

Keep-in-Touch (November 16, 2021, 2.00pm)

Gas heating mechanisms in plasmas: an overview

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This talk reports a comprehensive picture of the main gas heating mechanisms in plasma discharges in different gases and mixtures, such as pure N_2 , N_2 -NO, N_2 O_2 (including air-like mixtures), and CO_2 . Modelling predictions, based on the numerical solutions of the time-dependent gas thermal balance equation, are systematically compared to experimental results. The role of wall processes, chemical kinetics, electronic and vibrational excitation to gas heating in these different plasmas is analysed and discussed in detail.