

**ULTRAFAST CHARGE INJECTION AT COMPLEX INTERFACES: ORGANIC-ORGANIC,
ORGANIC-INORGANIC AND ORGANIC-GRAPHENE**

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Organic materials (OM) are currently widely used in Organic LED and there is a strong drive to develop other devices based on these materials like organic photovoltaic cells, organic based electronics and sensors. Advantages in using organic materials in these applications stem from the possibility to easily chemically modify the materials to add specific functionalities, the overall lower cost of processing, the reduced environmental impact of fabrication and the mechanical flexibility. Recently the coupling of OM with the newly discovered 2D materials like graphene, BN, MoS₂ etc has extended even further the field of possible applications for example in the realization of flexible, wearable devices and sensors. In systems and devices based on ethero-structures formed by combining various types of these functional materials, interfaces obviously play a major role. A much deeper understanding of the fundamental mechanisms that control interface processes and characteristics like charge transfer and electronic level alignment, is required to improve the efficiency, reliability and extend the capabilities of the devices based on these complex materials. Experimental methods available at large scale facilities like synchrotron radiation sources can be of great impact for the advancement of science and technology in this research field. The experimental techniques available at these centers can specifically tackle scientific issues related to electronic level alignment and charge transfer processes by giving a detailed picture of the electronic structure of the interfaces. Thanks to recent technical developments they also allow to study the dynamic of electronic processes down to the femtosecond time scale opening up the exciting possibility to study quantum processes at their characteristic time scale.