



# ISPSA 2022

July 17 (Sun.) ~ 21 (Thu.), 2022

Ramada Plaza Jeju Hotel, Jeju, Korea

"Past-, current-, and future-semiconductors"

The 20th  
International  
Symposium on the  
Physics of  
Semiconductors and  
Applications

## Welcome Message

ISPSA 2022, hosted by the Korean Physical Society, is to report and discuss the state of the art in semiconductor physics and applications including electronic, spintronic, quantum and energy materials and devices. Reflecting the scientific heritage on traditional semiconductor physics dating back to the 1970s, emerging academic fields, such as artificial intelligence, quantum information, and industrial semiconductor applications, will newly enrich the 20th ISPSA in one of the most dynamic places for semiconductor physics, Korea.

## Call for Papers

ISPSA 2022 cordially invites you to submit your abstracts for oral and poster presentations. All abstracts will be reviewed by the program committee and assigned to the appropriate session based on research fields and program topics category. Abstract should be submitted to website ([www.ispsa.or.kr](http://www.ispsa.or.kr)) by **Apr. 22, 2022**

## Symposium Topics

The topics will cover research and activities across all fields related to physics of semiconductors and applications including, but not limited to, the following topics;

- 1 Advanced semiconductors (AS)
- 2 Novel functional spintronics (NFS)
- 3 Low dimensional semiconductors (LDS)
- 4 Artificial Intelligence (AI) materials and devices
- 5 Quantum information (QI)
- 6 Plasmonics and optoelectronics (PO)
- 7 Energy materials and devices (EMD)
- 8 Industrial semiconductor applications (ISA)

## Important Dates

<b>Abstract Submission</b>	<b>April 22, 2022</b>
Acceptance Notification	May 12, 2022
Post-deadline Submission	May 6, 2022
Pre-registration Deadline	June 24, 2022

## Publication

Authors whose abstracts are accepted will be invited to submit manuscripts to some of the highly recognized professional journals in related fields. Detailed information can be found from the website soon.

## Best Student Paper Award [Oral and Poster presentation]

In order to identify outstanding work by student participants, the Best Student Presentation award will be given for an excellent presentation of the conference, and award winner must be registered as a student and also must be a student. The award is offered based upon an absolute standard of excellence and all student presenters will be considered eligible for the award.

## Organizing Committee

<b>Honorary Chairman</b>	Eun Kyu Kim (Hanyang Univ.) Yongmin Kim (Dankook Univ.)
<b>Symposium Chairman</b>	Yong-Hoon Cho (KAIST)
<b>Vice-Chairman</b>	Heesuk Rho (Jeonbuk Nat'l Univ.) Jong Su Kim (Yeungnam Univ.) Jae Su Yu (Kyung Hee Univ.)
<b>General Secretary</b>	Mun Seok Jeong (Hanyang Univ.)
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<b>Program</b>	Jin Pyo Hong (Hanyang Univ.) Hyunsik Lim (Dongguk Univ.) Dong-Wook Kim (Ewha Womans Univ.) HeeJun Yang (KAIST)
<b>Publication</b>	Kwangseuk Kyhm (Pusan Nat'l Univ.) Soo Bong Choi (Incheon Nat'l Univ.) Donghun Lee (Korea Univ.) Do Kyeong Hwang (KIST) Mee-Yi Ryu (Kangwon Nat'l Univ.) Keun Su Kim (Yonsei Univ.)
<b>Communication</b>	Young-Jun Yu (Chungnam Nat'l Univ.) Han-Youl Ryu (Inha Univ.) Seung Hyun Song (Sookmyung Women's Univ.) Jung Inn Sohn (Dongguk Univ.) Chul-Ho Lee (Korea Univ.)
<b>Treasurer</b>	Hong Seok Lee (Jeonbuk Nat'l Univ.) Jungyup Yang (Kunsan Nat'l Univ.)
<b>Finance</b>	Doo Jae Park (Hallym Univ.) Jae Won Shim (Korea Univ.) Jung Hwa Seo (Univ. of Seoul) You Seung Rim (Sejong Univ.)
<b>Local</b>	JinKee Hong (Yonsei Univ.) Woochul Yang (Dongguk Univ.) Kyunghu Choi (KRRRI) Clare C. Byeon (Kyungpook Nat'l Univ.) Yong Soo Kim (Univ. of Ulsan) Moongyu Jang (Hallym Univ.) Sangwan Ryu (Chonam Nat'l Univ.) Hye-Won Seo (Jeju Nat'l Univ.) Sang Jun Lee (KRISS) Jindong Song (KIST) Won Seok Han (ETRI)

## Organizer

## Plenary Speakers

Be sure not to miss our speakers who will present their latest findings and research at ISPSA 2022. Find out more on the website.



**Mark C. Hersam**  
(Northwestern Univ., USA)

"Fundamentals and Applications of Mixed-dimensional van der Waals Heterostructures"



**Yuri Kivshar**  
(Australian Nat'l Univ., Australia)

"Metaphotonics and Metasurfaces Governed by Mie Resonances"



**Young Hee Lee**  
(Sungkyunkwan Univ., Korea)

"Flatland in van der Waals Materials and Heterostructures"



**Daniel Lau Shu Ping**  
(The Hong Kong Polytechnic Univ., Hong Kong)

"Emerging Opportunities of Solution-processable Black Phosphorus in Energy Applications"



**H.-S. Philip Wong**  
(Stanford University, USA)

"Materials, Devices, and Process Technology for AI Compute"



**Joerg Wrachtrup**  
(Stuttgart Univ. and Max Planck Inst. for Solid State Research, Germany)

"Quantum Technology with Defects"

## Tutorials (in Korean)

The tutorials will be featured in the first day of the symposium and are aimed to provide introductory courses for physics of semiconductors and applications fields. Specific information can be checked at the website.

## Visit Jeju in 2022!

Jeju is the biggest island of Korea. Basalt rocks cover more than 90% area of this universal volcanic island. It is proud of its unique cultural folk heritage as well as its geographical and historical relevance. The island itself is an extinct volcano with its peak jutting skyward at the center and a broad, gentle littoral all the way around showing a very unique geographical condition. There are bountiful forests and ravines, fantastic rock formations and volcanic craters, and caves and grasslands that together paint a natural scene of breathtaking beauty. Sparkling seas and tiny islets surround Jeju, with rocks scattering amidst sandy beaches to create a magnificent view everywhere you look. In 2007, the volcanic island and lava tube cave systems were designated as UNESCO World Natural Heritage Sites for their natural beauty and geographical value.

## Easy Access to Jeju, Korea

Jeju International Airport is conveniently located at the center of East Asia and is easily accessible from China, Japan, and Southeast Asia. The airport currently services 16 direct international flights and 13 domestic flights. ISPSA secretariat recommends that visitors take a direct international flight to Jeju Island for their convenience.

## Visa Information

Any foreign visitor wishing to enter the Republic of Korea must have a valid passport and obtain a Korean visa before coming. But people of 99 countries who want to visit Korea temporarily are permitted to enter without a visa. More information will be posted on the Symposium website.

## Symposium Venue: Ramada Plaza Jeju Hotel

This internationally renowned deluxe resort-style business hotel is a fifteen-minute car ride away from both Jeju Harbor and Jeju International Airport. It can be reached within an hour from wherever you are on the Jeju Island.

**Address** 66 Topdong Ro, Jeju, 63165, Korea

**Tel.** +82-64-729-8100

## ISPSA Secretariat: Planex Lab., Inc.

**Tel** +82-44-862-7962

**Fax** +82-44-862-7963

**E-mail** [ispsa@ispsa.or.kr](mailto:ispsa@ispsa.or.kr)

**Website** [www.ispsa.or.kr](http://www.ispsa.or.kr)

