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Effect of transverse magnetic field on electron temperature distribution between parallel plate capacitive discharge[1] SHIKHA BINWAL, Jamia Millia Islamia (A Central University), New Delhi, India, YASHASHRI PATIL, Institute for Plasma Research, Gandhinagar, Gujarat, India, SHANTANU KUMAR KARKARI, Institute for Plasma Research, HBNI, Gandhinagar, Gujarat, India, LEKHA NAIR, Jamia Millia Islamia (A Central University), New Delhi, India — A symmetric parallel plate capacitive discharge, operated at 13.56 MHz in push-pull configuration is presented. Spatial electron temperature distribution is obtained using RF compensated Langmuir probe. In the un-magnetized case, one usually finds uniform temperature between the plates, while the temperature peaks sharply near the sheaths. However when transverse magnetic field is introduced, the local electron heating near the sheath is found to spread over a significant distance resulting in a gradual increase in electron temperature from the center towards the sheath edge. Thus the average temperature in the center is also found to be enhanced as compared with un-magnetized case. Also a contrasting effect on the average electron temperature is observed with background pressure. The above observation has been depicted using COMSOL Multiphysics software. A qualitative model is given to explain the above effects introduced by the external magnetic field.

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