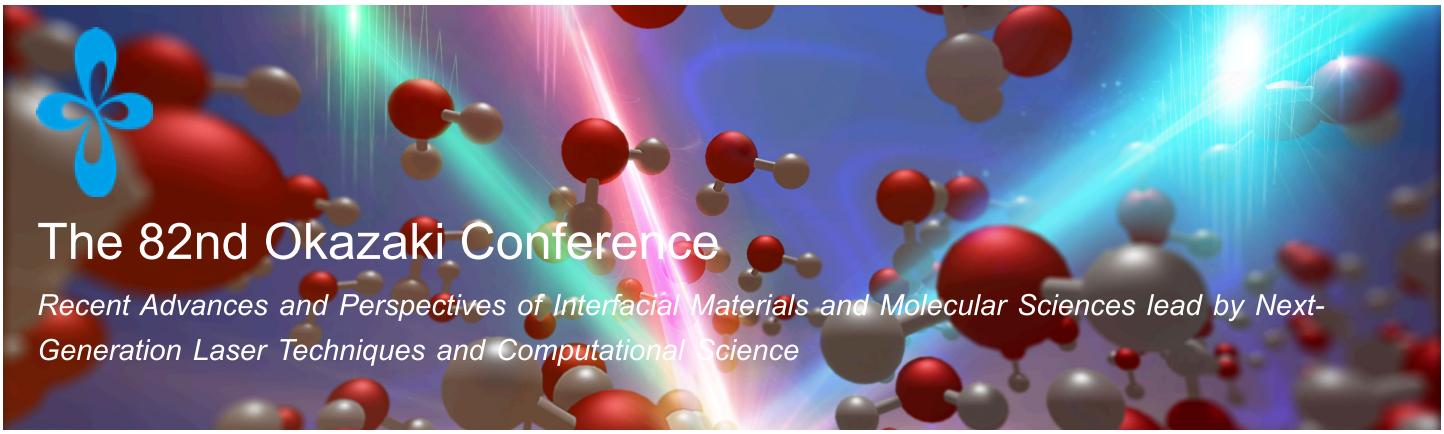


Welcome Message

Welcome to **the 82nd Okazaki Conference on *Recent Advances and Perspectives of Interfacial Materials and Molecular Sciences lead by Next-Generation Laser Techniques and Computational Science***.

We are pleased to welcome you to this conference, which will take place from **July 28 to 31, 2025**, in Okazaki, Japan. Hosted by the **Institute for Molecular Science (IMS)**, one of Japan's inter-university research institutes, the Okazaki Conference provides a unique platform for researchers across disciplines to exchange ideas, foster collaborations, and reconnect with new and familiar colleagues.

This year's focus is on interfacial materials and molecular sciences. The program will feature multidisciplinary topics, including experimental research utilizing cutting-edge laser and synchrotron radiation techniques, as well as theoretical studies employing molecular dynamics and other computational approaches. Contributions from both experimental and theoretical perspectives will highlight the frontiers of interfacial phenomena.

Conference venue: Okazaki Conference Center
Date: July 28th – 31st, 2025
The event is scheduled to start between 12:30 PM and 1:00 PM. On the final day, we anticipate concluding in the early afternoon.

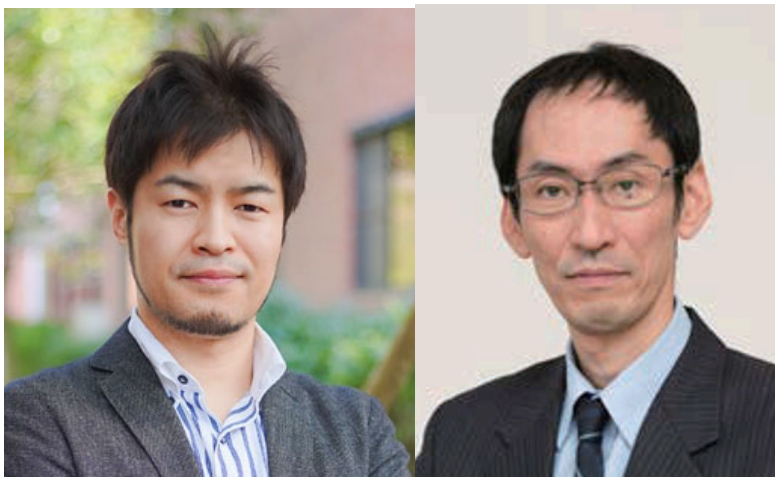
- **Registration deadline: May 31st, 2025**
- **Abstract submission (poster & oral) deadline: June 27th, 2025**
  (Please use ***this template*** for abstract preparation)

Registration is still open for a limited number of participants, although the official deadline has passed. Please complete your registration as soon as possible, as we will close it soon.

Aim & Scope

Nonlinear interface spectroscopy has proven to be a powerful tool for elucidating a wide range of surface and interfacial phenomena, including soft matter surfaces and buried interfaces. It has significantly broadened the horizons of surface and interface science. In recent years, a new wave of innovation has emerged—driven by advances in laser-based measurement techniques and computational science. In particular, remarkable progress has been made in overcoming the spatial resolution limits of conventional methods, or in providing new insights into realistic interfaces relevant to electrochemistry, environmental chemistry, biological systems, nanoparticles, and organic devices. This conference will serve as an international platform to share recent developments and discuss future perspectives, with a particular focus on spectroscopic methods for interfacial analysis.

Participants will have opportunities to present their work through oral and poster sessions. We look forward to seeing you in Okazaki.



Chairs:	Toshiki Sugimoto (Institute for Molecular Science) Akihiro Morita (Tohoku University, Japan)
Sponsors:	Institute for Molecular Science (IMS), Okazaki, Japan The Chemical Society of Japan Japan Society for Molecular Science The Spectroscopical Society of Japan
Contact:	ims-fmsc2025@ims.ac.jp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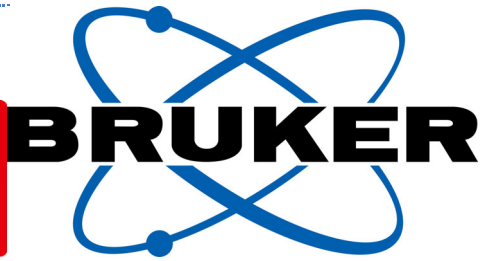
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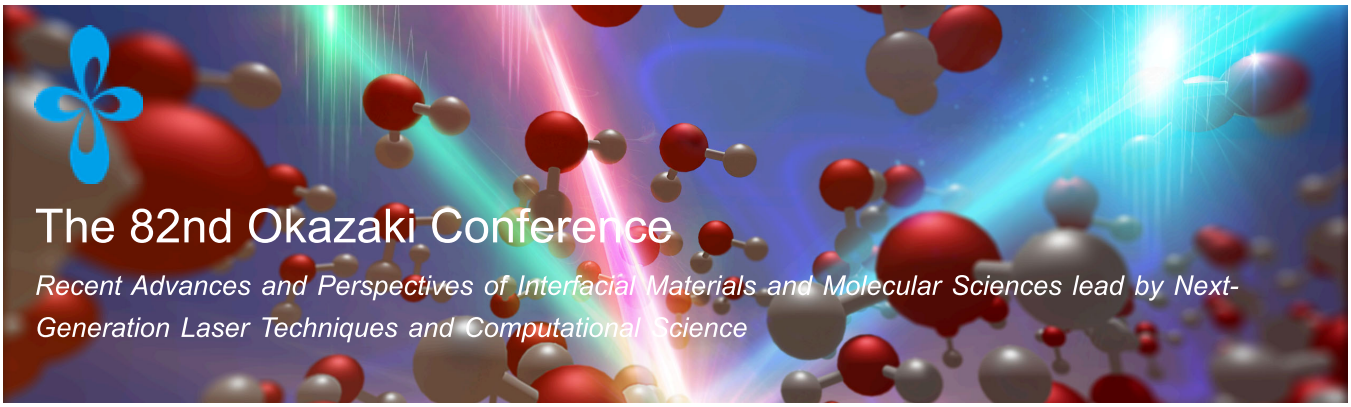

Program

◆Click here for information on cutting-edge measurement equipment

◆Abstracts are available only for those who have applied for participation.
A password to access the download page will be sent to your registered e-mail address
→Abstracts of The 82nd Okazaki Conference

◆ July 28	
12:30-12:55 Registration / 12:55-13:00 Opening remarks	
Chair : Akihiro Morita	
13:00-13:35 (35 min)	**Phase-sensitive Interface-selective Nonlinear Spectroscopic Study of Charged Oxide Interfaces** Satoshi Nihonyanagi(RIKEN, Japan)
13:35-14:10 (35 min)	**Nuclear quantum effects in ultrafast vibrational relaxation at H2O, D2O and HOD/Al2O3 interface** Eric Borguet(Temple University, USA)
14:10-14:45 (35 min)	**Understanding Interfacial Structures of Functional Materials via in situ Sum Frequency Generation (SFG) Vibrational Spectroscopy** Shen Ye(Tohoku University, Japan)
14:45-15:10 (25 min)	Break＆Free discussion
Chair : Dennis Hore	
15:10-15:45 (35 min)	**Interface Nonlinear Optical Spectroscopy in New Spectral Regime** Chuanshan Tian (Fudan University, China)
15:45-16:20 (35 min)	**Chemical Imaging with Phase Resolved Vibrational SFG Microscopy – Elucidation of Molecular Packing Structures at Interfaces** Martin Thämer (Fritz-Haber-Institute of the Max Planck Society, Germany)

◆ July 28

16:20–16:55 (35 min)	**Roles of Quadrupole in Sum Frequency Generation Spectroscopy** Akihiro Morita (Tohoku University, Japan)
16:55–17:15 (20 min)	**Development of comprehensive theory of local field for multipole effects in sum frequency generation** Tomonori Hirano(Tohoku University,Japan)

◆ July 29

Chair : Chuanshan Tian	
09:00–10:00 (60 min)	**Personal view on surface nonlinear optical spectroscopy** Yuen-Ron Shen(University of California Berkeley, USA)
10:00–10:35 (35 min)	**Pushing the Limits for Sensitivity and Signal-to Noise Ratio of Sub-wavenumber High Resolution Broadband Sum-Frequency Generation Vibrational Spectroscopy (HR-BB-SFG-VS)** Hongfei Wang (Westlake University, China)
10:35–10:50 (15 min)	Break&Free discussion
10:50–11:25 (35 min)	**Vibrational sum frequency generation using ultra-broad band infrared pulses** Shunsuke Tanaka (National Institute of Advanced Industrial Science and Technology, Japan)
11:25–12:00 (35 min)	**HD-VSFG Study of SHG-active Dyes interacting with Langmuir Lipid Monolayers** Taka-aki Ishibashi (University of Tsukuba, Japan)
12:00–13:00 Group photo/Lunch	
13:00–14:30 (90min)	Poster
Chair : Shen Ye	
14:35–15:10 (35min)	**Tracking Energy Transport within Photon Conversion Systems** Sean Roberts (University of Texas at Austin, USA)
15:10–15:45 (35min)	**Impact of adding emulsifiers on crystallization processes at oil interfaces** Takayuki Miyamae (Chiba University, Japan)
15:45–16:00	Break&Free discussion

◆ July 29

(15min)	
Chair : Satoshi Nihonyanagi	
16:00–16:35 (35min)	**Getting Underneath the Hood with Aqueous Interfaces: Structure, Spectroscopy, Dielectrics and Reactivity** Ali Hassanali (International Centre for Theoretical Physics, Italy)
16:35–17:10 (35min)	**From phase-resolved SHG via χ(2) and total interfacial potential to adsorbed ion and net-aligned H2O density** Franz Geiger(Northwestern University, USA)
17:10–17:45 (35min)	**pH Evolution of the Electrical Double Layer at Charged Oxide/Electrolyte Interfaces** Juli Gibbs (University of Alberta, Canada)

◆ July 30

Chair : Eric Borguet	
09:00–10:00 (60 min)	**Second Harmonic Light Scattering from Liposomes and Living Biological Cells** Hai-Lung Dai(Temple University, USA)
10:00–10:35 (35 min)	**Detecting hydration of proteins and DNA at interface** Elsa Yan (Yale University, USA)
10:35–10:50 (15 min)	Break&Free discussion
10:50–11:25 (35 min)	**Vibrational SFG as a Orientation-Independent Probe of Interfacial Hydration** Dennis Hore (University of Victoria, Canada)
11:25–12:00 (35min)	**Activation energy of ion desorption at ionic liquid/Pt electrode interfaces** Takashi Iwahashi(Institute of Science Tokyo,Japan)
12:00–13:00 Lunch	
Chair : Toshiki Sugimoto	
13:00–13:35 (35min)	**Water adsorption on stepped Pt surfaces** Kazuya Watanabe (Kyoto University, Japan)
13:35–14:10 (35min)	**Post-OPA Enhanced SFG Spectroscopy and Transient Absorption Microscopy** Zefeng Ren (Dalian Institute of Chemical Physics, Chinese Academy of Sciences, China)
14:20–14:55	**The Rise of Nonlinear X-ray Spectroscopy** Iwao Matsuda(Institute for Solid State Physics, Japan)

◆ July 30

(35min)	
14:55–15:10 (15min)	Break&Free discussion
Chair : Syoichi Yamaguchi	
15:10–15:45 (35min)	**Surface Structure of Water from Soft X-ray Second Harmonic Generation** Craig Schwartz(University of Nevada, USA)
15:45–16:20 (35min)	**Probing Interfacial Molecular Structures on Metal Surfaces: Advances in Sum-Frequency Generation from Far-Field to Near-Field** Toshiki Sugimoto (Institute for Molecular Science, Japan)
16:20–16:40 (20min)	**Tip-Enhanced Sum Frequency Generation for Detecting Vibrational Signals beyond the Diffraction Limit** Atsunori Sakurai(Institute for Molecular Science, Japan)
16:40–17:00 (20min)	**Vibrational Ladder Climbing in Tip-Enhanced Sum Frequency Generation** Tatsuto Mochizuki(Institute for Molecular Science, Japan)
17:10–17:50 Shuttle Bus from OCC to Banquet venue (the Garden by Roppongi)	
18:00–20:00	Bunquet / Poster Awards

◆ July 31

Chair : Kazuya Watanabe	
09:00–10:00 (60min)	**Ultrafast dynamics at water interfaces** Tahei Tahara (RIKEN, Japan)
10:00–10:35 (35min)	**Excited-state dynamics and vibrational spectra of OH-stretch of water** Shoichi Yamaguchi (Saitama University, Japan)
10:35–10:50 (15min)	Break&Free discussion
10:50–11:25 (35min)	**Molecular Origins of Charge Inversion in Fatty Amine Monolayers** Eric Tyrode (KTH Royal Institute of Technology, Sweden)
11:25–12:00 (35min)	**Ultrafast Nano-Spectroscopy of Photo-Induced Dynamics in Low-Dimensional Materials** Takashi Kumagai (Institute for Molecular Science, Japan)
12:00–13:00 Lunch	
Chair : Takayuki Miyamae	

◆ July 31	
13:00-13:35 (35min)	**Anomalous Increase of Sum-frequency Signal From Cationic Langmuir Monolayer Upon Salt Addition** Doseok Kim(Sogang University,Korea)
13:35-14:10 (35min)	**IV-SFG Studies of Buried Liquid/Liquid and Liquid/Solid Interfaces: Glimpses of Unexplored Systems** Yukio Ouchi(Tokyo Tech, Japan)
14:10-14:15	Closing remarks

◆ *Poster Presentation (July29 13:00-14:30)*	
P-1	**Ultra-Broadband Vibrational Sum-Frequency Generation Spectroscopy of Polymer/Metal Interfaces** Risako Kameyama(The University of Tokyo)
P-2	**Unveiling Solid-Liquid Interface Reactions through Operando Atomic Force Microscopy** Taketoshi Minato(National Institutes of Natural Sciences)
P-3	**Effects of chain-chain interaction on the configuration of short-chain alkanethiol self-assembled monolayers on a metal surface** Chia-Li Liao(National Taiwan University)
P-4	**Exploring molecular dynamics at the air/water interface: A femtosecond time-resolved HD-ESFG study** Subhadip Roy(RIKEN)
P-5	**Orientational Dynamics of Two-Dimensional Ice on Metal Surfaces Studied by Phase-Sensitive VSFG Spectroscopy** Yuta Takahara(Graduate Institute for Advanced Studies, SOKENDAI)
P-6	**Evaluation of DMSO interfacial structures by HD-SFG spectroscopy** Takeru Hiraide(Tohoku University)
P-7	**Development of Novel Binders for Lithium-ion Batteries Based on Adhesion Mechanisms Revealed by Sum Frequency Generation Vibrational Spectroscopy** Kousuke Ikuno(Tohoku University)
P-8	**Investigation of the Hydrolysis Mechanism of Phospholipid Monolayers by PhosphoLipase A_2 via HD-SFG Spectroscopy** Yosuke Hatori(Tohoku University)
P-9	**Translational diffusion and isomerization reaction at the solid-liquid interface of ionic liquids using transient grating spectroscopy** Masaki Fujiwara(Doshisha University)
P-10	**Hydroxyl on Stepped Pt Surfaces: A Vibrational SFG Study of Water and Oxygen Coadsorption** Naoki Nagatsuka(Kyoto University)
P-11	**Theoretical analysis of intermolecular vibrational motions of water at the water-air interface using molecular simulations**

◆ *Poster Presentation (July29 13:00-14:30)*

	Masaki Kondo(Keio University)
P-12	**Angle-resolved two-photon Photoemission Study of Surface and Interface States of Au(111) Covered with ZnPc Thin Films** Isamu Yamamoto(Saga University)
P-13	**Distinct Molecular Alignment Mechanisms on Polyimide Films: A Comparative SFG Study of Rubbing and Photo-alignment** Ryo Nakano(Chiba University)
P-14	**Diffraction-Unlimited Vibrational Nanoscopy for Inhomogeneous Surface Molecular Systems Using Tip-Enhanced Sum-Frequency Generation** Shota Takahashi(Institute for Molecular Science)
P-15	**Layer-Dependent Molecular Twisting at the Air-Water Interface Revealed through the H-O-H Bending Mode** Alexander Fellows(Fritz Haber Institute)
P-16	**Hard x-ray second harmonic generation in diamond** Daniel Schacher(University of Nevada, Las Vegas)