

Abstract Submitted  
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**Current Status of Divertor Plasma Simulator (DiPS-2) for Dust Interactions with Plasma and Surfaces** IN JE KANG, SOON-GOOK CHO, MIN KEUN BAE, DONG-HAN LEE, SANG-YOU KIM, SUNG-HOON HONG, HEUNG-GYOON CHOI, Hanyang University, TAE-HYUP LHO, National Fusion Research Institute, KYU-SUN CHUNG, Hanyang University — The divertor plasma simulator (DiPS-2) which is a linear plasma machine with  $\sim 8 \text{ MW/m}^2$  power density emitted from a DC plasma discharge source with a  $\text{LaB}_6$  cathode is under installation for experiments of dust interactions with plasma and surfaces in fusion research fields. Specifications of DiPS-2 have weakly magnetized helium plasmas (density  $\sim 10^{13} \text{ cm}^{-3}$ , electron temperature  $\sim 1 - 10 \text{ eV}$ , particle flux  $\sim 10^{23}/(\text{sec}\cdot\text{m}^2)$ ), which are of the order of plasma parameters in a typical divertor. Currently, a vacuum chamber with the diameter of 560 mm and the length of 800 mm called as “dust interaction with surface chamber (DiSC)” is being setup to an end flange of DiPS-2. The DiSC has a load-lock system for easily changing material targets and plasma diagnostics systems such as laser induced fluorescence (LIF), laser Thomson scattering (LTS), thermocouples and fast scanning probes (FSP) with SP, TP and MP. Using the measured dust and plasma parameters, SOL heat flux width ( $\lambda_q$ ) and sheath heat transmission factor ( $\gamma_s$ ) will be experimentally deduced for the analysis of the dust effects to plasmas. Initial probe data will be addressed.

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