ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ
ΤΜΗΜΑ ΕΠΙΣΤΗΜΗΣ ΚΑΙ ΤΕΧΝΟΛΟΓΙΑΣ ΥΛΙΚΩΝ

ΠΑΡΟΥΣΙΑΣΗ ΜΕΤΑΠΤΥΧΙΑΚΗΣ ΔΙΠΛΩΜΑΤΙΚΗΣ ΕΡΓΑΣΙΑΣ

Τίτλος

«Excitation Dynamics of Small Molecules Probed with Velocity Map Imaging and Time-Resolved Electron Diffraction»

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Επιβλέπων Καθηγητής: Δημήτριος Παπάζογλου

Τρίτη 13/12/2022

11:00

Η παρουσίαση θα πραγματοποιηθεί στην **αίθουσα Φ2 του Τμήματος Φυσικής** του Πανεπιστημίου Κρήτης.

ABSTRACT

We report work on velocity map imaging (VMI) and photoelectron circular dichroism (PECD) experiments on the excitation dynamics of small molecules as well as the design of a time-resolved electron diffractometer.

In the first part, we explore high energy (9-10 eV) laser excitation of C2H2 which results in generation of $C_2H_2^+$ and C_2H^+, C_2^+, C^+ and H^+ photofragments. We present VMI images and the resulting kinetic energy release and angular distributions of the ion and photoelectrons products. The underlying mechanisms generating those photoproducts are discussed.

In the second part, we report chirality detection of structural isomers in a gas phase mixture using nanosecond photoelectron circular dichroism (PECD). Combining pulsed molecular beams with high-resolution resonance-enhanced multi-photon ionization (REMPI) allows specific isolated transitions belonging to distinct components in the mixture to be targeted.

In the third part, we present the construction, design, and the first characterization experiments of a time-resolved electron diffractometer.