



Monday, February 13, 2017, 12:00 pm in Seaver Science Library, Room 150

SSC Auditorium next to the library

## Dr. Spiridoula Matsika

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# Modeling Photophysics and Photochemistry in Biological Molecules

### Abstract:

The interaction of light with biological molecules is very important in a variety of processes, such as vision, photosynthesis, and photochemical damage and repair in DNA. Theoretical studies can help us understand the underlying photophysical or photochemical processes. The fate of molecular systems when they interact with photons is almost always affected by nonadiabatic processes, and a major part of our work is focused on understanding the fundamentals of these processes. We have investigated the importance of nonadiabatic effects in a variety of systems, and particularly biological chromophores. A major component of our research focuses on understanding the photophysical and photochemical properties related to DNA damage. DNA absorbs UV radiation which sometimes may lead to photochemical products and damage. Consequently, understanding the behavior of the electronically excited states is very important. In the talk we will discuss the various processes that occur after absorption of UV radiation in DNA. Some recent work on photolyase, an enzyme that repairs DNA using light, will also be presented.

*The scientific community is invited to attend.*

**USC Department of Chemistry**

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