

Abstract Submitted
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Transport and Removal experiment of Dust (TReD) for the Dust Particle Controls HYUN-JONG WOO, Center for Edge Plasma Science, Hanyang University, SOON-GOOK CHO, KYU-SUN CHUNG, EUN-KYUNG PARK, SANG-JOON PARK, Dept. of Electrical Engineering, Hanyang University, SUK-HO HONG, KSTAR Research Center, National Fusion Research Institute — The tokamak dust might be hazardous based on the radioactive from tritium or activated metals (e.g. tritium retention), toxic and/or explosive (or chemically reactive) in steam and air conditions. Therefore, controls of dust particle inventory can be treated a critical issue for safe operation of ITER and next step fusion devices. Although the dust removal experiments for fusion reactor had been tried in 1990s, it cannot directly applied to ITER and next step fusion reactors since scale issues does not solved. In this work, one developed the dedicated plasma device for the dust particle transport and removal tests to the level required in ITER or next step fusion reactors (~ 1 m dust particle transportation), which is called TReD (Transport and Removal experiments of Dust). The TReD also plan to test the dust particle detectors, such as electrostatic dust detector and capacitance diaphragm microbalance (CDM) used (or will be used) in fusion plasmas. The first experimental results of dust particle transport and removal will be explained along with the design concepts, assembly structure, also collaboration plans, etc.

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