Felicitats al nou graduat de doctorat de l'ICFO

El Dr. Hung-Wei Sun s'ha doctorat amb una tesi titulada i¿½X-ray absorption fine structure with attosecond soft X-ray pulses for condensed matter physicsi¿½

November 11, 2024

Felicitem al Dr. Hung-Wei Sun que ha defensat la seva tesi aquest mati l'Auditori de l'ICFO. El Dr. Sun va obtenir el seu master en Ciencies a la Universitat Nacional Tsing Hua a Taiwan abans d'incorporar-se al grup de recerca de Attosecond and Ultrafast Optics dirigit pel professor ICREA a l'ICFO el Dr. Jens Biegert. La seva tesi titulada i¿½X-ray absorption fi e structure with attosecond soft X-ray pulses for condensed matter physicsi¿½a ser dirigida pel Prof. Jens Biegert.

RESUM:
Understanding electron behavior in solids and their interactions with the lattice is crucial for exploring exotic phenomena in condensed matter. Traditional techniques often provide limited insights, focusing on either carriers or lattice structures independently. In contrast,

X-ray absorption spectroscopy can simultaneously measure electrons and phonons, especially with the broadband continuum soft X-ray spectrum generated through high harmonic generation, facilitating simultaneous electron and phonon physics exploration. However, the strong absorption by solid-state samples necessitates extended measurement times. This thesis introduces the upgrades to the laser system and the attosecond soft X-ray beamline at ICFO, which enhance the detectable photon flux and improve the spectral resolution of the soft X-ray spectrograph. These advancements allow for detailed investigations of phase transition phenomena in materials such as Titanium diselenide (TiSe?), providing an exceptional tool for understanding material properties at the microscopic level and paving the way for more precise studies of dynamic processes in condensed matter.

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Grup de Attosecond and Ultrafast Optics