December 2 Wednesday

9:30 - 10:30	Plenary Talk 2	Room A: Main Hall

Chair: Tatsuru Shirafuji (Osaka Metropolitan University)

PL-2 **Development of Plasma Sources: From Low Pressure to Atmospheric Pressure, and from Solid to Liquid Surfaces**
Hirotaka Toyoda (Nagoya University, Japan)

Coffee Break

2A-O1-1	Life Sciences	Room 1

Chair: Shinya Kumagai (Meijo University, Japan)

11:00-11:25 **1 (Invited)** **Plasma-activated water generated by Transient Spark discharge and its use for biomedical applications**
Mário Janda (Comenius University, Slovakia)

11:25-11:40 **2** **Contribution of Endogenous Reactive Oxygen Species to Plasma-Induced Molecular Introduction: Focusing on Taro (*Colocasia esculenta*) Callus Cells**
Masafumi Jinno (Ehime University, Japan)

11:40-11:55 **3** **Growth of an Indica Rice Cultivar Treated with Foliar Application of Plasma-activated Lactate Solution**
Hiroshi Ehara (Nagoya University, Japan)

11:55-12:10 **4** **Regulation of Plant Morphogenesis under Simulated Micro- and Partial-Gravity Conditions Using Plasma-Synthesized Dinitrogen Pentoxide**
Kazuki Wada (Tohoku University, Japan)

12:10-12:25 **5** **Delayed Pro-Survival Bystander Effects of Cold Atmospheric Plasma: A Soluble-Factor-Mediated Response in B16F10 Melanoma Cells**
Jinuo Chen (The University of Tokyo, Japan)

12:25-12:40 **6** **Effects of Plasma Irradiation on Growth in a Photosynthetic Organism**
Shota Terashima (Tohoku University, Japan)

2A-O2-1	Diagnostics	Room 2

Chair: Koichi Sasaki (Hokkaido University, Japan)

11:00-11:25 **1 (Invited)** **Optical diagnostics to investigate the nitrogen triplet system**
Jan Kuhfeld (Plasma Matters BV, Eindhoven, The Netherlands)

11:25-11:50 **2 (Invited)** **Thermal Stratification Governs O_3-to-NO_x Chemistry in Closed Air Plasma Reactors**
Sanghoo Park (Korea Advanced Institute of Science and Technology, Republic of Korea)

11:50-12:05 **3** **Approximate Collisional-Radiative Model of Fluorine Atoms without Molecular Processes under Ionizing Plasma Condition**
Hiroshi Akatsuka (Institute of Science Tokyo, Japan)

12:05-12:20 **4** **Plasma Elongation Dynamics of Nanosecond-Pulsed High-Frequency Discharges in High-Speed Flows**
Si Shen (Institute of Science Tokyo, Japan)

12:20-12:35 **5** **Generation and Investigation of Generation Conditions of Laser-Sustained Plasma (LSP) using Nitrogen Gas and a Near-Infrared Laser**
Eito Kato (Shizuoka University, Japan)

Lunch

Special Session 2 | Plasama Seed | Room 2

Chair: Kazunori Koga (Kyushu University, Japan), Kenji Ishikawa (Nagoya University, Japan)

13:00-15:00

1 **Characterization of cambium stem cells using single nucleus RNA-seq analysis**
Dongbo Shi (RIKEN CSRS, Japan)

2 **Visualization of Carbon-Radical Distribution on Plasma-Irradiated Seeds Using Electron Spin Resonance**
Kenichi Inoue (Nagoya University, Japan)

3 **Essential Roles of Reactive Oxygen Species in Plant Growth and Their Modulation by Cold Atmospheric Plasma**
Kazuyuki Kuchitsu (Tokyo University of Science, Japan)

4 **Development of High-Sensitive Multi-Element Analysis System in Single Cell using Inductively Coupled Thermal Plasma, "Metal Cytometer"**
Akitoshi Okino (Institute of Science Tokyo, Japan)

2P-O1-1 | Elementary Processes | Room 1

Chair: Takayoshi Tsutsumi (Nagoya University, Japan)

14:00-14:25 **1 (Invited)** **Data-driven determination of electron swarm parameters using Bayesian inference and physics-informed neural networks**
Satoru Kawaguchi (Muroran Institute of Technology, Japan)

14:25-14:40 **2** **Long-Lifetime Hydrogen TALIF Observed After the Termination of an Atmospheric-Pressure H_2/Ar Dielectric Barrier Discharge**
Raio Torihama (Hokkaido University, Japan)

14:40-14:55 **3** **Discrete and modal ion focusing effects manifestation at microscale**
Chris Phong Van Nguyen (Tokyo University of Sciencem Japan)

14:55-15:10 **4** **First-Principles Prediction of Critical Fields and Mixture Synergy in Insulating Gases from R-matrix Electron-Collision Cross Sections**
Rei Tsukada (The University of Tokyo, Japan)

Coffee Break

Sepcial Session 3 | Diamond | Room 1

Chair: Norio Tokuda (Kanazawa University, Japan)

15:30-17:30

1 **Diamond Homo- and Heteroepitaxy by Plasma-Enhanced Chemical Vapor Deposition**
Kimiyoshi Ichikawa (Kanazawa University, Japan)

2 **Single-atom-level observation of diamond surfaces using an ultra-high vacuum atomic force microscope**
Yoshiaki Sugimoto (The University of Tokyo, Japan)

3 **Analysis of Atomic Arrangements on Diamond Surfaces and Interfaces Using Photoelectron Holography**
Mami Fujii (Ritsumeikan University, Japan)

4 **From c-BN to h-BN/diamond heterostructures: Growth and Interfaces**
Robert Nemanich (Arizona State University, United States of America)

16:00-17:30	Poster Session Core Time 3	Room 2

2P-P3-1 **Optical And Electrical Measurements On The 1st Discharge Between Needle Electrode And Ionic Liquid**
Ching-Hung Huang (National Sun Yat-sen University, Taiwan)

2P-P3-2 **Problems in long-term operation of microplasma contactors and analysis of power consumption**
Shusuke Oka (Osaka Metropolitan University, Japan)

2P-P3-3 **Toward Estimation of OH Radical Flux and Its dV/dt Dependence in Liquid Treatment Using a Microplasma Contactor**
Takeomi Sawa (Osaka Metropolitan University, Japan)

2P-P3-4 **Correlation between Plasma-Generated Halogen Concentrations and Ion Concentration Distributions at Gas-Liquid Interface**
Kosuke Tachibana (Oita University, Japan)

2P-P3-5 **Gasification pathways of biomass-related model compounds in solution plasma**
Takaki Miyamoto (Kyoto University, Japan)

2P-P3-6 **Nitrogen Fixation from Water and Air Using a Combination of Plasma-Driven Electrolysis and Photocatalysis**
Kosuke Yagi (Hokkaido Univ. , Japan)

2P-P3-7 **Effect of Ethanol Addition on the Structure Formation of Au Nanoparticles in Plasma-Driven Electrolysis**
Yuki Araki (Hokkaido University, Japan)

2P-P4-L24 **Simultaneous Measurement of Electron Density and Deposited Film Thickness Using Same-Diameter Probes in the Double Curling Probe Method**
Daisuke Ogawa (Chubu University, Japan)

2P-P11-1 **Plasma-Driven Catalytic Dry Reforming of Methane over Ni/CeO_2: Reaction Characteristics and Promotion Mechanisms**
Dae-Yeong Kim (Institute of Science Tokyo, Japan)

2P-P11-2 **Kinetic Analysis of N_2/H_2 and N_2/NH_3 Plasma Reaction Fields**
Sena Suzuki (Tohoku University, Japan)

2P-P11-3 **Enhancing plasma NO_x production through controlling the dynamic equilibrium**
Ayman Abdelaziz (Institute of Science Tokyo, Japan)

2P-P11-4 **Plasma-Induced Growth Enhancement of *Botryococcus braunii***
Taro Takeno (Osaka Institute of Technology, Japan)

2P-P11-5 **Evaluation of bactericidal factors in atmospheric-pressure-air-glow plasma-activated rice straw solution**
Kenta Shimizu (Meijo University, Japan)

2P-P11-6 **Effect of Applied Voltage on Collection Efficiency of Inorganic Aerosols in a Rotary Electrode Dielectric Barrier Discharge Reactor**
Yin Nwe Nyein (Kanazawa University, Japan)

2P-P11-7 **Development of Mist-Assisted DBD Plasma Device for Plasma Activated Water Generation**
Yuya Ikebe (Osaka Institute of Technology, Japan)

2P-P11-8 **Effect of DC-Biased Pulsed Discharge on Droplet Electrostatic Precipitation**
Tasuku Hatakeyama (Iwate University, Japan)

2P-P11-9 **Structural Characterization of Sulfur-Incorporated Three-Dimensional Graphene toward Lithium-Sulfur Batteries**
Ryota Ichiyanagi (Meijo University, Japan)

2P-P11-10 **Effect of plasma treatment on iron azaphthalocyanine-supported carbon black**
Tsukasa Irie (Meijo University, Japan)

2P-P11-L11 **Pulsed Surface Discharge on a Self-Concentrating Polyethylene Plate: In-Place PFAS Decomposition and Fluorine Mass Balance**
Si Shen (Institute of Science Tokyo, Japan)

2P-P11-L12 **Effect of Feed H/C Ratio on Carbonaceous Product Formation in Hydrocarbon Decomposition Using a Multiphase AC Arc**
Tomoyasu Kawashita (Kyushu University, Japan)

2P-P11-L13 **Microkinetic Modeling of Eley-Rideal Surface Dynamics during Inductively Coupled Plasma-Assisted Methanation**
Susumu Toko (The University of Osaka, Japan)

2P-P12-1 **Spatiotemporal Evaluation of ROS-Induced Coloration Dynamics in KI-Starch Gel**
Ren Katsuki (Kyushu University, Japan)

2P-P12-2 **Transport Characteristics of Reactive Nitrogen Species in Atmospheric-Pressure Air Plasma Nitrogen Fixation**
So Shimizu (Kyushu University, Japan)

2P-P12-3 **Effects of Plasma-Treated Water Applied to Plant Leaf Surfaces on Water Physiology and Nitrogen Content in Plants**
Tomonori Kawano (The University of Kitakyushu, Japan)

2P-P12-4 **High Density ·OH Radicals Induced by Atmospheric Plasma for Rapid Biomedical Device Sterilization at Room Temperature**
Ben Li Cheng (National Sun Yat-sen University, Taiwan)

2P-P12-5 **Influence of operating pressure on CO formation in non-thermal plasma**
Kazunori Koga (Kyushu Univ, Japan)

2P-P12-6 **Plasma exposure effects on substance introduction into cells**
Shinya Kumagai (Meijo University, Japan)

2P-P12-7 **Selective Inactivation Effects of Lactate Ringer's Solution Activated by Atmospheric-Pressure-Air-Glow Plasma on Breast Cancer Cells**
Naohiro Noro (Meijo University, Japan)

2P-P12-8 **Cell Proliferation-Promoting Activity and Intercellular Uptake of Oxygen Radical-Treated Tryptophan Derivative Solutions**
Takashi Eto (Meijo University, Japan)

2P-P12-9 **Structural analysis of bactericidal factors derived from oxygen-radical activated surfactant solutions**
Soya Goto (Meijo university, Japan)

2P-P12-10 **Role of Soaking Duration in Plasma-Activated Water Treatment relative to Red Clover Seed Imbibition Phases**
Genki Ono (Kyushu University, Japan)

2P-P12-11 **Importance of Plasma Treatment Optimization for Field Application of Plasma Seed Priming in Rice**
Yoshihisa Ikeda (Ehime University, Japan)

2P-P12-12 **Enhanced Germination and Growth Promotion in Iron-Coated Rice Seeds after Plasma Treatment**
Hirotoshi Sakai (The University of Kitakyushu, Japan)

2P-P12-13 **Implementation of Cell-Collagen Scaffolds and Heart Parts by Extrusion Based 3D Bioprinting**
Bo-Han Chen (National Taiwan University of Science and Technology, Taiwan)

2P-P12-14 **Optimization the Fabrication and Geometric Design of MeHA Microwell Platform to Regulate the Germ Layer Differentiation of Mouse Embryonic Stem Cells (ES-D3)**
Hui-Fang Lin (National Taiwan University of Science and Technology, Taiwan)

2P-P12-15 **IES-driven Plasma Jet Effectively Reduces Lentiviral Infection to Mammalian Cells**
Nana Saito (Iwate University, Japan)

2P-P12-L16 **Roadmap of plasma agriculture in Japan**
Kazunori Koga (Kyushu University, Japan)

2P-P12-L17 **Non-Thermal Plasma for Juice Treatment**
Joanna Pawlat (Lublin University of Technology, Poland)

2P-P12-L18 **Effects of Atmospheric-Pressure Plasma Irradiation on Early Growth of Arabidopsis Seedlings**
Tadashi Kunieda (Kyoto Prefectural University, Japan)

2P-P12-L19 **Numerical Analysis of the Effects of Plasma Stimuli on Membrane Transport**
Satoshi Uchida (Tokyo Metropolitan University, Japan)

2P-P12-L20 **Recent Insights into the Relationship Between Plasma Irradiation, Translational Repression, and Acclimation in *Arabidopsis thaliana***
Takahiro Hamada (Okayama University of Science, Japan)

2P-P12-L21 **Characterization of *nDart*-Induced Rice Mutants and the Importance of Bioresource Backup through IBBP**
Kazuo Tsugane (National Institute for Basic Biology, Japan)

2P-P12-L22 **Roles of Reactive Species in Cold Plasma-Induced Promotion of Rice Seed Germination**
Kazuya Ishikawa (Nagoya University, Japan)

2P-P12-L23 **Time-Dependent Nitrosylation of Cysteine by Nitrogen Oxide Radical Irradiation**
Hokuto Mori (Meijo University, Japan)

2P-P12-L24 **Bactericidal and Fungicidal Effects of Plasma-Activated Sodium Lactate Solutions Containing Surfactant Fractionated by Liquid Chromatography**
Rio Oura (Meijo University, Japan)

2P-P12-L25 **Effect of Post-Irradiation Time of Atmospheric-Pressure Air-Glow Plasma-Activated Lactate Ringer's Solution on Selective Inactivation of Breast Cancer Cells**
Kazuhito Suzuoki (Meijo University, Japan)

2P-P12-L26 **Exploring the Factors Underlying Growth Responses of Synechocystis Plasma-Treated Medium**
Shota Terashima (Tohoku University, Japan)

2P-P12-L27 **Qualitative Evaluation of Membrane-Filter Thickness Effect on the Permeability of Nitrogen Oxide Radical-Derived Reactive Species by Absorption Spectroscopy**
Kosuke Muto (Meijo University, Japan)

2P-P12-L28 **Plasma-Based On-Site Nitrogen Fixation and Closed-Loop Gas Recycling for Future Lunar Agriculture**
Toshiro Kaneko (Tohoku University, Japan)

2P-P12-L29 **Inactivation of Extremophilic Microorganisms and Effects of Water Plasma on Protein Components**
Kirara Yamanaka (Kyush University, Japan)

2P-P12-L30 **Changes in Seed Coat Lipids Induced by Cold Plasma Jet Irradiation**
Shoko Matsushita (Nihon University, Japan)

2P-P12-L31 **Changes in cell activity in a co-culture system of macrophages and cytokines induced by oxygen plasma irradiation of a porous medium**
Hinako Nakamura (Kyushu Univ., Japan)

2P-P12-L32 **Development of a Novel Porous Membrane Plasma Source and Its Inactivation Effects on Human Cancer Spheroids**
Yoshihito Yagyu (Kyushu University, Japan)

2P-P12-L33 **Utilization of Low-Temperature Plasma Technology for Improving Early Growth of Sago Palm**
Hiroshi Ehara (Nagoya University, Japan)

2P-P13-1 **High power frequency-tunable rf plasma source for space propulsion**
Yuki Otani (Tohoku University, Japan)

2P-P13-2 **Analysis of ion plume structures in electric propulsion systems based on plasma-induced Si substrate damage dynamics**
Taiga Sasakura (Kyoto University, Japan)

2P-P14-1 **Anisotropic Hydrophilization of Resin Surface Using Atomic Oxygen Produced by Laser Photolysis of O_3**
Yusei Takano (Tokyo Metropolitan University, Japan)

2P-P14-2 **Investigation of plasma gas chemistry on the growth mechanism of PEALD-SiO_2 using Bis(diethylamino)silane**
Pankaj Attri (Kyushu University, Japan)

2P-P14-3 **New hybrid technology for deposition of transparent conductive oxide films for solar cell applications**
Ana Lacoste (Grenoble Alpes University, France)

2P-P14-4 **Proof-of-Principle Experiment on Heat-Load Dispersion Using a Detached Plasma Facing a Rotating Liquid-Metal Target**
Takumi Seto (Tohoku University, Japan)