

Abstract Submitted
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Fundamental study on separation of fuel and impurity particles by using divertor simulator TPD-Sheet IV TAKAFUMI MAEKAWA, TAKAAKI IIJIMA, TAKUYA HASE, AKIRA TONEGAWA, Tokai Univ, KOHNO-SUKE SATO, Chube Electric Power Co.Inc., KAZUTAKA KAWAMURA, Tokai Univ — The pumping of helium ash has become important for the control in the SOL/divertor plasma because of the helium ash makes dilution of the fuel density and makes decreases the core plasma temperature. The selective removal of helium ash using by ion cyclotron resonance (ICR) method has been studied in a linear divertor simulator, TPD-Sheet IV. We have demonstrated the ICR method of the helium or helium/hydrogen sheet plasma by the RF electrodes of two parallel plates, sandwiching the plasma. Measurements of the ion temperature in the plasma were carried out a fast scanning Faraday cup. In addition, the ion densities in the plasma were measured by an omegatron mass analyzer and the neutral densities of resonant ions were measured by a quadrupole mass analyzer. As a result, the ion densities of heated ion decrease with increasing the RF power. It is found that the selective removal of the helium ions in the sheet plasma is successful by ICR method.

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