DIPARTIMENTO DI SCIENZE MATEMATICHE E INFORMATICHE, SCIENZE FISICHE E SCIENZE DELLA TERRA
Dottorato di Ricerca in Fisica

Appunti di Fisica '22

15 dicembre ore 15:00

aula B-1-2 (edificio B primo piano), polo Papardo

Ultrafast Transient Absorption: a tool for light conversion studies

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Ultrafast Transient Absorption is a potent tool to investigate the mechanisms following light absorption in the 100fs-100ps time range. Thanks to its high temporal resolution, it is possible to distinguish different relaxation pathways of the excited species and energy-transfer events to the surrounding environment in a disparate variety of materials. To show the broad suitability of this technique, I will discuss its exploitation within two different scientific framework: the determination of intermolecular heterofission in weakly interacting pentacene-tetracene blends, with the purpose of enhancing the efficiency of light-to-current conversion in single junction solar cells; and the determination of light-to-heat conversion dependence in plasmonic nanoparticles, aimed at increasing the photothermal response of hybrid materials for selective drug release.

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