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Experimental measurements of the total energy loss in low pressure inductively coupled argon plasma YOUNG-KWANG LEE, MIN-HYONG LEE, CHIN-WOOK CHUNG, Hanyang University — Total energy lost per electron-ion pair lost (ε_T) was measured experimentally in a low pressure inductively coupled argon plasma. ε_T represents not only the elastic and inelastic collision energy loss of electron-neutral but also the kinetic energy loss when the electron and ion escape to the wall. In order to determine ε_T , the modified power balance of a global model (spatially-averaged) is properly derived using some assumptions. A floating-type probe working at very low bias voltage (~ 1.0 V) was applied to obtain the electron temperature and plasma density at the plasma-sheath boundary. At 10 mTorr, the measurement shows that the measured $\varepsilon_T \sim 100$ V gradually decreased with absorbed power and began to saturate. These ε_T are consistent with the theoretical results by Lee *et al* [1]. [1] Min-Hyong Lee, Sung-Ho Jang and Chin-Wook Chung, Phys. Plasmas, 13, 053502 (2006)

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