JISU JEON

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RESEARCH INTERESTS

Low temperature plasma modeling, Plasma driven solution electrochemistry,
Plasma etching and deposition for microelectronics

EDUCATION

Aug. 2023 – Present **UNIVERSITY OF MICHIGAN** **Ann Arbor, USA**

Ph.D., Nuclear Engineering and Radiological Sciences

- Computational plasma science and engineering group (Principal Investigator: Mark J. Kushner)
- Developed a 0D liquid chemistry framework initiated by 2D pulsed-plasma reactive gas fluxes, incorporating gas-liquid reaction mechanism at the interface and dissolutions into the bulk liquid
- Formulated plasma chemistries for the investigation of PFAS remediation and aniline polymerization processes and the optimization of plasma discharge systems and reactor designs
- Relevant courses: Introduction to Low Temperature Plasmas, Plasma Chemistry and Plasma Surface Interactions, Monte Carlo Method, Applied Machine Learning

Sep. 2021 – May. 2023 **SOGANG UNIVERSITY** **Seoul, Korea**

M.S., Mechanical Engineering

- Won the 4th prize at the 7th KSME-SEMES (Korean Society of Mechanical Engineers-Samsung Electronics Mechatronic Solutions) Open Innovation Challenge with a presentation on Monte Carlo collision model considering rotations of molecules to simulate sputtered film deposition
- Relevant courses: Introduction to Nanotechnology and Engineering, Numerical Heat Transfer, Design of Experiments and Statistical Analyses, Classical Physics, Quantum Mechanics

Mar. 2017 – Aug. 2021 **SOGANG UNIVERSITY** **Seoul, Korea**

B.S., Double major in Mechanical Engineering and Physics

- Won the 1st prize at Sogang University Student Academic Conference with a presentation on a simulation of magnetic confinement of electrons in a magnetron sputtering reactor
- Relevant courses: Fluid Mechanics, Continuum Mechanics, Electromagnetism, Heat and Mass Transfer, Finite Element Analysis, Statistical Physics, Modern Optics, Physics Laboratory

PUBLICATIONS

- (In progress) Jisu Jeon, Mark J. Kushner, Aniline Polymerization in Plasma Driven Solution Electrochemistry; expected to be submitted by Feb. 2027
- (In progress) Jisu Jeon, Tiago C. Dias, et al., A Mechanism for Plasma Induced PFAS-in-Water Degradation on Long-Time Scales; expected to be submitted by Nov. 2026
- Tiago C. Dias, Jisu Jeon, et al., Controlling Reactivity at the Plasma-Liquid Interface: Applications to Remediation of PFAS in Water, Plasma Chemistry and Plasma Processing 46, 84 (2026)

SELECTED PRESENTATIONS

- Oral, "PFOA Degradation in Water: Long-Time-Scale Modeling Investigation", 19th International Symposium on High Pressure Low Temperature Plasma Chemistry, Montreal, Canada (2026)
- Poster, "Aniline Polymerization Mechanism using Plasma-driven Solution Electrochemistry", 27th Europhysics Conference on Atomic and Molecular Physics of Ionized Gases, Portugal (2026)
- Oral, "Plasma Degradation of Surfactant Molecules at the Gas-Liquid Interface", 26th International Symposium on Plasma Chemistry, Minnesota, USA (2025)
- Oral, "Mechanisms for PFAS Degradation at the Plasma-Liquid Interface", 78th APS Annual Gaseous Electronics Conference, Seoul, South Korea (2025)
- Oral, "Dissociation and Ionization Due to Direct Electron Impact onto Liquid Surfaces", 77th APS Annual Gaseous Electronics Meeting, San Diego, USA (2024)

SKILLS

- Python, Matlab, Fortran, C++, Pointwise, COMSOL Multiphysics®