

# Higher Education

DIPC School

## **Computation of Electronic Excited States: molecules, aggregates, nanoclusters, nanoparticles, polymers and solids**

September 1-4, 2015

Miramar Palace, Donostia/San Sebastián, Spain

<http://cees.dipc.org/>

Organizers

David Casanova (DIPC, Ikerbasque)

Xabier Lopez (UPV/EHU, DIPC)

Jon Mattin Matxain (UPV/EHU, DIPC)

Mario Piris (UPV/EHU, Ikerbasque)

Fernando Ruiperez (Polymat, UPV/EHU)

Jesus Ugalde (UPV/EHU, DIPC)

*The Computation of Electronic Excited States: molecules, aggregates, nanoclusters, nanoparticles, polymers and solids* international summer school aims to introduce, describe and discuss the theory and applications of computational methods and tools for the study of the electronic structure of excited states in a variety of physical systems: molecules, molecular aggregates, complex systems, nanoclusters and nanoparticles, polymers and solids. The school was taught at the postgraduate level and was especially addressed to PhD students and postdoctoral researchers with a solid background in electronic structure theory and its application within the quantum chemistry and/or physics fields.

The course was divided in two related parts. The first focused on the description of the most relevant and commonly used quantum models for the computational study of electronic transitions. The second part was devoted to the application of the presented methodologies, with specific sessions for different types of systems.

The subjects covered in the school were:

- Electronic structure methods for the study of electronic transitions
- Excited states in molecules
- Excited states in complex systems
- Excited states in extended systems

#### Invited Speakers

Carlo Adamo (ENSCP-Chimie Paristech, France)

Coen de Graaf (Universitat Rovira i Virgili, Spain)

Andreas Dreuw (University of Heidelberg, Germany)

Johannes Gierschner (IMDEA Nanoscience, Spain)

Anna Krylov (University of Southern California, US)

Stefan Kurth (UPV/EHU, Spain)

Roland Lindh (Uppsala University, Sweden)

Oleg Prezhdo (University of Rochester, US)

Daniel Sanchez-Portal (UPV/EHU and DIPC, Spain)

Carsten A. Ullrich (University of Missouri, US)

Valérie Vallet (CNRS and Universite de Lille, France)

Martijn Zwijnenburg (University College London, UK)



## Theses

Theory and simulation of the optical response of novel nanomaterials from visible to terahertz

**Mohamed Ameen Poyli**

July 2015

Supervisors: Javier Aizpurua and Rubén Esteban

Spectroscopic analysis of atoms and molecules

**Alison Crawford Uranga**

September 2015

Supervisors: Stefan Kurth and Angel Rubio

## Master's Degree Program

### UPV/EHU Research Master's in Nanoscience

DIPC collaborates in the official postgraduate program in nanoscience organized by the Materials Physics Department of the University of the Basque Country (UPV/EHU) and the Center of Materials Physics (CSIC-UPV/EHU) "Master's in Nanoscience".

The Research Master's in Nanoscience has been offered since 2007. More than eighty students have obtained their Master's degree. Almost 50% of our graduates are international students from four continents (Europe, America, Africa and Asia).

Researchers at DIPC participate in this program in various ways and from different perspectives by developing curriculums, giving lectures, acting as counselors to some of the students, and providing seminars on issues of special interest to the students.

In addition, DIPC plays a valuable role, providing essential infrastructure and funding, within its means, to help ensure the proper development of the program.