

## **Electronic States and Phases Induced by Electric or Optical Impacts.**

University Paris Sud at Orsay, France

10-14 September 2012

### **IMPACT 2012**

Recent years witness an emergence and a very fast development of a new activity in condensed matter physics. The goal is a controlled transformation of electronic states or even of whole phases by external impacts. There are two main directions: the electrostatic effects of very strong electric fields and the supercritical optical pumping; the latest trend is to employ them in combination.

These efforts originated a complex broad science which includes the femto-second time scale of the nonlinear optics, the time resolved photoemission and X-ray diffraction, physics at surfaces and monolayers, nano-fabrications by the molecular beam epitaxy and by the focused ion beams, manipulations by ferroelectrics and electrolytes; complex materials from cuprates, conducting oxides and pnictides, to organic conductors and conjugated polymers.

Being as young as from 2000's, the studies demonstrated an explosive development during last two years. It is particularly important to reach a synergy and cross-fertilization between the branches of the new science which still lack an acquaintance - with respect to the two major techniques, but also on different classes of materials.

There is an urgent need for a synergetic conference, which may originate future sequential events. We are planning to organize such a meeting as a five days workshop for about 100 participants, including students, attracting most major players of this science from over the world.

The event will take place during the second week (10-14) of September 2012, based at the University Paris Sud at Orsay, close to Paris. Together with nearby institutions like the Saclay center of the CEA, Ecole Polytechnique, the synchrotron SOLEIL, the Optical Valley institutes, and the center for photonics and nano-science, this area accumulates much of expertise and already running activity related to our project.

Sponsorship is already provided by the ICAM and from local sources.

#### **Organizers:**

Serguei Brazovskii and Natasha Kirova – CNRS & University Paris Sud, Orsay, France;  
Luca Perfetti – Ecole Polytechnique, Palaiseau, France  
Victor Yakovenko – University of Maryland, USA

More and updating information can be found at the temporary web page

<http://lptms.u-psud.fr/membres/brazov/IMPACT2012.html>