**Title of project**  
Frontier science of interactions between plasmas and nano-interfaces

**Head Investigator Name**  
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**Abstract of Research Project**  
Plasma-based fabrication of nanomaterials and nanostructures is widely employed for top-down processes such as ULSI processing as well as bottom-up processes such as carbon nanotube production. This research project explores frontier science of interactions between plasmas and nano-interfaces by focusing on novel features such as fluctuations of interactions due to the nanometer scale. Plasma processing based on the science realizes highly precise top-down processes by suppressing fluctuations and well controlled self-organized bottom-up processes by controlling fluctuations. This project aims to bring about an explosive development of fabrication technologies of nanomaterials and nanostructures.