



Giovedì 21 Novembre 2019
alle ore 16.00

presso AULA 1 dell'Edificio F
Area della Ricerca CNR
Via Madonna del Piano, 10 Sesto Fiorentino (Firenze)

la **Dr. Mariangela Di Donato**

Istituto di Chimica dei Composti Organometallici
LENS – Università degli Studi di Firenze

terrà il seguente seminario:

"Ultrafast spectroscopy of molecular photoswitches and
luminescent molecules"

Tutti gli interessati sono invitati a partecipare.

Dr. Francesco Vizza
Direttore ICCOM

Short Abstract:

Ultrafast time resolved spectroscopic techniques are powerful methods to study the excited state dynamics of molecular systems, with high spectral and temporal resolution. After a short introduction on pump-probe and 2D spectroscopic techniques here I will present recent results concerning the photophysics of different classes of molecules, focussing on molecular photoswitches and luminescent chromophores for energy applications.

In case of photoswitches, a crucial step for their optimization in view of practical applications is a clear understanding of their photoswitching mechanism. I will concentrate on two classes of recently developed, visible-light-operated molecular photoswitches, namely Donor-acceptor Stenhouse adducts (DASAs) and Iminothioindoxyls (ITI), showing that ultrafast pump-probe spectroscopies, both in the visible and infrared spectral range, can give important information on the light induced processes occurring in these systems and on the lifetime of photogenerated species.

I will furthermore illustrate how the same spectroscopic tools can be useful in characterizing the photophysics of chromophoric systems where energy and electron transfer take place, which can find application as building blocks for the production of photovoltaic or photoluminescent devices.

Biographic sketch:

Mariangela Di Donato obtained the PhD in Chemistry from the University of Salerno in 2003, under the supervision of prof. Andrea Peluso. In 2005 she moved to the Free University of Amsterdam, where she worked in the group of prof. Rienk van Grondelle. There she applied ultrafast spectroscopy to study energy and electron transfers in proteins, with particular attention to photosynthetic complexes and the Green Fluorescence Protein (GFP). In 2010 she returned to Italy, starting to work at LENS in the group of prof. Roberto Righini and Paolo Foggi. From 2012 to 2017 she was Researcher (RTDA) at the Department of Chemistry, University of Florence. At the end of September 2019 she has been appointed as Researcher at ICCOM-CNR, Sesto Fiorentino (FI).

Her research activity is focussed on the study of light induced energy and electron transfer processes in occurring multichromophoric systems or in artificial photosynthetic devices, and in the characterization of the photophysics of molecular photoswitches. The experimental analysis of these systems is carried on by applying state of the art spectroscopic techniques, such as femtosecond pump-probe spectroscopy and multipulse 2D non-linear spectroscopies both in the IR and visible spectral ranges.

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