

# **MONABIPHOT - Molecular nano- and bio-photonics for telecommunications and biotechnologies**

2006-0056 / Duration: 2 years

## **Summary description:**

The Monabiphot Master Course offers an original qualification in the highly innovative domain of molecular photonics for telecommunications and biology, with a strong multidisciplinary approach. The European partner Institutions are: Ecole Normale Supérieure de Cachan – Cachan, France (coordinator); Universidad Complutense, Madrid, Spain; University of Wroclaw, Poland; Wroclaw University of Technology (WUT), Poland. In order to ensure a really multidisciplinary training encompassing Physics, Chemistry and Biology, students have to acquire at least 20 ECTS in each discipline. The European Master course delivers a multiple degree.

In the present project, a two- year partnership agreement is proposed with five third country institutions: Technion Institute, Haifa, Israel; Australian National University, Camberra, Australia ; Rice University, Houston, USA; Al Akhawayn University, Ifrane, Morocco; National Taiwan University, Taipeh, Taiwan. The partnership has the following objectives: to develop a pedagogical cooperation and to stimulate teaching and research exchanges between key European Institutions in Molecular Photonics and high-standard third country partners; to share an original pluridisciplinary educational experience ; to organize a long-standing international collaboration in teaching and research among partner institutions, beyond the duration of the present project ; to enhance the international visibility of European Universities.

An outgoing mobility of 10 European students is foreseen per year. Outgoing students will either take courses opened to them by third-country host Institutions (generally during the third semester) on topics similar to those taught in the Monabiphot Master Course in Europe, and earn a defined number of credits in this context, or take part in a research project proposed by one of the laboratories of the host Institution ; this research work, defined in close interaction with the European Monabiphot partners, will correspond, partly or fully (depending on the time spent in the third - country Institution), to their Microthesis, and will be organized during the fourth semester. European students will also attend local seminars related to their Master thesis subject. Credits acquired in each of these two mobility schemes are fully recognised by the Monabiphot Master Course and will replace those that would have been earned in the same period in Europe.

Scholar mobility (3 per year) will be related to common research programs between the European and third-country Institutions, and to tutoring the European students present in the host Institution of the Scholar in the same period. Other mobility activities are foreseen in terms of research seminars, development of common research projects, and the organization of conferences, workshops or Summer schools.

Selection criteria for students are scientific excellence, motivation, language ability and letters of recommendation. Scholars are selected by the general management committee of the consortium on the basis of their involvement in teaching activities in the Monabiphot Master Course and research collaboration projects.

The language of instruction and work in all partnerships will be English.

Contact: Prof. Isabelle LEDOUX,  
ENS Cachan 61 avenue du president Wilson 94230 Cachan – France.  
e-mail : ledoux@lpqm.ens-cachan.fr  
Web site : [www.ens-cachan.fr/monabiphot](http://www.ens-cachan.fr/monabiphot) or [www.monabiphot.eu](http://www.monabiphot.eu)

## **European Partners:**

- (1) Ecole Normale Supérieure de Cachan (FR)
- (2) Universidad Complutense De Madrid (ES)
- (3) Politechnika Wroclawska (PL)
- (4) Uniwersytet Wroclawski (PL)

## **Third-Countries Partner Institutions:**

- (1) Russell Berrie Nanotechnology Institute, Technion-Israel Institute of Technology (Israel)
- (2) Laser Physics Centre, The Australian National University (Australia)
- (3) Laboratory For Nanophotonics, William Marsh Rice University (US)
- (4) Al Akhawayn University In Ifrane (Morocco)
- (5) National Taiwan University (Taiwan)

**Contact:**

Prof. Isabelle LEDOUX-RAK  
[www.ens-cachan.fr/monabiphot/](http://www.ens-cachan.fr/monabiphot/) or [www.monabiphot.eu](http://www.monabiphot.eu)  
Ecole Normale Supérieure de Cachan  
61 avenue du Président Wilson  
FR-94235 Cachan

**Grant:** 170.00 € (30.000 € partnership + 140.000 € scholarships)