JSPS Core-to-Core Program

Second Symposium of “Asian Research Network for Terahertz Molecular Science”

Abstract

March 16 – 18, 2025

Todaiji Museum

Nara, Japan

Program

March 16 (Sun)

11:00- Opening

Keisuke Tominaga (Kobe University, Japan)

Chair: Keisuke Tominaga

11:15 – 11:55

Advanced terahertz-wave technology for spectroscopy and imaging

Hiroaki Minamide (RIKEN, Japan)

Lunch

13:00-13:40

Development of millimeter-wave band multi-frequency ESR systems

Yuya Ishikawa (University of Fukui, Japan)

13:40-14:05

Gapless THz Dual-Comb Spectroscopy

Takeshi Yasui (Tokushima University)

14:05-14:30

Research and development of ultra-broadband laser and high-power laser for applications in environmental research and material processing

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

Break

14:45-15:25

Bridging THz Spectroscopy and Industry: A Philippine Case Study

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

15:25-15:50

Study on the Molecular Interaction of Phycocyanin Extracted from Spirulina sp. Using High- and Low-Frequency Vibrational Spectroscopy

Dian Marlina (Universitas Setia Budi, Indonesia)

Break

16:05-16:45
THz Raman observation of hydrate materials: salt hydrates and semi-clathrate hydrates
Atsushi Tani (Kobe University, Japan)

16:45-17:10
Development of Next-generation Inorganic Crystals for THz emission
Feng Zhang (Chinese Academy of Sciences, China)

17:10-17:35
Broadband dielectric spectra of hydrated complex systems
Lou Serafin Lozada (University of the Philippines Los Banos)

March 17 (Mon)
Chair: Harumi Sato
9:20-10:00
A First-principles Anharmonic Vibrational Spectrum Study for Organic-inorganic Hybrid Perovskite Compounds
Michitoshi Hayashi (National Taiwan University, Taiwan)

10:00-10:25
Detection of metastable states of candidate DNA demethylating agent using terahertz spectroscopy
Masaru Sudo (Shizuoka University, Japan)

Break

10:40-11:20
Exploring 1.55 μm wavelength excited InGaAs terahertz photoconductive antenna device fabrication and other novel terahertz photonics studies at the University of the Philippines
Elmer S. Estacio (University of the Philippines, Diliman)

11:20-11:45
Terahertz Time-Domain Coherent Raman Spectroscopy

Masahiko Tani (University of Fukui, Japan)

11:45-12:10
Research on Metamaterials: Fundamentals and Applications from MHz to THz at Vietnam Academy of Science and Technology
Vu Dinh Lam (Vietnam Academy of Science and Technology, Vietnam)

Lunch

13:10-14:00
Poster session

Chair: Masahiko Tani
14:00-14:40
Dynamics of Hydrated Soft Matters Studied by Broadband Dielectric Spectroscopy and Molecular Dynamics Simulations
Keisuke Tominaga (Kobe University, Japan)

14:40-15:05
Application of low- and high-frequency Raman and 2D correlation spectroscopy in degradable polymer characterization
Yeonju Park (Kangwon National University, Korea)

15:05-15:30
Growth and characterization of *p-i-n* InGaAs/GaAs multiple quantum well (MQW) simultaneously-grown via molecular beam expitaxy (MBE) on GaAs (100) and GaAs (111) substrates
Arnel Salvador (University of the Philippines, Diliman)

Break

15:45-16:25
Development of Quasi-Optical Systems for High-Power and Higher-Order THz Vortex Beam Generation
Masafumi Fukunari (University of Fukui, Japan)

16:25-16:50

Development of Hybrid Maghemite-Graphene Nanocomposites for Terahertz Shielding Applications
Gil Nonato Santos (De La Salle University, Philippines)

16:50-17:15
Visualization of Marine degradation process of polymers by Low-frequency Raman imaging
Harumi Sato (Kobe University, Japan)

March 18 (Tue)
Chair: Michitoshi Hayashi
9:20-10:00
Proton Transfer Dynamics and Vibrational Spectroscopy of Aqueous Acidic and Basic Solutions
Amalendu Chandra (Indian Institute of Technology Kanpur, India)

10:00-10:25
Fibrinogen, an amyloid fibril formation inhibitor
Naoki Yamamoto (Jichi Medical University, Japan)

Break

10:40-11:05
Machine Learning-Based Predictive Modeling of PHA-PEG Blend Properties for Spectroscopic and Thermal Characterization
Mega Novita (Universitas PGRI Semarang, Indonesia)

11:05-11:30
Enhancement of Photocatalytic Performance of TiO_2 Nanocrystals Using Nano-sized Silver Nanowires and Elucidation of the Charge Transfer Mechanism by Transient Absorption Spectroscopy
Akihiro Furube (Tokushima University, Japan)

11:30 Closing
Keisuke Tominaga

Lunch

13:30--17:30 Excursion

Poster session

P-1

Rapid Determination of Coffee Beverage Qualities Using Near-Infrared Spectroscopy and Chemometrics

Sunee Jungtheerapanich (Kasetsart University, Thailand)

P-2

Temperature Dependence of Dielectric Response of Deep Eutectic Solvent of Lauric Acid and Menthol from sub-GHz to THz Frequency Range

Yuto Awano (Kobe University, Japan)

P-3

Comparing Terahertz and Near-Infrared Spectroscopy: Applications and Advancements of Terahertz in Thailand

Jaruporn Rakmai (Kasetsart University, Thailand)

P-4

Analysis of the Hydration Dynamics of Polyvinylpyrrolidone by Broadband Dielectric Spectroscopy

Yang Cao (Kobe University, Japan)

P-5

Analysis of complex dielectric spectra of small-molecule-liquids in the sub-GHz to THz region

Nao Yoriki (Kobe University, Japan)

P-6

Measurement of Changes in the Hydrogen Bond Network in Electrolyte Aqueous Solutions Using THz Time-Domain Coherent Raman Spectroscopy

Takahiro Namazuta (University of Fukui, Japan)

P-7

Injection-Seeded Backward Terahertz-Wave Parametric Oscillator with Octave-Spanning Continuously Tunable Bandwidth

Joselito Muldera (RIKEN, Japan)

P-8

Effect of Amide Species on the Low-Frequency Spectra of Li Salt- Organic Amide Based Deep Eutectic Solvents

Maharoof Koyakkat (Chiba University, Japan)

P-9

Terahertz Optical Properties of Cellulose and Starch Biomaterials

Genne Patt O. Samar (University of the Philippines Los Banos)

P-10

Characteristics of a swept-source optical coherence tomography system based on a backward terahertz-wave parametric oscillator

Alexander De Los Reyes (RIKEN, Japan)

P-11

THz spectrum observation of magnesium chloride hydrates by high-frequency accurate CW GaP terahertz spectrometer

Koichiro Funakoshi (Kobe University, Japan)

P-12

Microcomb Generation Performance Comparison of Free-space and Fibercoupled 300 GHz Si_3N_4 Microresonators

Miezel Talara (Tokushima University, Japan)

P-13

Probing the Effect of Phonons in Charge Transport Characteristics of All Inorganic and Hybrid Perovskite Nanocrystals

Prajit Kumar Singha (Kobe University, Indian Institute of Technology Bombay)