

Abstract Submitted
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Retention property of deuterium for fuel recovery in divertor by using hydrogen storage material SAORI MERA, AKIRA TONEGAWA, YOSHIHITO MATSUMURA, Tokai Univ, KOHNOSUKE SATO, Chubu Electric Power Co. Inc., KAZUTAKA KAWAMURA, Tokai Univ — Magnetic confinement fusion reactor by using Deuterium and Tritium of hydrogen isotope as fuels is suggested as one of the future energy source. Most fuels don't react and are exhausted out of fusion reactor. Especially, Tritium is radioisotope and rarely exists in nature, so fuels recovery is necessary. This poster presentation will explain about research new fuel recovery method by using hydrogen storage materials in divertor simulator TPD-Sheet IV. Samples are tungsten coated with titanium; tungsten of various thickness, and titanium films deposited by ion plating on tungsten substrates. The sample surface temperature is measured by radiation thermometer. Retention property of deuterium after deuterium plasma irradiation was examined with thermal desorption spectroscopy (TDS). As a result, the TDS measurement shows that deuterium is retained in titanium. Therefore, Titanium as a hydrogen storage material expects to be possible to use separating and recovering fuel particles in divertor.

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