LABORATOIRE INTERACTIONS, DYNAMIQUES et LASERS
EMR9000 CEA, CNRS, Université Paris-Saclay

SEMINAIRE INAUGURAL DE LA CHAIRE BLAISE PASCAL

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Chaire d'Excellence Internationale Blaise Pascal, Région Ile-de-France
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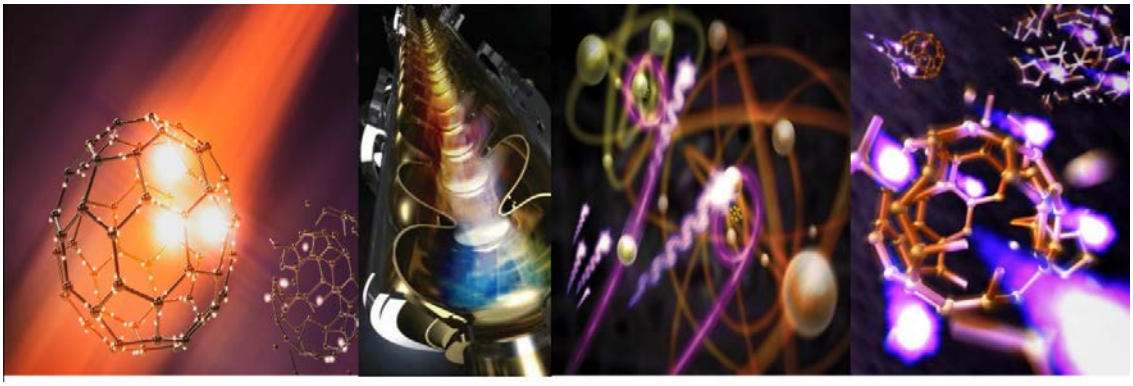
Le Jeudi 19 Mai 2022 à 11h00
Amphi Bloch, CEA-Orme des Merisiers, Bât.772

Photo-Induced Dynamics in Atoms, Molecules, and Clusters using Ultrafast Lasers



The knowledge of the earliest time dynamics in molecular photophysics and photochemistry is critical because their role is to harness the energy from photons, initiating electronic and nuclear motion, which is fundamental in many areas of science. Our aim is to understand the coupled electronic and nuclear dynamics induced by the absorption of photons by molecules, which leads first to attosecond electron excitation within the molecules, followed by nuclear motion in the femtosecond range. This eventually results in the breaking and making of chemical bonds on the femtosecond-to-picosecond timescale. Table-top lasers have advanced fundamental science tremendously and the past twenty years have seen the exciting birth of complementary light sources, the free electron lasers (FELs). The XUV and X-ray FELs around the world are leading to an explosion of new science, in the femtosecond and very recently in the attosecond regime.
I will present several seminars, aimed to the students, starting with a general talk that will introduce the general concepts of FELs. I will also report on experiments that exploit the intensity and the pulse duration of FELs. Recent work include time-resolved experiments that use pump-probe technique to watch, in real time, the response of molecules to intense X-rays as well as to examine the role of physical and chemical effects and how they lead to the timing of bond breaking and bond forming. The ultimate goal is to "make molecular movies". These scientific seminars will alternate with tutoring seminars on Career Building, on Journal Publishing, on Leadership and Career launch and Development.
Seminar 1: Thursday May 19th, 2022 at 11 am. *Introduction to Free Electron Lasers (FELs).*
Seminar 2: Wednesday June 8th, 2022 at 11 am. *Publishing Research Results in Peer Reviewed Journals.*
Seminar 3: Tuesday July 5th, 2022 at 11 am. *Non-Linear Physics with FELs.*
Seminar 4: Tuesday July 19th, 2022 at 11 am. *Career Launch and Development.*
We acknowledge financial support from Région Ile-de-France for the work conducted at LIDYL. The work conducted at UConn and FELs was funded by the US Department of Energy and by the National Science Foundation.

Participer au séminaire par Zoom :
https://cnrs.zoom.us/j/98341440651?pwd=VVJhY01raFpHY0ZCREJCMmJ2SkU4dz09
ID de réunion : 983 4144 0651 Mot de passe: 39WNBc