クラペット タネット KLADPHET, Thanet

キーワード

Electrical / Plasma dynamics / Numerical simulation

分野等　大気圧プラズマ

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職名　特命助教

学位　博士（工学）

研究分野

Main area of my study relates with numerical investigation through simulations for experimental observations on atmospheric pressure plasma applications. For this purpose, I collaborate my work with the Plasma Dynamics Laboratory at Nagaoka University of Technology. Even though I didn't conduct any experiments as primary investigator, I will join some of the experiments to get idea of the experimental conditions before perform simulation work.

Chemical species in plasma are a more complex process that provides crucial data for optimizing their applicability. Furthermore, investigations of chemical distribution properties is a challenging process. Consequently, numerous studies were conducted using numerical.
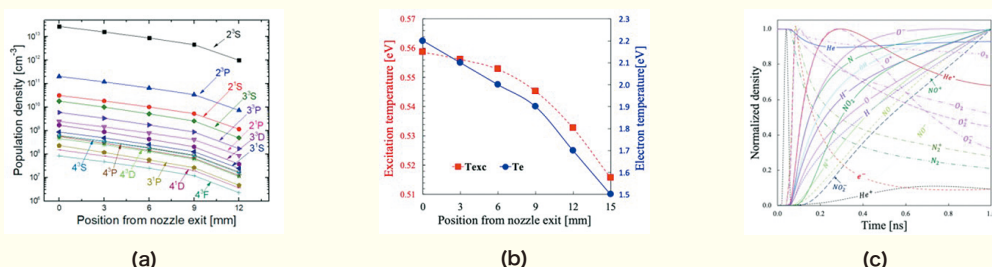

(a)　　　　　　　　　(b)　　　　　　　　　(c)

Fig. Prediction results (a) Population density along with plasma jet (b) Distribution of T_{exc} and T_e against the position from nozzle exit (c) Predicted normalized density of chemical specimens in the APP with ambient air. [Ref. Plasma and Fusion Research 16, 2401060 (2021) DOI: 10.1585/pfr.16.2401060]

Research publications:

1. **Thanet, K.,** Thai V. P., Fernando, W. T., Takahashi, K., Kikuchi, T., & Sasaki, T. **(2022)**. Using numerical analysis of ordinary differential equation systems to predict the chemical concentration after plasma irradiation. AIP Advances 12, 055116.
2. **Thanet, K.,** Fernando, W. T., Takahashi, K., Kikuchi, T., & Sasaki, T. **(2021)**. Determination of Helium-Discharge Atmospheric-Pressure Plasma Parameters and Distribution Using Numerical Simulation. Plasma and Fusion Research, 16, 2401060-2401060.

興味のあること・技術 PR

- Atmospheric pressure plasma can be used to obtain chemically reactive plasma quickly. Power supply development. I have demonstrated the effects of atmospheric pressure plasma by conducting plasma reactor development, plasma measurement, and evaluating objects as part of the process.

- Atmospheric pressure plasma
    - Control of wettability and adhesiveness of sample surface
    - Atmospheric pressure CVD by sample gas control
    - Gas treatment system using special electrode shape
    - Control of microbial activity / inactivity
    - Adhesive control of human iPS cells

Fundamentals of programming languages such as Python and C++.
ptical emission spectrometer.

企業との連携実績

For 14 years of working with a Japanese company.
  - (2001-2013) NOK corporation
  - (2017-2019) Toray group

Experience work on overseas projects such as in Singapore, China, and Japan.

Knowledge skill: Kaizen, QCC, Group work, Leadership and so on.

3rd Thailand Kaizen Award 2010 in Automation Kaizen & Karakuri Kaizen from Prime Minister of Thailand. (Reduce the loss of copper in production)

President of Thai student association (TSAJ) in Nagaoka University of Technology, Niigata (2015).

企業へ向けて

・I am engaging in a wide range of research with the keyword "plasma", from basic physics to engineering applications, experiments to numerical simulations.

・Relationship of plasma dynamics laboratory.