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New method to measure the electron temperature in Ar/He mixture capacitive discharge HYO-CHANG LEE, MIN-HYONG LEE, CHIN-WOOK CHUNG, Electrical Engineering, Hanyang University, Republic of Korea — The electron temperatures were obtained in Ar or Ar/He capacitive discharge by using the new method to measure the electron temperature from a floating potential and a substrate potential [1]. In Ar discharge, as the gas pressures decrease the electron temperatures decrease from 4.0 eV to 1.2 eV, and as the input RF powers increase the electron temperatures slightly decrease from 3.5 eV to 2.8 eV. In the Ar/He discharge, the electron temperatures do not change linearly with the mixing ratio. However the electron temperatures increase abruptly near $P_{He}/P_{Ar+He} = 1$. These results agree well with electron temperatures measured by a floating type probe [2]. [1] Min-Hyong Lee, Ik-Jin Choe, and Chin-Wook Chung, *J. Korean Phys Soc.* 51, 1307 (2007). [2] Min-Hyong Lee, Sung-Ho Jang, and Chin-Wook Chung, *J. Appl. Phys.* 101, 033305 (2007).

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