



The Department of Physics at the University of Cyprus
is organizing a seminar on

Thursday, 30th of November 2017, time 5:00 p.m.

Room B228, Building 13, New Campus

Speaker:

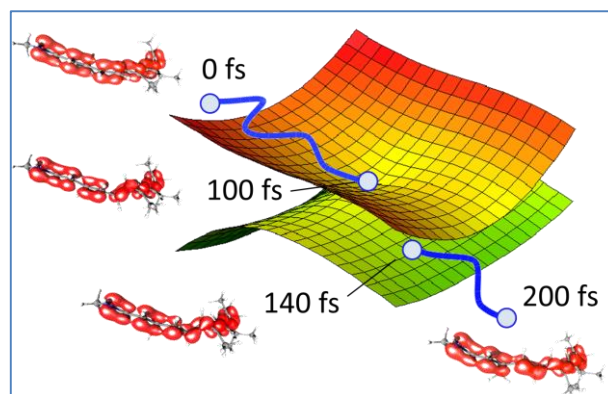
Professor Igor Schapiro
Hebrew University of Jerusalem

The quantum basis of vision:

Understanding molecular switching in the primary event of vision –
Insight from hybrid QM/MM molecular dynamics simulations

The primary event of vision in the vertebrate eye is the highly selective and efficient photoisomerization of 11-cis-retinal protonated Schiff base (RPSB) bound to the visual protein rhodopsin (Rh). With a ~100% selectivity, ~65% quantum yield, and ~200 fs product appearance time, this isomerization is considered the archetype of a photochemical reaction optimized by nature to achieve a specific molecular response.

Recently, we have used a combination of a quantum chemical and a classical force field method (QM/MM) to resolve the isomerization mechanism for the RPSB chromophore in Rh. Important stereoelectronic factors were found that determine the outcome of the photoisomerization. The same protocol was also applied to investigate the photochemical mechanism of the newly discovered Anabaena Sensory Rhodopsin and of a biomimetic molecular switch that works in solution.



For more information, please contact:

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