

Microwave application to liquid process in reduced pressure environment
HirotaKa Toyoda, Kazuya Yamaguchi, Kengo Yunoki, Haruka Suzuki, Kensuke Sasai
Nagoya University

Plasma-liquid interaction has attracted much attention for various applications such as water purification, decomposition of liquid waste, biotechnology, agriculture, and material synthesis. Although the water vapor environment inhibits plasma production because of electron attachment loss, reduced pressure supports to conduct much easier plasma sustainment. To solve this issue, a liquid treatment set-up is proposed, where reduced pressure is automatically formed by liquid flow with the aid of Venturi effect. As an example of the water waste treatment, organic decomposition by the in-line liquid treatment system will be shown. Furthermore, silver nanoparticles production from silver nitrate or other related solutions by the in-line liquid treatment system will be presented.