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Simulation of Dust Generation by Injecting a Pulsed Laser to a tungsten target in DiPS-2 Linear device INSUN PARK, INJE KANG, Department of Electrical Engineering, Hanyang University, SUNGYONG SHIM, Department of Physics, Hanyang Univ, MIN-KEUN BAE, HYE-TEAK OH, Department of Electrical Engineering, Hanyang University, CHAHWAN OH, Department of Physics, Hanyang Univ, KYU-SUN CHUNG, Department of Electrical Engineering, Hanyang University — A transient heat flux $\sim 50MJ/m^2s^{\frac{1}{2}}$, which are frequently generated such as edge localize modes (ELMs), results in a higher thermal damage to plasma facing components (PFCs) since it is over the damage threshold $\sim 10MW/m^2$ of tungsten walls in a steady state at a divertor of International Thermonuclear Experimental Reactor (ITER). For studies on the mechanism of dust generation and the effect of dusts on plasmas, an experimental simulation of dust generation in Divertor Plasma Simulator - 2 (DiPS-2) was conducted by using an Nd:YAG pulsed laser (Energy, pulse duration, frequency) with various conditions such as a pulsed laser power, roughness of tungsten surfaces and irradiation angles. To investigate simulation results, size and quantity of dusts and its effect on plasmas were analysed by Scanning Electron Microscopy (SEM), optical diagnostics of Rayleigh scattering and electric probes (single and Mach probes).

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