Laboratoire PPSM – UMR CNRS 8531

Photochimie et Photophysique Supramoléculaires et Macromoléculaires

Séminaire PPSM

Vendredi 29 Août - 11h00

Auditorium D. Chemla - Bâtiment IDA

Professeur Hiroshi FUKUMURA

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Invité par : Robert Pansu

«Table-top femtosecond laser-induced x-ray sources and their application to time-resolved spectroscopy and analytical chemistry»

By focusing femtosecond laser pulses onto a variety of materials, one can obtain micro plasma at the surface of materials due to electron ejection and acceleration under intense laser fields. The electron energy in the micro plasma easily reaches to 50 keV, leading to the emission of hard x-ray. The life time of this kind of plasma is shorter than 1 ps, and thus ultra-short x-ray pulses can be used for time-resolved spectroscopy either as pump or probe pulses. In this lecture, some technical methods to enhance pulsed x-ray intensity and the mechanism involved therein will be discussed. The application of the laser-induced x-ray to elemental analysis as well as to time-resolved spectroscopy such as time-resolved x-ray diffraction of photo-excited states and scintillation dynamics of organic crystals will be presented

References

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