

AVVISO DI SEMINARIO

Il Prof. **Zefeng REN**, *State Key Laboratory of Molecular Reaction Dynamics, Dalian Institute of Chemical Physics, Chinese Academy of Sciences, Dalian, P.R. China*, terrà un seminario dal titolo:

Probing the Intrinsic Carrier Dynamics of Semiconducting Perovskites under Sunlight

Lunedì 12 giugno 2023

Aula B

ore 11:00 (precise)

Tutti gli interessati, in particolare gli studenti di dottorato, sono invitati ad intervenire.

Prof. Nadia Balucani

Seminar ABSTRACT

Understanding the nature of photogenerated carriers and their subsequent dynamics in semiconducting perovskites is important for developing solar cell materials and devices. However, most ultrafast dynamic measurements on perovskite materials were conducted under high carrier densities, which likely mask the genuine dynamics under low carrier densities in solar illumination conditions. In this talk, I will present a detailed experimental study of the carrier density-dependent dynamics in 3D and quasi-2D hybrid lead iodide perovskites from femtosecond to microsecond using a highly sensitive ($\Delta OD = 10^{-7}$) transient absorption (TA) spectrometer, which was recently developed in our group. We have obtained the carrier dynamics under very low carrier density in the linear response range, from which we can extrapolate the dynamic process of photogenerated carriers under sunlight. These results provide insights into an accurate intrinsic photophysics of semiconducting perovskites with direct implications for photovoltaic and optoelectronic material improvements and applications.