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Felicidades al nuevo graduado de doctorado del ICFO

El Dr. Hung-Wei Sun se ha doctorado con una tesis titulada i¿½X-ray absorption fine structure with attosecond soft X-r y pulses for condensed matter physicsi¿½

November 11, 2024

Felicitamos al Dr. Hung-Wei Sun que ha defendido su tesis esta manana en el Auditorio del ICFO.
El Dr. Sun obtuvo su Master en Ciencias por la Universidad Nacional Tsing Hua en Taiwan antes de unirse al grupo de investigacion de Attosecond and Ultrafast Optics dirigido por el profesor ICREA en ICFO el Dr. Jens Biegert. Su tesis titulada i¿½X-ray absorption fi e structure with attosecond soft X-ray pulses for condensed matter physicsi¿½ue supervisada por el Prof. Jens Biegert.

RESUMEN:
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.

Tribunal de Tesis:
Dr. Oliver Chalus, THALES OPTRONIQUE S.A.
Prof. Dr. Carmen Rubio Verdu, ICFO

ICFO

Dr. Matthias Baudisch, APE-BERLIN

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Tribunal de Tesis

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Grupo de Attosecond and Ultrafast Optics