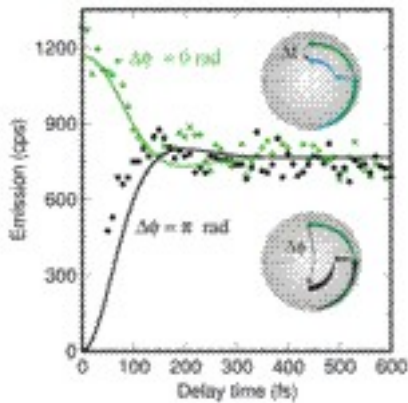


New advances on ultrafast quantum control of single molecules in the group led by Prof. Niek van Hulst.**Quantum control of single molecules at room**

temperature. In the initial ultrafast steps of photosynthesis nature exploits quantum mechanical phenomena, such as electronic coherences and entanglement, to achieve remarkably efficient excitation energy transfer and charge separation. But the intrinsic heterogeneity of biomolecules renders the investigation of these dynamic processes difficult by conventional ensemble approaches, and ultrafast single-molecule techniques have not been available until no

In this paper, the authors demonstrate that femtosecond electronic coherences in single organic molecules can be established, probed, and controlled in disordered, non-crystalline environments under ambient conditions typical in biologically relevant systems. The results have been published in Nature Physics by ICFO researchers Dr. Richard Hildner, PhD student Daan Brinks and ICREA Prof. Niek van Hulst. These new techniques are currently being applied to photosynthetic light-harvesting complexes.