

Evolution of Electron Density and Temperature in the Afterglow of Low Pressure Argon Discharges

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In this presentation, we will report recent experimental and modeling results on the evolution of electron density and temperature in low pressure argon discharges in the afterglow. We will compare the predictions from different models and analyze the contribution from different loss mechanisms under various discharge conditions. Finally, we will report an interesting application of the afterglow discharge: by manipulating the contribution from different collisional processes, the determination of the rate coefficient of certain electron impact processes can be realized.

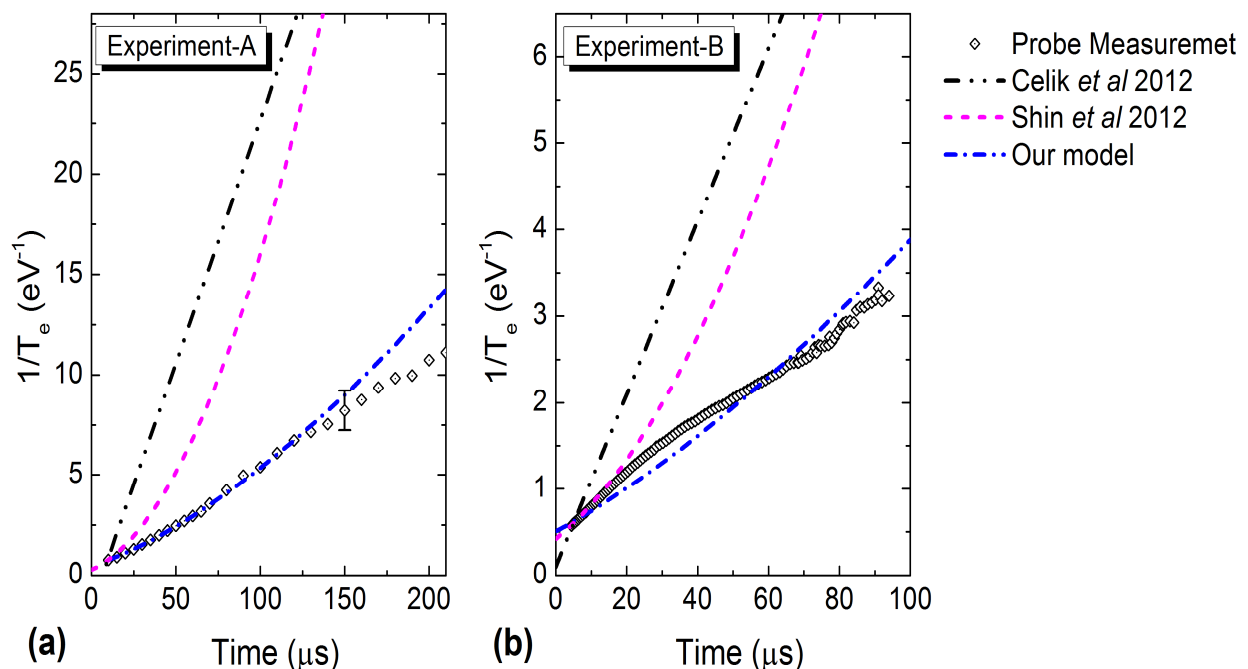


Figure 1. Comparison between the measured and the calculated evolution of the electron temperature in the argon afterglow at 10 mTorr in (a) and 15 mTorr in (b). The measurement data in (a) is obtained in our group, while the measurement data in (b) is from Kortshagen *et al* (2002).

References:

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