

## Theoretical Ph.D position in Attosecond and Strong-Field Science at UCL

A Ph.D position is available in the research area of Strong-Field and Attosecond Science, in the group of Dr. Agapi Emmanouilidou in the division of AMOPP in Physics and Astronomy at University College London. The student will have the opportunity to work in a lively and highly motivated environment and closely interact with other students and postdocs in the group. Moreover, he/she will have the opportunity to interact with world leading experimental groups since aspects of this theoretical project will be performed in close collaboration and interactions with these groups.

The project is a theoretical one that aims to investigate exciting phenomena that take place during the nonlinear response of multicenter molecules when driven by intense laser fields. Such processes are the formation of highly excited Rydberg states as well as multi-electron ionization. The student will have the opportunity to learn in detail the theoretical aspects of laser matter interactions, to acquire computational skills and use state-of-the-art computational models to perform the above studies. Very importantly, the student will use the above mentioned tools to build analytical models to unravel the physical mechanisms of fundamental processes in the field of laser-matter interactions.

The goals of the project are to explore schemes to control electron-electron correlation in the formation of Rydberg states and in multi-electron ionization. Furthermore, unlike most theoretical studies that adapt the dipole approximation, in these studies the magnetic field aspect of the laser field will be fully accounted for. Very recently, we have identified exciting and surprising effects of the magnetic field in strongly-driven atoms. This project aims to also unravel new magnetic field effects in strongly-driven molecular systems as well as to identify new mechanisms that underlie the interplay of the Coulomb and laser field in strongly-driven molecular systems.

The Ph.D position is available for 3.5 years to UK/EU nationals and is available to start as soon as possible and the latest by October 2019.

Please address all your inquiries to Dr. Agapi Emmanouilidou by e-mail at [a.emmanouilidou@ucl.ac.uk](mailto:a.emmanouilidou@ucl.ac.uk)