Program of AOSS-6/JSS-34

December 3, 2025 (Wednesday)

15:00 – 16:30 Tour (Shimadzu Tokyo Innovation Plaza)

17:00 – 18:30 Welcome Party

December 4, 2025 (Thursday)

9:00 – 9:30 Opening Remark

9:30 – 10:45 Oral Session I (Chair : K. Yasui and M. Ashokkumar)

9:30 – 10:00 Plenary Lecture 1
Muthupandian Ashokkumar (University of Melbourne)
“Sonochemistry and Sonoprocessing: Limitations & Opportunities for real world applications”

10:00 – 10:15 Invited Talk 1
Susumu Nii (Kagoshima University)
“MHz Ultrasound-Driven Process Intensification in Chemical Engineering”

10:15 – 10:30 Oral Talk 1
Tony Chave[1], William’s Nzodom[1], Sabine Valange[2], Sergey I. Nikitenko[1] ([1]Univ Montpellier, [2]Université de Poitiers)
“Coupling ultrasonic irradiation and hydrothermal conditions for the synthesis of zeolites”

10:30 – 10:45 Oral Talk 2
Rachel Pflieger, Mícheál P. Moloney (Institut de Chimie Séparative de Marcoule)
“The sonochemical/sonoluminescent effects of repositioning the gas feed tube”

10:45 – 11:00 Break

11:00 – 12:00 Oral Session II (Chair : K. Yasuda and T. Tuziuti)

11:00 – 11:15 Invited Talk 2

Claudia L. Bianchi[1], Vincenzo Fabbrizio[1], Melissa G. Galloni[1], Fabio Gosetti[2], Ermelinda Falletta[1] ([1]Università degli Studi di Milano, [2]University of Milano-Bicocca)

"Engineering and Empowering Photocatalysts with Ultrasound: A Dual Strategy for Environmental and Energy Challenges"

11:15 – 11:30 Invited Talk 3 (Video)

Jun-Jie Zhu (Nanjing University)

"Ultrasound-induced Electrochemiluminescence"

11:30 – 11:45 Oral Talk 3

Linda Weavers, Kaiden Murphy, Mark Tischer, Shengxi Gui, Rongjun Qin (The Ohio State University)

"Field and Remote Sensing Assessment of Ultrasound Treatment on Algal Abundance in Freshwater Reservoirs"

11:45 – 12:00 Oral Talk 4 (Video)

Cheng Ma (Yangzhou University)

"In Situ Ultrasound Irradiation for Regulating Electrochemiluminescence Intensity and Layer Thickness"

12:00 – 12:15 Introduction to High Speed Video Camera (Shimadzu Co.)

12:15 – 13:45 Lunch

13:45 – 14:45 Oral Session III (Chair : H. Okawa and M. Sivakumar)

13:45 – 14:00 Invited Talk 4

Joydip Mondal, Shen Long, Jie Wu (CSIRO Mineral Resource)

"Application of ultrasound for scale prevention in the mineral processing industry"

14:00 – 14:15 Oral Talk 5*

Žan Boček, Tilen Kopač, Aleš Ručigaj, Matevž Dular (University of Ljubljana)

"Real-time observation of cellulose dispersion sonication and hydrogel network formation"

14:15 – 14:30 Oral Talk 6*

Jitendra Carpenter (Manipal Institute of Technology)

"Ultrasonic emulsification: Mechanistic Insights, Stability Factors, and Applications"

14:30 – 14:45 Oral Talk 7* (Video)

Bingze Du, Xinyue Gong, Xiasheng Guo, Dong Zhang, Juan Tu (Nanjing University)

“Real-Time Multiplexed Passive Cavitation Mapping and B-Mode Imaging on Modified Diagnostic Ultrasound Platform”

14:45 – 15:00 Break

15:00 – 15:45 Oral Session IV (Chair : Y. Hayashi and Y. Kojima)

15:00 – 15:15 Invited Talk 5 (Video)

Xiaoge Wu[1,2], Juanjuan Wang[1,2] ([1]Yangzhou University, [2]Ministry of Agriculture and Rural Affairs)

“Algae removal through the synergy of ultrasound and functional nanomaterials”

15:15 – 15:30 Invited Talk 6 (Video)

Yue Wu[1], Yang Tao[1], Joydip Mondal[2], Muthupandian Ashokkumar[3] ([1]Nanjing Agricultural University, [2]CSIRO Mineral Resources, [3]The University of Melbourne)

“Ultrasound-Induced Inactivation of Trypsin Inhibitors for Improving Their Functionality”

15:30 – 15:45 Oral Talk 8*

Aerfate Abulikemu, Kenji Okitsu (Osaka Metropolitan University)

“Sonochemical degradation of CCl_4 in alcohol-water system”

15:45 – 16:00 Group Photo

16:00 – 18:00 Poster Session

Odd No. : 16:00 – 17:00

Even No. : 17:00 – 18:00

18:30 – 20:30 Banquet (Kawasaki Rei Hotel)

December 5, 2025 (Friday)

The morning oral sessions will be held in two separate venues.

9:00 – 10:15 Oral Session V (Chair : S. Nii and T. J. Tiong) : Main Hall A

9:00 – 9:15 Oral Talk 9

Timm Joyce Tiong[1], Mitchell Shyan Wei Lim[1], Siew Wen Ching[1], Yeow Hong Yap[2] ([1]University of Nottingham Malaysia, [2]Universiti Tunku Abdul Rahman)

"Ultrasound-Assisted Co-Precipitation vs Aging: A Study on Ni–SiO_2 Catalysts"

9:15 – 9:30 Oral Talk 10

Takuya, Yamamoto[1], Shinya, Okino[2] ([1]Osaka Metropolitan University, [2]Tokyo Denki University)

"Development of an evaluation method to determine the influence of macroscopic mass transfer on apparent sonochemical reaction rate"

9:30 – 9:45 Oral Talk 11

Julien Margate[1], Alexandre Pylliser[1], Thomas Dumas[2], Nicolas Clavier[1], Stéphanie Szenknect[1], Sergey I. Nikitenko[1], Matthieu Virot[1] ([1]ICSM, Univ Montpellier, [2]CEA, DES, ISEC, DMRC, Univ Montpellier)

"Acoustic Cavitation-Driven H_2O_2 Generation as a Tool to Probe Oxidative Alteration of Uranium-based $(U_xTh_{1-x})O_2$ Oxides"

9:45 – 10:00 Oral Talk 12

Gopal Vijayalakshmi Jayachandran, Thirugnanasambandam Sivasankar (National Institute of Technology, Tiruchirappalli)

"Recovery of heavy oil from contaminated soil and separation of asphaltene using ultrasound assisted process"

10:00 – 10:15 Oral Talk 13

Mícheál, P, Moloney, Rachel, Pflieger (Institut de Chimie Séparative de Marcoule)

"From Sound to Light; a Nano Approach."

10:15 – 10:30 Coffee Break

10:30 – 11:30 Oral Session VI (Chair : N. Enomoto and S. Anandan) : Main Hall A

10:30 – 10:45 Invited Talk 7

Ben Nanzai[1], Yusuke Masuda[1], Kazuya Hikida[1], Kazuhiro Yagishita[2] ([1]Shizuoka Institute of Science and Technology, [2]ENEOS Corporation)

"Ultrasonic cavitation in organic solvents and its interfacial region"

10:45 – 11:00 Invited Talk 8

Nandha Kumar Sundarraj, Sambandam Anandan (National Institute of Technology, Tiruchirappalli)

"Ultrasound-Assisted Synthesis Of Samarium-Based Metal-Organic Framework For Supercapacitor Applications"

11:00 – 11:15 Oral Talk 14

Tatsuya Shishido[1], Yamato Hayashi[1], Hirotsugu Takizawa[1], Minoru Ueshima[2] ([1]Tohoku University, [2]Daicel Corporation)

"Fabrication of Ag coated SiO_2 particles via silver formate using sustainable sonochemical process"

11:15 – 11:30 Oral Talk 15

Yuki Mizuno[1], Jiye Jin[2], Yuta Yamamoto[3], Tsuyoshi Yamaguchi[1], Keiji Yasuda[1] ([1]Nagoya University, [2]Shinshu University, [3]Nagoya University)

"Size-tunable synthesis of Pt-shelled core-shell nanoparticles as highly active electrocatalysts using ultrafine bubbles and ultrasound"

9:00 – 10:15 Oral Session VII (Chair : K. Sekiguchi and B. Nanzai) : Main Hall B

9:00 – 9:15 Oral Talk 16*

Kotaro Fujishiro[1], Satoshi Okada[2], Takahiro Kuchimaru[3], Yuta, Kurashina[1] ([1]Tokyo University of Agriculture and Technology, [2]Institute of Science Tokyo, [3]Jichi Medical University)

"Evaluation of intracellular reactive oxygen species generated by high-frequency sonochemistry with titanium dioxide nanoparticles using a fluorescent indicator"

9:15 – 9:30 Oral Talk 17*

Quinten Goris[1], Ariana Bampouli[1], Mohammed Noorul Hussain[1], Olivier Louisnard[2], Georgios D. Stefanidis[3], Tom Van Gerven[1] ([1] KU Leuven, [2] Université de Toulouse, [3]National Technical University of Athens)

"A New Strategy in Modelling Sonochemical Reactors: Combining Acoustics with Heat and Mass Balances with Applications to Cavitating Viscous Fluids"

9:30 – 9:45 Oral Talk 18*

Madoka Yoshikawa, Yamato Hayashi, Hirotsugu Takizawa (Tohoku University)

"Sonochemical synthesis of CNF/AgNPs composites in aqueous media and their application as low-temperature sinterable conductive materials"

9:45 – 10:00 Oral Talk 19*

Benjamin Parrish, Lian Liu, Judy Lee (University of Surrey)

"Impact of Ultrasound Frequency & Power on Nucleation, Growth, &

Fragmentation of Needle-Shaped Crystals”

10:00 – 10:15 Oral Talk 20* (Video)

Xinyue Gong, Bingze Du, Xiasheng Guo, Dong Zhang, Juan Tu (Nanjing University)

“Synergistic effect of ultrasound transdermal drug delivery based on multi-step dynamic focal shift”

10:15 – 10:30 Coffee Break

10:30 – 11:30 Oral Session VIII (Chair :M. Kubo and H. Matsumoto) : Main Hall B

10:30 – 10:45 Oral Talk 21*

Ryota Aoki, Takuya Yamamoto (Osaka Metropolitan University)

“Investigation on the occurrence mechanism of power-induced Quenching under high-intensity ultrasound”

10:45 – 11:00 Oral Talk 22*

Kanji Hattori, Takuya Yamamoto (Osaka Metropolitan University)

“Numerical analysis of dynamic behavior of acoustic cavitation bubble under an ultrasound with harmonic waves to elucidate the mechanism of power-induced quenching”

11:00 – 11:15 Oral Talk 23*

S.W. Ching, T. Joyce Tiong (University of Nottingham Malaysia)

“Ultrasound-assisted synthesis of silica-supported MgO-NiO nanocomposite for photocatalytic degradation of methylene blue”

11:15 – 11:30 Oral Talk 24* (Video)

Qi Zhang[1], Gepu Guo[1] Xiaoge Wu[2] Qingyu Ma[1], Juan Tu[3] Dong, Zhang[3] ([1]Nanjing Normal University, [2]Yangzhou University, [3]Nanjing University)

“2D spatiotemporal passive cavitation imaging and evaluation during ultrasound thrombolysis based on diagnostic ultrasound platform”

11:30 – 13:45 Lunch

13:45 – 14:15 JSS General Assembly (In Japanese)

14:15 – 14:30 Break

14:30 – 15:30 Symposium of Biomedical Application of Ultrasound (Chair : K. Ninomiya and K. Okitsu)

14:30 – 14:50 Plenary Lecture 2

Takashi Kondo, Keiji Yasuda, Jun Kumagai, Ken-ichi Inoue, Hiroshi Hashizume, Hiromasa Tanaka, Kenji Ishikawa, Masaru Hori (Nagoya University)

"Free Radical Formation Induced by Ultrasound. Comparisons with Low-temperature Plasma and Ionizing Radiation"

14:50 – 15:10 Invited Talk 9

Ken-ichi, Kawabata (Sonire Therapeutics, Inc.)

"Biological effects induced by ultrasound and their application for cancer therapy"

15:10 – 15:30 Invited Talk 10

Loreto B. Feril, Jr.[1], Hiroshi Kida[1], Yutaro Yamasaki[1], Takayuki Koga[1], Hitomi Endo[1], Katsuro Tachibana[1], Hiromasa Tanaka[2], Takashi Kondo[2] ([1]Fukuoka University School of Medicine, [2]Nagoya University)

"Therapeutic ultrasound strategies in intra-abdominal cancer: potential of ultrasound and plasma-activated lactated Ringer's"

15:30 – 16:00 Closing Ceremony

Notices

- The presentation time, including Q&A, is as follows.

  Plenary Lecture : 30 min

  Invited Talk and Oral Talk : 15 min

  However, in Symposium of Biomedical Application of Ultrasound, all three presentations are 20 minutes long.
- Presentations marked with an asterisk (*) are candidates for the Young Scientist Award. The winners will be announced at the closing ceremony.

List of Poster Presentation

P1* Hayata Yamamoto, Su-Gi Chong, Naoki Shida, Mahito Atobe (Yokohama National University)
"Acceleration of C-H Arylation Reaction by Ultrasonic Cavitation"

P2* Naoya Tanimoto, Hideya Kawasaki (Kansai University)
"Ultrasound-Driven Surface Engineering of EGaIn Liquid Metal Particles for Enhanced Reduction Catalysis"

P3* Yuzuki Furui, Jin Sone, Hideya Kawasaki (Kansai University)
"Evaluation of Hydrogen production for GCN-TiO_2 composite as sonocatalyst"

P4* Teruyuki Masuda, Takamasa Saito, Masaki Kubo (Tohoku University)
"Control of response temperature of thermoresponsive polymers by ultrasonic irradiation condition"

P5 Sayaka Higashi[1], Takafumi Horie[2], Hiroaki Sugiyama[3], Akihisa Kanda[3], Kuo-Lun Tung[4], Keita Taniya[1], Satoru Nishiyama[1], Naoto Ohmura[1] ([1]Kobe University, [2]Osaka Metropolitan University, [3]Kaneka Corporation, [4]National Taiwan University)
"Effect of Intercalating Agents on Ultrasonic Exfoliation of ZrP Nanoparticles"

P6* Shogo Kimura, Daisuke Kobayashi (Tokyo Denki University)
"Effects of flow rate on ultrasonic reaction using ultrasonic continuous tank reactor"

P7* Ru-Nan Zhao[1,2,3], Wen-Jun Wang[1,3], Jiang-Ning Hu[2], Dong-Hong Liu[1,3], Bei-Wei Zhu[1,2] ([1]Zhejiang University, [2]State Key Laboratory of Marine Food Processing and Safety Control, [3]Zhejiang University) (Nothing posted)
"Ultrasound-fabricated hydrophobic cross-linked cyclodextrin metal-organic framework nanocarrier for improved quercetin stability and sustained release"

P8* Rin Ito, Daisuke Kobayashi (Tokyo Denki University)
"Effects of relationships between frequency and particle size on activation of sonolysis"

P9* Ruyu Zhang, Peng Lu, Wenjun Wang, Donghong Liu (Zhejiang University) (Nothing posted)
"Membrane Barrier Collapse via Ultrasound-Fenton: Synergistic Porolysis Enables Radical Access to Lipid Cores"

P10* Mayuki Jono, Daisuke Kobayashi (Tokyo Denki University)
"Synthesis of PEMA particles using ultrasonic tandem emulsification method"

P11 Donghong Liu (Zhejiang University) (Nothing posted)
"The mechanism and application of ultrasound in food preservation and sterilization"

P12 Wenjun Wang, Congyi Xu, Donghong Liu (Zhejiang University) (Nothing posted)
"Ultrasonication combined with pH-shifting pretreatment promotes soy protein fibrillation: Effects of pretreatment methods on growth kinetics and various properties"

P13 Toshiki Yamanaka, Yamato Hayashi, Jun Fukushima, Hirotsugu Takizawa (Tohoku university)
"Waste–free sonochemical synthesis of ZnO nanoparticles using Zn and pure water"

P14* Akihiko Terada, Ben Nanzai (Shizuoka Institute of Science and Technology)
"Elucidation of the cavity interface region by sonochemical degradation of solubilized micelles"

P15* Masaki Unno[1], Kengo Honda[1], Susumu Nii[2], Rira Kumasaki[2], Ben Nanzai[1] ([1]Shizuoka Institute of Science and Technology, [2]Kagoshima University)
"Interaction of surfactant molecules with ultrasonic cavitation"

P16* Zhaokang Lei, Xinyi Zuo, Xiajie Guo, Chenghui Wang (Shaanxi normal university) (Nothing posted)
"Research on the Generation of Functional Cavitation Structures Based on Boundary Condition regulation"

P17* Shunta Morishima[1], Kazuhiro Yagishita[2], Ben Nanzai[1] ([1]Shizuoka Institute of Science and Technology, [2]ENEOS Corporation)
"Changes in sonoluminescence intensity with ultrasonic irradiation in organic solvents"

P18* Ryohei Oi, Rei Hayashi, Kazuaki Ninomiya (Kanazawa University)
"Alkyl radical generation by ultrasound irradiation to liposomes encapsulating radical polymerization initiator"

P19 Iseul Na, Chaewoon Hwang, Yeeun Kim, Younggyu Son (Kumoh National Institute of Technology)
"Visualization of sonochemical activity in large-scale 20 kHz probe systems: Single and dual probe applications"

P20 Chaewoon Hwang, Iseul Na, Jongbok Choi, Younggyu Son (Kumoh National Institute of Technology)
"Sonoelectrochemical hydrogen generation in 300-kHz sonicator systems"

P21 Yeji Lee, Iseul Na, Yuna Ko, Younggyu Son (Kumoh National Institute of Technology)
"Effect of dissolved gas mixtures on sonochemical oxidation in 300 kHz sonoreactor systems: Generation of H_2O_2, NO_2^-, and NO_3^-"

P22 Jongbok Choi, Dukyoung Lee, Iseul Na, Younggyu Son (Kumoh National Institute of Technology)
"Enhanced degradation of PFAS by sonochemical reaction: Effects of dissolved gas"

P23* Kosuke Arita, Kazuhiko Sekiguchi (Saitama University)

"Decomposition of benzotriazole UV stabilizers using ultraviolet light and ultrasound"

P24* Yuka Miyahara, Hirokazu Okawa, Ren Jie, Takahiro Kato (Akita University)
"Effect of Ultrasound Frequency on recovery and purity of Maltene from Bitumen"

P25 Jiye Jin[1], Qiran Zhang[1], Keiji Yasuda[2] ([1]Shinshu University, [2]Nagoya University)
"Development of an Electrochemical Sensor for the Detection of Nitric Oxide Generated in Ultrasonic Reaction Fields"

P26* Koki Azegami, Takumi Mitsumoto, Jiye Jin (Shinshu University)
"Delayed Chemiluminescence of Luminol/Ascorbic Acid System Triggered by Ultrasound"

P27 Masayuki Nakayama[1,3], Masaki Wakamiya[1], Junichiro Soejima[1], Junki Ono[2], Jiye Jin[3] ([1]Kaijo Corporation, [2]AESC Japan Ltd., [3]Shinshu University)
"Sonochemical preparation of a gold nanoparticle–conductive polymer modified electrode for electrochemical determination of uric acid in human urine"

P28* Hui-Won Ju, Jun-Seo Kim, Tae-Oh Kim (Kumoh National Institute of Technology)
"Development and high-efficiency evaluation of a dye-sensitised solar cell (DSSC) utilising cavitation reactions to modify TiO_2 via an ultrasonic process"

P29* Ye-Ji Park, Na-Hye Kim, Tae-Oh Kim (Kumoh National Institute of Technology)
"Ultrasonic-Thermally Activated MOF for Efficient Formaldehyde Oxidation"

P30* Yamato Ojiro, Daisuke Kobayashi (Tokyo Denki University)
"Effect of dissolved oxygen concentration on ultrasonic reaction field"

P31 Yaorong Wu, Zhaokang Lei, Chenghui Wang (Shaanxi Normal University) (Nothing posted)
"Analysis of the non-spherical vibration mode of bubbles in viscous liquids"

P32 Anoop Kishore, Vatti[1], Jitendra, Carpenter[1], Sivakumar, Manickam[2] ([1]Manipal Institute of Technology, [2]Universiti Teknologi Brunei)
"Encapsulation of Pharmaceutical Drugs in Nanoemulsion Formulations Using Molecular Dynamics Simulations"

P33 Seong-Woo Shin, Hyeon-Bin Kim, Tae-Oh Kim (Kumoh National Institute of Technology)
"Water electrolysis using ultrasonic synthesis nano-particle NiFe/MoO_3@CFP catalyst electrode"

P34* Shinyu Nagasaka[1], Kazuhiko Sekiguchi (Saitama University)
"Effect of CO_2 concentration on sonochemical reduction of CO_2 formed from calcium carbonate"

P35 Hyang-Bok Lee[1,2], Pak-Kon Choi[3] ([1]Japan Women's University, [2]Kansai University, [3]Meiji University)
"Broadband noise in acoustic emission signals from a dancing bubble"

P36* Jin Sone, Yuzuki Furui, Hideya Kawasaki (Kansai University)
"Synergistic Photo-Piezocatalytic Activity of Exfoliated Graphitic Carbon Nitride

Nanosheets Under Ultrasonic Irradiation”

P37* Kazumi Yashima, Kaito Yokose, Kazuhiko Sekiguchi (Saitama University)
“Decomposition of VOC gas by Fenton reaction at the gas-liquid interface of ultrasonic mist”

P38 Gerard Nathan Mathias[1], K Vamshi Krishna Goud[1], Srikanth Divi, Anoop Kishore Vatti[1], Jitendra Carpenter[1], Sivakumar Manickam[2] ([1]Manipal Institute of Technology, Universiti Teknologi Brunei)
“Curcumin Encapsulation in Groundnut Oil-in-Water Nanoemulsions”

P39 Tom Verstraeten[1], Susumu Nii[2], Naoki Komatsu[3], Jean-Marc Leveque[4] ([1]Savoie Mont Blanc University, [2]Kagoshima University, [3]Kyoto University, [4]Université Grenoble Alpes)
“Surface Modification of Nanodiamonds by Irradiating 500 kHz Ultrasound”

Notices

- Core time:
  Odd-number : 16:00 – 17:00
  Even-number: 17:00 – 18:00
- Presentations marked with an asterisk (*) are candidates for the Young Scientist Award. The winners will be announced at the closing ceremony.