Prof. Thi-Thuy-Nga Nguyen

(Nagoya Univ., Japan)

Thi-Thuy-Nga Nguyen received her bachelor's degree from Hanoi University of Science and Technology (HUST), Vietnam, in 2011. She was awarded a scholarship for a combined Master & PhD program in Materials Science and Engineering at Feng Chia University, Taiwan (2012–2016), under the supervision of Prof. Ju-Liang He, focusing on coating/deposition technologies using both wet & dry processes. From Mar 2017 to Jun 2020, she worked as a postdoctoral researcher in the Hori-Ishikawa Laboratory at Nagoya University, Japan, where she developed high-density atmospheric pressure plasmas for high-speed glass etching and cleaning applications (removal of Sn and SnO_2), and conducted plasma diagnostics.

Dr. Nga was appointed as a designated assistant professor in Jul 2020 and promoted to designated lecturer in Apr 2023 at the Center for Low-temperature Plasma Sciences (cLPS), Nagoya University. During this period, she proposed and demonstrated new etching chemistries—particularly nonhalogen chemistries for hard-to-etch materials—and developed advanced etching apparatuses and technologies, including atomic layer etching (ALE). She deals with dry etching of hard-to-etch materials such as platinum (Pt) and ternary material TiAlC as well as selective etching of TiAlC and TiN at relatively low temperatures under both medium and low-pressure conditions. She proposed the concept of wet-like plasma etching technology and developed the wet-like ALE using high-density vapor-plasma in Sep 2020, and later proposed and demonstrated nanomist ALE in Apr 2023. She investigated etching mechanisms by analyzing plasma-surface interactions using plasma diagnostics equipment (high resolution-optical emission spectroscopy) and material characterization techniques such as *in situ* ellipsometry, *in situ* ATR-FTIR, and X-ray photoelectron spectroscopy (XPS). Her research was conducted in collaboration with Toyota Technological Institute, AGC Inc., Hitachi Ltd., Hitachi High-Tech Corp., Sumitomo Seika Chemicals Co., Ltd.

She has published 22 papers in scientific journals such as *ACS Applied Materials & Interfaces*, *Applied Surface Science*, *Scientific Reports*, *Plasma Processes and Polymers, Journal of Applied Physics*, and *Surface & Coatings Technology*, including 13 papers as lead author (first and corresponding author). She has also filed 12 patents, serving as the primary inventor on 7 of them. She was awarded the Best Oral Presentation Award in 2021 and the Best Poster Presentation Award in 2017 and 2025 at the ISPlasma/IC-PLANT, Japan.