

Looking vision with the computer Marco Garavelli

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The use of the computer to simulate light induced events in photoactive molecular materials has given access to a detailed description of the molecular motions and mechanisms underlying the reactivity of these systems. Different computational strategies and tools can now be operated like a "virtual spectrometer" allowing for an accurate description of these processes and a rational of the corresponding spectroscopies that can be now recorded "on silico".

The paradigmatic case of vision will be presented as a test case to show how these computational tools can be employed to "decode" a complex process in a complex

environment that is also actively involved, eventually delivering an accurate "molecular movie" of the primary visual event [1,2].

The information collected by these studies can be exploited for understanding visual diseases as well as for the design of novel and "smart" materials to be employed in a new generation of devices (e.g., color tunable displays and e-ink devices, optical memories, biological probes, etc).

- [1] D. Polli, et al. Marco.
- [2] O. Weingart, et al. PCCP 13 (2011) 3645.