



SIXTH FRAMEWORK PROGRAMME

## **Mexican, Spanish and Swiss researchers study movement of light in materials**

Dr Luis Fernando Rojas-Ochoa, of the Physics Department of CINVESTAV in Mexico City, Mexico visited the Autonomous University of Madrid UAM in Madrid, Spain, for three months in spring of 2008.

What have you worked on during your visit?

I have participated in a joint collaboration between the Universidad Autónoma de Madrid (Spain) and the Center for Nano Materials from the University of Fribourg (Switzerland). The topic of research was: "Experimental study of the temporal response of random photonic materials".

Why is that important for your research and for progress in nanotechnology?

One of the main topics of my current research is related to the study of how light propagates in photonic materials, whose building blocks are at the nanometre scale. We hope our research during this period will help to improve the understanding of how photonic materials could be used for future scientific and technological applications.

Why did you come to this European research centre to do this project?

My main motivation was that there already exists a fruitful collaboration with members of the host institution in Spain. We have identified immediately this grant as an opportunity to improve our on-going collaboration by getting people involved to work in the same environment for a short period.

What are the results? How will you disseminate them?

Our main results relate to the study of how light propagates through random photonic materials. We have performed measurements, and started mathematical modelling of statistical properties of light scattered from photonic assemblies (speckle intensity frequency correlations). The assemblies have been prepared in the framework of our collaboration with the UniFr in Switzerland. Also, we have briefly explored the possibility of using our research protocols for biophotonics applications by exploring the optical properties of biological tissue. As a first step for the dissemination of this work, I'm currently preparing a technical paper for future publication in a specialized journal.

Is this the first contact between both organizations or is your visit part of existing collaboration?

Considering the natural affinity between Spanish and Latin American Institutions, I would be surprised that my participation would be the first between both institutions but it surely represent the first involving this three institutions: Cinvestav (Mexico), UAM (Spain) and UniFr (Switzerland).

What are the plans for future collaboration?

My visit was a continuation of an existing collaboration between these three institutions, a collaboration that we have the firm intention to preserve for the time to come.

Do you intend to apply for funding in the EU 7<sup>th</sup> Framework Programme for RTD?

I did not know about this possibility but I'll surely check the basis for a possible participation.

How may your project in the long term benefit the development of your country or Latin America in general?

The topic of my research visit has not been considered as a high-priority one in my country. Surely I could help in developing the interest for nano-bio-photonics in my country, which I consider of primordial interest if we pursue for a technological independence.

What are your plans for disseminating the results of your visit outside the research community in your country?

The first step would be to prepare a scientific paper, at least, which summarizes the main results of my visit and it would be published in a specialized journal. Second, after or during the preparation of the paper, I have the intention to disseminate this work in our scientific community. Another step would be to prepare a divulgation paper to be disseminated in our institutional newspapers of CINVESTAV and, finally, I would like to prepare an article of general interest for a non-specialized newspaper.

**Identification:**

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**About NANOFORUMEULA**

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finding missions in Mexico (held in August 2007) and Brazil (4-13 September 2008) enabling European researchers and industrialists to identify opportunities for establishing working relations.

Check our website for updates: [www.nanoforumeula.eu](http://www.nanoforumeula.eu)  
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