

**Institute for Advanced Studies
Université de Cergy-Pontoise**

Visiting fellow presentation

Dr. Veaceslav Coropceanu is Principal Research Scientist in the School of Chemistry and Biochemistry at the Georgia Institute of Technology. Until 1997 he held an Associate Professor position at the State University of Moldova. After research stays at the University of Sussex, United Kingdom on a NATO/Royal Society Fellowship and at the Medical University of Lübeck, Germany on an Alexander von Humboldt Fellowship, he moved in 2000 to the University of Arizona and then in 2003 to the Georgia Institute of Technology. His research interests revolve around theoretical studies of the electronic and optical properties of organic and inorganic systems, including energy- and electron-transfer phenomena, with an emphasis on polaronic effects.

Research Project- Organic solar cells are attracting significant interest due to a number of valuable features such as low cost, low-environmental impact, flexibility and large-area manufacturing capability. Although, organic solar cells currently reached power conversion efficiencies up to 13%, these values remain substantially lower than those in silicon or perovskite solar cells. In order to develop new organic photovoltaic materials with improved efficiency, an in-depth understanding of the fundamental mechanisms that define device performance must be reached. A fundamental issue under much debate in the organic photovoltaic literature relates to the role of excitonic and charge-transfer triplet states. In this project we aim to develop a computational approach capable of providing reliable splitting energies and intrinsic lifetimes of the singlet and triplet charge-transfer states in organic photovoltaic materials. We will also investigate the impact of excitonic and charge-transfer triplet states on the geminate and non-geminate recombination processes.

Details of upcoming events you will organize during your stay at the IAS

(Provide relevant details including practical information and URL when available).

Seminars : Impact of static and dynamic disorder on electronic processes in organic materials