

Abstract Submitted
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Student Excellence Award Finalist: Size control of plasma-activated liquid layer on ice surface by thermodynamic parameters NORITAKA SAKAKIBARA, TSUYOHITO ITO, KAZUO TERASHIMA, The University of Tokyo — Plasma-liquid interactions are attracting a significant attention for wide range of applications from materials synthesis to bio-medical applications. We are now investigating plasma-ice interface as a novel opportunity of plasma-liquid interactions research [1]. Here, we report size control of plasma-activated liquid layer on ice surface, by tuning thermodynamic parameters such as temperature and concentration of aqueous solution [2]. In this study, plasma-induced synthesis of gold nanoparticles film was performed on the frozen gold ions solution. As a result, the thickness of the synthesized film was revealed to be tuned in micrometer scale, depending on temperature of freezing or initial concentration of gold ions solution. This result points the demonstration of size control of plasma-activated liquid layer on the surface of ice, which should give rise to a new insight and novel approach on plasma-liquid interactions. [1] N. Sakakibara and K. Terashima, J. Phys. D: Appl. Phys. 50 (2017) 22LT01. [2] N. Sakakibara et al., Langmuir 35 (2019) 3013-3019.

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