

JSPS Core-to-Core Program

**First Symposium of “Asian Research
Network for Terahertz Molecular Science”**

Abstract

March 14 – 16, 2024

Takigawa Memorial Hall, Kobe University

Kobe, Japan

Program

March 14 (Thur)

9:30- Opening

Keisuke Tominaga (Kobe University, Japan)

Chair: Masahiko Tani

9:50-10:30 **Plenary Talk**

Terahertz, Far-infrared, and Low-frequency Raman Spectroscopies

---Three Sisters of Low-frequency Vibrational Spectroscopy---

Yukihiro Ozaki (Kwansei Gakuin University, Japan)

10:30-11:05

THz Molecular Science in Condensed Phases

Keisuke Tominaga (Kobe University, Japan)

11:05-11:40

Terahertz Spectroscopy for Identifying and Utilizing Indonesia's Natural Resources

Dian Marlina (Universitas Setia Budi, Indonesia)

11:40-12:15

Terahertz wireless communication using terahertz wave generated by soliton microcomb and photomixing

Yu Tokizane Tokushima University, Japan)

Chair: Harumi Sato

13:30-14:05

Theoretical Terahertz Spectroscopy of Water and Aqueous Solutions in Bulk and at Surfaces to Probe Intermolecular Interactions and Dynamics

Amalendu Chandra (Indian Institute of Technology Kanpur, India)

14:05-14:40

Unravelling collective orientation relaxation in aqueous solution: Effects of ions and finite-size

Shinji Saito (Institute for Molecular Science, Japan)

14:40-15:15

Relationships between protein and hydration-water dynamics observed by broadband dielectric spectroscopy and neutron scattering

Naoki Yamamoto (Jichi Medical University, Japan)

15:15-15:35

Current Status of Terahertz Science and Technology in Thailand and Our Research Focus on Near-Infrared Spectroscopy for Agricultural Applications

Krairuek Ngowsuwan (Kasetsart University, Thailand)

Chair: Kaoru Ohta

15:55-16:30

High Field Electron Spin Resonance (ESR) Studies of Quantum Spin Systems

Susumu Okubo (Kobe University, Japan)

16:30-16:50

Research and Training Activities at the Center for Quantum and Electronics, Institute of Physics, Vietnam

Pham Hong Minh (Vietnam Academy of Science and Technology, Viet Nam)

16:50-17:10

Blueshift of Low-Frequency Terahertz Vibrational Mode

Kippei Shoji (Shizuoka University)

17:10-17:45 Miezel L. Talara

Terahertz Wave Generation Performances of Fe/Pt Spintronic Antenna Sources Driven by a 795-nm Pump Beam

Miezel Talara (University of Fukui, Japan)

March 15 (Fri)

Chair: Keisuke Tominaga

9:20-10:00 **Plenary Talk**

Terahertz Wave Photonics Research From the Dawn to the Future

Hiromasa Ito (Tohoku University and RIKEN, Japan)

10:00-10:35

Enhancement of Terahertz Electro-Optic Sampling Signals by Using Polarization Filtering

Masahiko Tani (University of Fukui, Japan)

10:45-11:20

Design and Fabrication of Novel Semiconductor Terahertz Photoconductive Antenna Emitter Devices at the National Institute of Physics University of the Philippines

Elmer S. Estacio (University of the Philippines, Diliman)

11:20-11:55

Development of Advanced THz Gyrotrons and Their Applications

Masafumi Fukunari (University of Fukui, Japan)

Chair: Feng Zhang

13:30-14:05

A Comparative Study of Terahertz and Near-Infrared Spectroscopies for Accurate Classification of Gluten-Free and Gluten-Containing Flours

Sunee Jungtheerapanich (Kasetsart University, Thailand)

14:05-14:40

Applications of two-dimensional correlation analysis in THz spectroscopy

Yeonju Park (Kangwon National University, Korea)

14:40-15:15

Terahertz laser spectrometer and its applications

Tetsuo Sasaki (Shizuoka University, Japan)

15:15-15:35

Terahertz Research in the Philippine Setting

Christopher T. Que (De La Salle University, Philippines)

Chair: Akihiro Furube

15:55-16:30

Lattice Modulation Effects on Tetragonal MAPbI₃ Intermolecular Motions

Michitoshi Hayashi (National Taiwan University, Taiwan)

16:30-17:05

THz Raman observation of semi-clathrate hydrates and salt hydrates

Atsushi Tani (Kobe University, Japan)

17:05-17:40

Dynamic Heterogeneity: Origin, Analytical Prediction and Artifacts

Pratik Sen (Indian Institute of Technology Kanpur, India)

17:40-18:00

THz Metamaterial Innovations at VAST: From Negative Refractive Index and Perfect Absorption to Potential Sensing Applications

Nguyen Thanh Binh (Vietnam Academy of Science and Technology, Viet Nam)

March 16 (Sat)

Chair: Tetsuo Sasaki

9:20-10:00

Terahertz Spectroscopy and Imaging for Applications Relevant to Human Health and Security

Alvin Karlo G. Tapia (University of the Philippines Los Banos)

10:00-10:35

Applications of THz Spectroscopy and Search for New THz-generation Materials

Feng Zhang (Chinese Academy of Sciences, China)

10:45-11:20

THz and low-frequency Raman spectroscopies in Polymers

Harumi Sato (Kobe University, Japan)

11:20-11:55

Advancements in DFT-Based Methods for Calculating Vibronic Properties of Molecules and Crystals, and Analyzing Terahertz Spectroscopy Results

Mega Novita (Universitas PGRI Semarang, Indonesia)

Chair: Alvin Karlo G. Tapia

13:00-13:35

Femtosecond Dynamics of Charge Transfer between Plasmonic Metal and Semiconductor Nanostructures

Akihiro Furube (Tokushima University, Japan)

13:35-14:10

Charge Carrier Dynamics in Bulk Heterojunction Organic Thin Films Probed with Time-Resolved Terahertz Spectroscopy

Kaoru Ohta (Kobe University, Japan)

14:10 Closing

Keisuke Tominaga