

PROGRAM

1st day: 8th, Wed

8:15– Registration

9:00–9:05 Opening remarks: Naoki Watanabe

Morning Session 1 (Observation) Chair: Takashi Shimonishi

9:05–9:45 **1. Jennifer Noble (CNRS, France) Invited**

“The Evolution of Ice Mantles during the Star Formation Process: An IceAge JWST Study of Chamaeleon I”

9:45–10:15 **2. Yao-Lun Yang (RIKEN, Japan) Invited-short**

“Icy Origin of Complex Molecules in Embedded Protostars”

10:15–10:35 **3. Yuki Okoda (RIKEN, Japan)**

“Molecules in Outflow Shocked Regions: JWST meets ALMA”

10:35–10:50 Coffee Break

Morning Session 2 (Experiment) Chair: Atsuki Ishibashi

10:50–11:30 **4. Ralf I. Kaiser (The University of Hawai'i, USA) Invited**

“Exploiting Molecular Beams and Surface Science Studies to Untangle the Formation of Complex Organics in Deep Space - From Nanoparticles to Interstellar Ices”

11:30–11:50 **5. Isabelle Weber (National Yang Ming Chiao Tung University, Taiwan)**

“Electronic Spectroscopy of Polycyclic Aromatic Hydrocarbons in solid *para*-Hydrogen”

11:50–12:10 **6. Takeshi Hasegawa (The University of Tokyo, Japan)**

“Experimental Measurement for Absorption Cross Section of Two-coordinated Dangling OH Bonds on the Surface of Amorphous Ice at 20 K”

12:10–13:40 Lunch

Afternoon Session 1 (Theory & Model) Chair: Germán Molpeceres

13:40–14:00 **7. Brian Camora Ferrari (Leiden University, The Netherlands)**

“Exploring the Mysteries of CO Ices: Weak Interactions and Vibrational Energy Relaxation”

- 14:00–14:20 **8.** Gerard Pareras (Universitat Autònoma de Barcelona, Spain)
“Heterogeneous Catalysis in Space: CH₃OH Formation via Fischer-Tropsch Reactions. A Computational Approach”
- 14:20–15:00 **9.** Thanja Lamberts (Leiden University, The Netherlands) **Invited**
“Atomistic Insight into Molecular Processes on Interstellar Ice Analogs”
- 15:00–15:20 Coffee Break

Afternoon Session 2 (Theory & Model) Chair: Shota Notsu

- 15:20–16:00 **10.** Christopher N. Shingledecker (Benedictine College, USA) **Invited**
“Next-generation Cosmic Ice Models for the JWST Era”
- 16:00–16:20 **11.** Kenji Furuya (NAOJ, Japan)
“A Framework for Incorporating Binding Energy Distributions in Astrochemical Models”
- 16:20–16:40 **12.** Niccolò Bancone (Universitat Autònoma de Barcelona, Spain)
“HCN Adsorption and Reactivity on Cosmic Silicates”
- 16:40–18:40 Poster Session

2nd day: 9th, Thu

Morning Session 1 (Theory & Model) Chair: Thanja Lamberts

- 9:00–9:40 **13.** Albert Rimola (Universitat Autònoma de Barcelona, Spain) **Invited**
“Surface Chemical Properties of Interstellar Grains. Insights from Quantum Chemical Simulations”
- 9:40–10:00 **14.** Yudai Kobayashi (Meiji University, Japan)
“Dissolution Process of Forsterite Coexisting with Interstitial Water”
- 10:00–10:20 **15.** Taiki Suzuki (The University of Tokyo, Japan)
“Chemical Evolution in Turbulent Disks: Stochastic Effect by UV photons”
- 10:20–10:40 Coffee Break

Morning Session 2 (Observation) Chair: Ross Burns

- 10:40–11:20 **16.** Jose Cernicharo (IFF-CSIC, Spain) **Invited**
“The QUIJOTE Line Survey: Chemical Complexity in TMC-1”

11:20–11:50 **17. Ceci Xue (MIT, USA) Invited-short**
“Modeling Maser Activity of Organic Molecules toward Sgr B2”

11:50–12:10 **18. Nanase Harada (NAOJ, Japan)**
“The Chemistry in the Starburst Galaxy NGC 253 from the ALCHEMI Survey”

12:10–13:40 Lunch

Afternoon Session 1 (Experiment) Chair: Kaori Kobayashi

13:40–14:20 **19. Cristina Puzzarini (University of Bologna, Italy) Invited**
“From Lab to Space: An Integrated Rotational Spectroscopy–Quantum Chemistry Strategy”

14:20–14:40 **20. Yuji Nakano (Rikkyo University, Japan)**
“Stability of Diatomic Carbon Anion C_2^- in Interstellar Clouds: A Time-resolved Laboratory Spectroscopy in a Cryogenic Ion Storage Ring”

14:40–15:00 **21. Hajime Tanuma (Tokyo Metropolitan University, Japan)**
“Possible Observation of Linear H_3^+ in the Laboratory”

15:00–15:20 Coffee Break

Afternoon Session 2 (Experiment) Chair: Ni-En Sie

15:20–16:00 **22. Danna Qasim (Southwest Research Institute, USA) Invited**
“Pushing Astrochemistry into the Solar System through Mission Science”

16:00–16:20 **23. Yoichi Nakai (RIKEN, Japan)**
“Methanol Production through Irradiation of Low-energy CH_3^+ Ions on an Ice Surface at Low Temperature”

16:20–18:20 Poster Session

18:45– Banquet

3rd day: 10th, Fri

Morning Session 1 (Model, Observation) Chair: Ceci Xue

- 9:00–9:40 **24.** Eric Herbst (University of Virginia, USA) **Invited**
“Formation of Sodium-bearing Species in the Interstellar Medium”
- 9:40–10:00 **25.** Yoko Oya (Kyoto University, Japan)
“Overview of ALMA Large Project FAUST (Fifty AU STudy of the chemistry in the disk/envelope system of Solar-like protostars)”
- 10:00–10:20 **26.** Yoshihide Yamato (The University of Tokyo, Japan)
“ALMA Observations of the Young Bursting Star V883 Ori: Chemistry of Complex Organic Molecules in the Protoplanetary Disk”
- 10:20–10:40 Coffee Break

Morning Session 2 (Experiment) Chair: Kenji Furuya

- 10:40–11:00 **27.** Guillermo M. Muñoz Caro (Centro de Astrobiología (CAB), INTA, Spain)
“Photochemistry of Sulfur-species in Ice Mantles”
- 11:00–11:20 **28.** Asper Chen (National Central University, Taiwan)
“VUV Photodesorption of H₂S Ices”
- 11:20–11:40 **29.** Thanh Nguyen (ILTS, Hokkaido University, Japan)
“Chemical Pathways of Methyl Mercaptan (CH₃SH) with Hydrogen Atoms on Interstellar Ice”
- 11:40–12:20 **30.** Yasuhiro Oba (ILTS, Hokkaido University, Japan) **Invited**
“Chemical Evolution from the Interstellar Medium to the Solar System: Insight from the Analysis of Asteroidal Materials”
- 12:20–12:30 Concluding Remarks: Nami Sakai
- 12:30–14:00 Lunch
- 14:00– Free Discussion and Lab Tour

Posters

Session 1: 8th,16:40–18:40

Session 2: 9th,16:20–18:20

1. Takahiro Oyama (RIKEN, Japan)
“Intensity-calibrated Molecular Spectroscopy and Determination of Intrinsic Line Intensity $S\mu^2$ for CH₂DOH”
2. Manamu Kobayashi (University of Toyama, Japan)
“Microwave Spectroscopy of CH₂Cl₂”
3. Fumiaki Kidono (University of Toyama, Japan)
“The Microwave Spectroscopy of *trans*-ethyl methyl ether”
4. Ryuto Takemasa (Rikkyo University, Japan)
“Development of a Merged-beam Apparatus to Study the Interstellar Ion-neutral Reactions”
5. Souichirou Tamaki (Rikkyo University, Japan)
“Development of Far Ultraviolet Light Source Using Laser-produced Plasma”
6. Kunihiro Okada (Sophia University, Japan)
“A New Approach for Reaction Rate Measurements of Cold Ion-polar Molecule Reactions”
7. Masato Nakamura (Nihon University, Japan)
“Collisional Excitation and Collision-induced Dissociation of Astrochemically Relevant Molecules by Ion Impacts”
8. Antonio Jiménez-Escobar (INAF-OAPa, Italy)
“Electron Discharge Chemistry in Exoplanetary CO₂-rich Atmospheres”
9. Tetsuya Hama (The University of Tokyo, Japan)
“Impurity Contribution to Photoabsorption of Saturated Fatty Acids and its Implications to Tropospheric Chemistry”
10. Hanako Enomoto (The University of Tokyo, Japan)
“Chemical Composition of Interstellar Amorphous Silicate Dust”
11. Shiori Inada (The University of Tokyo, Japan)
“Kinetic Isotope Effects in High-temperature Evaporation in Protoplanetary Disks”
12. Yuki Kimura (Hokkaido University, Japan)
“Development and Preliminary Results of the Low-temperature Gas Evaporation Method to Understand Nucleation Conditions of Water Ice and Related Materials”
13. Shogo Tachibana (The University of Tokyo, Japan)
“Returned Sample from Carbonaceous Asteroid Ryugu and its Astrochemical Implications”
14. Yi-Shan Chung (National Yang Ming Chiao Tung University, Taiwan)
“Infrared Spectra of Isomers of Protonated and Hydrogenated Phenanthridine Isolated in Solid *para*-Hydrogen”

15. Jun Miyazaki (Tokyo Denki University, Japan)
"Photochemistry of Six-membered Hydrocarbons in Solid Parahydrogen"
16. Atsuki Ishibashi (Hokkaido University, Japan)
"Quantitative Analysis for the Branching Ratio of CH₃O and CH₂OH Radicals Formed from CH₃OH + OH Reaction on Ice Surface"
17. Chutipong Suwannajak (National Astronomical Research Institute of Thailand, Thailand)
"Laboratory Development for the Study of Interstellar Surface Chemistry"
18. Ni-En Sie (Hokkaido University, Japan)
"Visible Light-induced Photodesorption of OH Radicals Adsorbed on Water Ice Surface"
19. Tomonari Wakabayashi (Kindai University, Japan)
"Laboratory Studies on the Infrared Emission Spectra of Fullerene C₆₀ Thin Films"
20. Yu-Jong Wu (NSRRC, Taiwan)
"A Laboratory-Demonstrated Model that Explains the Galactic Extended Red Emission: Graphene Exposed to Far-ultraviolet Light"
21. Reo Sato (The University of Tokyo, Japan)
"In situ Electron Diffraction Analysis of Stacking Sequences in Ice I under Interstellar Conditions"
22. Hiroshi Hidaka (Hokkaido University, Japan)
"Atomic Force Microscopy Measurement of Local Contact Potential Difference of Amorphous Solid Water Deposited at 15 and 100 K"
23. Yuki Nakano (Hokkaido University, Japan)
"Preliminary Study of Radiation-induced Morphological Alteration to Water Ice (Ih)"
24. Tomoya Yamazaki (Hokkaido University, Japan)
"In situ Cryogenic Transmission Electron Microscopy Observation on the Formation of Hydrogen-ordered Hexagonal Ices and its Astrophysical Implications"
25. Kazuaki Kuwahata (Yokohama City University, Japan)
"Nuclear Quantum Effect in the Phase Transition between Ice VII and Ice X"
26. Marten Raaphorst (Leiden University, the Netherlands)
"The Cold Path to Saturation: Hydrogenation of Cyanoacetylene towards Ethyl Cyanide in Dark Molecular Clouds"
27. Ziwei Zhang (RIKEN, Japan)
"Rovibrational Transitions in HCl due to Collisions with H₂: Spin-free and Hyperfine-resolved Transitions"
28. Vittorio Barriosco (Universitat Autònoma de Barcelona, Spain)
"Capturing the Essence of Interstellar Icy Grains: Unveiling Computed Binding Energies and Frequency Distributions of Significant S-Bearing Species"

29. Berta Martínez-Bachs (Universitat Autònoma de Barcelona, Spain)
"Insights into the Third-Body Role of Interstellar Water Ices Mantles in Formamide Formation Route"
30. Germán Molpeceres (The University of Tokyo, Japan)
"Cracking the Puzzle of CO₂ Formation on Interstellar Ices"
31. Anton Feenev-Johansson (The University of Tokyo, Japan)
"Studying Shell Structure in CO Outflows in the eDisk Survey"
32. Takashi Shimonishi (Niigata University, Japan)
"ALMA Unbiased Spectral Line Survey of an Organic-poor High-mass Protostar in the Large Magellanic Cloud"
33. Tomoya Hirota (NAOJ, Japan)
"Millimeter Emission in the Methanol Maser Flare Source G24.33+0.14"
34. Yoshimasa Watanabe (Shibaura Institute of Technology, Japan)
"50 au-scale Chemical Composition of R CrA IRS7B-a: FAUST"
35. Shaoshan Zeng (RIKEN, Japan)
"Amides Inventory Towards the G+0.693-0.027 Molecular Cloud"
36. Shota Notsu (The University of Tokyo, Japan)
"Detection of ¹³C¹⁷O Line Emission in the Disk around the Young Outbursting Protostar V883 Ori by ALMA Observations"
37. Tomohiro Yoshida (NAOJ, Japan)
"Complex Carbon Isotope Fractionation in a Protoplanetary Disk"
38. Hideko Nomura (NAOJ, Japan)
"Molecular Formation in Low-Metallicity Hot Cores"
39. JC. Del Valle (University of Stuttgart, Germany)
"Theoretical Investigation of the Formation Pathways of (Z)-1,2-Ethenediol and Glyceraldehyde"
40. Yuko Komichi (The University of Tokyo, Japan)
"Chemistry of Forming Molecular Clouds: Comparison with Molecular Absorption Lines"
41. Eric Mates-Torres (Universitat Autònoma de Barcelona, Spain)
"From Stardust to Life: Decoding the Role of Ionic Minerals on the Formation of Prebiotic Molecules"
42. Ryota Ichimura (NAOJ / SOKENDAI, Japan)
"Gas-Grain Model for Carbon Isotope Fractionation of COMs in Star-Forming Cores"
43. Ross Burns (RIKEN, Japan)
"The Impact of High-mass Protostellar Accretion Bursts on the Physical Conditions in the ISM in High-mass Star Forming Regions"
44. Angela Ciaravella (INAF - OAPA, Italy)
"Laboratory Simulations of Ice Growth in Space"