Kinetic mechanisms in CO_2-N_2 plasmas

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In this work we undertake a joint modelling and experimental investigation to study the impact of N_2 on the overall CO_2 plasma conversion. We perform our simulations solving a Boltzmann-chemistry 0D self-consistent kinetic model with the LoKI (LisbOn Kinetics) tool [1] and we compare our results with experimental data measured in low-pressure DC glow discharges.

The admixture of N_2 has a beneficial impact on CO_2 decomposition [2]. Several reasons can be assigned to it and will be discussed at the conference. Understanding the impact of the different processes on the overall kinetics, along with the validation against experimental data, will contribute to further develop the existing models [2,3] and to better control and enhance CO_2 conversion.

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