

# International Workshop **TOPOLOGY**

June 12<sup>th</sup> – 13<sup>th</sup>, 2019

Venue: WPI-MANA Auditorium, NIMS, Namiki, Tsukuba, Ibaraki, JAPAN

**June 12<sup>th</sup>, 2019**

8:30 - Registration and **Morning Tea**

## **Opening**

9:00 - 9:30 *Greetings*

**K. Hono**, Executive Vice President, NIMS

## **Keynote Lecture**

9:30 - 10:15 *Topology as a Design Principle for Materials Science and Photonics*

**F. Duncan M. Haldane**, Nobel Laureate, Professor, Princeton University, USA

**10:15 - 10:30 Question Time (Coffee)**

## **Session WA-I**

10:30 - 11:00 *Graphene and Artificial Graphenes as Platform for Creating Topological States and Functionality*

**X. Hu**, PI, MANA, NIMS, Japan

11:00 - 11:30 *Quantum Topological Photonics*

**M. Hafezi**, Associate Professor, University of Maryland, USA

11:30 - 12:00 *Locally Resonant Metamaterials: A Platform for Studying Topological Properties*

**F. Lemoult**, Associate Professor, Institute of Langevin, France

12:00 - 12:30 *Simulation of Topological Photonic States in Circuit-Based Metamaterials*

**H. Chen**, Professor, Tongji University, China

12:30 - 13:30 **Lunch**

## **Session WP-I**

13:30 - 14:00 *Theoretical Possibilities for Superconducting and Topological Properties in Flat-Band Systems*

**H. Aoki**, Professor, The University of Tokyo, Japan

14:00 - 14:30 *Correlation-Driven Dimerization and Topological Gap Opening in Isotropically Strained Graphene*

**S. Yunoki**, Principal Investigator, RIKEN, Japan

14:30 - 15:00 *Majorana Zero Modes inside Topological Superconducting Vortex*

**F.-C. Zhang**, Director, Kavli Institute for Theoretical Sciences, University of Chinese Academy of Sciences, China

15:00 - 15:30 *The Observation of Majorana Zero Mode and Conductance Plateau in an Iron-Based Superconductor*

**H.-J. Gao**, Academician of CAS, Professor, Institute of Physics, China

**15:30 - 16:00 Coffee Break**

## **Session WP-II**

16:00 - 16:30 *Topological Slow Light and Weyl Points*

**M. C. Rechtsman**, Professor, The Pennsylvania State University, USA

16:30 - 17:00 *Higher Order Topological Metamaterials-Trapping Light and Sound at the Corners*

**A. B. Khanikaev**, Associate Professor, The City College of New York, USA

17:00 - 17:30 *Topology and PT symmetry in Non-Hermitian Photonic Periodic Systems*

**M. Notomi**, Professor, Tokyo Institute of Technology, Japan

17:30 - 18:00 *Topological Localized States in Semiconductor Photonic Crystals*

**S. Iwamoto**, Professor, The University of Tokyo, Japan

**June 13th, 2019**

8:45 - Registration and **Morning Tea**

**Session TA-I**

9:00 - 9:30 *New Physics in Moire Graphene Superlattices*

**F. Guinea**, Senior Research Professor, Imdea Nanoscience, Spain

9:30 - 10:00 *Traveling in Meta Space-Time: Particle Dynamics in Floquet-Bloch Crystal*

**Q. Niu**, Professor, University of Texas, Austin, USA

10:00 - 10:30 *Aspects of Bulk-Edge Correspondence: Mechanical Systems and Effects of Electron-Electron Interaction*

**Y. Hatsugai**, Professor, The University of Tsukuba, Japan

**10:30 - 11:00 Coffee Break**

**Session TA-II**

11:00 - 11:30 *Topological Electromagnetic and Acoustic Systems with Twisting Structures and Synthetic Dimensions*

**C.-T. Chan**, Professor, The Hong Kong University of Science and Technology, China

11:30 - 12:00 *Topological Photonic Integrated Circuits for Controlling OAM Light Signal*

**T. Amemiya**, Assistant Professor, Tokyo Institute of Technology, Japan

12:00 - 12:30 *Visualization of Topological Kink States in Two Dimensional Photonic Crystals*

**Z.-H. Hang**, Professor, Soochow University, China

12:30 -13:30 **Lunch**

**Session TP-I**

13:30 - 14:00 *Topological Acoustics: Effects and Materials*

**Y.F. Chen**, Professor, Nanjing University, China

14:00 - 14:30 *Topological Phononics at the Nanoscale*

**V. Peano**, Senior Scientist, Max Planck Institute for the Science of Light, Erlangen, Germany

14:30 - 15:00 *Observation of Impurity Incorporated Domain in h-BN Single Crystals for Improvement of Crystal Quality*

**K. Watanabe**, Group Leader, NIMS, Japan

15:00 - 15:30 *Structurally Defined Nanocarbon Synthesized by on-Surface Chemical Reaction*

**S. Kawai**, Senior Researcher, MANA, NIMS, Japan

**15:30 - 16:00 Coffee Break**

**Session TP-II**

16:00 -16:30 *Non-Hermitian Topological Phases*

**M. Sato**, Professor, Kyoto University, Japan

16:30 – 17:00 *Topological Insulator Laser*

**M. A. Bandres**, Assistant Professor, University of Central Florida, USA

17:00 – 17:30 *Hydrogen-Assisted Thermal Etching and Ozone Water Passivation Techniques for Fabrication of GaN-Based Nanostructures towards Visible Light Topological Photonic Devices*

**A. Kikuchi**, Professor, Sophia University, Japan

17:30 – 18:00 *Eigenmode Engineering of Nanolasers*

**R.-M. Ma**, Assistant Professor, Peking University, China

**18:00 – 18:10 Closing**