

Seminar

# Advancing Plasma Innovations and Perspectives in Thailand

March 11th, 15:00 ~ 16:00

Room# 127, 3rd Buidling,

Faculty of Science and Engineering, Iwate University

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## -Speaker-

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## 【Abstract】

Plasma innovation is an emerging interdisciplinary field that integrates plasma physics with biomedical applications to address critical healthcare challenges. In Thailand, plasma technology in medicine is still in its nascent stage, yet gaining traction among researchers, universities, and industries. This presentation explores recent advancements, challenges, and prospects of plasma medicine in the Thai ontext. Key areas of focus include plasma-based sterilization, microbial inhibition, and the therapeutic effects of plasma-generated reactive species, such as nitric oxide (NO), hydroxyl radicals (OH), and hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>). Recent studies in Thailand demonstrate the optimization of plasma systems for sterilization and biomedical applications, showcasing its potential in improving healthcare standards, particularly in infection control, wound healing, and antimicrobial treatments. On a broader scale, Thailand is fostering collaborations between academia, research institutions, and the private sector to build expertise and infrastructure for plasma medicine. The technology is expected to play a crucial role in addressing challenges like antimicrobial resistance and medical sterilization, particularly in resource-limited settings. Additionally, this presentation highlights ongoing research initiatives, including plasma-assisted biomolecule synthesis and rare sugar production, which position plasma technology as a key innovation driver in Thailand' s healthcare and pharmaceutical industries. By integrating experimental design, plasma engineering, and medical applications, plasma medicine, agriculture and food are set to contribute significantly to Thailand' s vision for sustainable solutions.

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