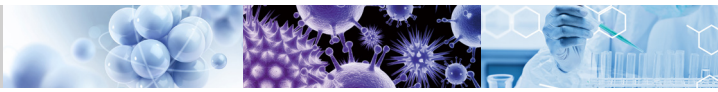
Kwangsik Lee

Kwang Sik LEE
President
Korea Basic Science Institute

PROGRAM SCHEDULE

●○● October 23

Time	Program		Venue
09:30 – 10:00	Registration		Lobby
10:00 – 10:20	Opening Ceremony		Auditorium
10:20 – 11:00	Plenary Lecture		Auditorium
	Stephen John Pennycook National University of Singapore *Materials under the microscope: the atomic origin of properties*		
11:00 – 11:10	Break		
11:10 – 12:20	BT Session 1 **Structural Biology**	**Jae-Sung Woo** Korea University *Structural insights into primary microRNA processing*	Auditorium
		Seung-Wook Chi Korea Research Institute of Bioscience & Biotechnology *Structural insight into dual-targeting mechanism of tumor suppressor p73 in apoptosis*	
		Jaekyung Hyun Korea Basic Science Institute *Near-atomic resolution structure determination of protein complexes using cryo-electron microscopy single particle analysis*	
	NT Session 1 **Smart Nano-structured Materials**	**Sung-Yoon Chung** Korea Advanced Institute of Science and Technology *Atomic-scale identification of space-charge solute segragation at oxide interface*	Session Room 1
		Yun Suk Huh Inha University *Design and development of nanomaterials for biological and environmental applications*	
		Won Gi Hong Korea Basic Science Institute *Nanostructured materials for energy and environment applications*	
	ET Session 1 **Isotope Geochemistry**	**Tsuyoshi Iizuka** University of Tokyo *Evolution of the continental crust as recorded by detrital minerals*	Session Room 2
		Duck K. Choi Seoul National University *Assembling the Korean Peninsula: from Rodinia to Pangea*	
12:20 – 13:30	Lunch		Cafeteria
13:30 – 15:00	Poster Session		Lobby
15:00 – 16:10	BT Session 2 **Neuroscience**	**Yunjie Tong** Purdue University *Developing BOLD-signal-based perfusion map*	Auditorium
		Kea Joo Lee Korea Brain Research Institute *Nano-scale connectomics using volume electron microscopy*	
		Seongsoo Lee Korea Basic Science Institute *Development of phototherapeutic agent for Alzheimer's disease using drosophila genetics*	



Time	Program		Venue
15:00 – 16:10	NT Session 2 **Surface & Interface Analysis**	**Chan-Cuk Hwang** Pohang Accelerator Laboratory *Controlling the electronic structures of two-dimensional materials for new functionalities*	Session Room 1
		Young Jae Song Sungkyunkwan University *Synthesis and characterization of atomic and electronic properties of graphene-based heterostructure*	
		Keun Soo Kim Yonsei University *Bandstructure engineering of black phosphorus with angle-resolved photo emission spectroscopy*	
	ET Session 2 **Isotope Geochemistry & Cosmochemistry**	**Hiroshi Hidaka** Nagoya University *REE isotopic study for cosmochemistry: a case study of La and Sm isotopes*	Session Room 2
		Changkun Park Korea Polar Research Institute *High spatial resolution, high precision, and high-speed isotope imaging of CAI minerals with isotope microscope system*	
		Sae Jung Chang Korea Basic Science Institute *Stable oxygen isotopes of phosphates: paleo-thermometer biomarkers and isotope probe*	
16:10 – 16:30	Coffee Break		
16:30 – 17:10	**KBSI-User's Research in BT/NT/ET**	**TBD** *TBA*	Auditorium /Session Room 1 /Session Room 2
17:10 – 17:20	Break		
17:20 – 18:00	Plenary Lecture		Auditorium
	Sung Hoon Kim Seoul National University *Aminoacyl-tRNA synthetases as multifunctional regulators of nutrition and energy metabolism*		
18:00 – 18:30	Break		
18:30 – 20:00	Conference Dinner		Lobby (103 Bldg.)

PROGRAM SCHEDULE

Time	Program		Venue
09:30 – 10:00	Registration		Lobby
10:00 – 10:40	Plenary Lecture		
	David Larbalestier National High Magnetic Field Laboratory *State-of-the-art and challenges in ultrahigh field NMR magnet and wire technology*		Auditorium
10:40 – 10:50	Break		
10:50 – 12:00	BT Session 3 **Metabolomics & Lipidomics**	**Jun Kikuchi** RIKEN *Ecosystem trans-omics with data science approach for evaluation of environmental health*	Auditorium
		Myeong Hee Moon Yonsei University *Enhancement in lipidomic analysis*	
		Min-Sun Kim Korea Basic Science Institute *Metabolic alteration in liver tissue following weight change by high fat diet*	
	NT Session 3 **Advanced Methods of Electron Microscopy**	**Albina Y. Borisevich** Oak Ridge National Laboratory *Understanding and controlling local environments in oxides with aberration-corrected STEM*	Session Room 1
		Francesca Peiró University of Barcelona *Revealing the intimate configuration of core shell nanoparticles through electron energy loss spectroscopy: from elemental identification to oxidation states mapping in 3D*	
		Jae Hyuck Jang Korea Basic Science Institute *Introduction of analytical strategy using next-generation monochromator and Cs-corrected STEM & EELS in KBSI*	
	Instrumentation Session 1 **IFHiMag 2017**	**Seungyong Hahn** Seoul National University *State-of-the-art and challenges in ultrahigh field superconducting DC magnet technology*	Auditorium (103 Bldg.)
		Seung-Hyun Moon SuNAM *SuNAM's R&D in high-temperature superconducting wire and magnet technology*	
12:00 – 13:30	Lunch		Cafeteria
13:30 – 14:40	BT Session 4 **Next Generation Proteomics**	**Je Yoel Cho** Seoul National University *Lung cancer biomarker development by proteomics and diagnostic validation by rapid kit*	Auditorium
		Sung-Min Ahn Gachon University *The next challenge of proteomics and peptidomics in precision oncology*	
		Jin Young Kim Korea Basic Science Institute *Mass spectrometric approaches for glycoprotein analysis*	
	NT Session 4 **Computational Materials Science**	**Shengbai Zhang** Rensselaer Polytechnic Institute *First-principles theory of epitaxial film growth*	Session Room 1
		Myung Joon Han Korea Advanced Institute of Science and Technology *First-principles prediction of magnetic states: new phenomena and new challenges*	
		Heejin Kim Korea Basic Science Institute *Combined experimental and computational studies on the battery electrode materials*	
	Instrumentation Session 2 **IFHiMag 2017**	**Dongkeun Park** Plasma Science and Fusion Center / MIT *A progress on MIT 1.3 GHz LTS/HTS High-resolution NMR magnet*	Auditorium (103 Bldg.)
		So Noguchi Hokkaido University *An overview of conduction-cooled REBCO magnet development for whole-body MRI systems in Japan*	
		SangGap Lee Korea Basic Science Institute *Development progress of 400 MHz metal-clad no-insulation all-REBCO NMR magnet cooled by conduction*	
14:40 – 14:50	Coffee Break		
14:50 – 15:00	Closing Ceremony		Auditorium
15:00 – 16:00	Lab. Tour		KBSI

Venue

161, Yeongudanji-ro, Ochang-eup, Cheongwon-gu, Cheongju-si,
KBSI Ochang Center, Korea

Homepage • www.icast2017.org
E-mail • mercurien@kbsi.re.kr
Tel • +82 42 865 3932

www.kbsi.re.kr

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