



National Center for Scientific Research (CNRS)
Institute of Molecular Sciences of Orsay (ISMO)
Université Paris-Sud, Orsay, France

<http://www.cnrs.fr>
<http://www.ismo.u-psud.fr>
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EXPERIENCED RESEARCHER (Post doctoral position)

“Cage” nanoparticles for antimicrobial applications

Funded by the EU Marie Curie Network *CycloN-Hit* project # 608407 (FP7-PEOPLE-2013)

<http://itn-cyclonhit.eu>

STARTING DATE: September 1st, 2015 or according to agreement
DURATION: 24 months
APPLICATION DEADLINE: June 1st, 2015

BENEFITS: The successful candidate will enjoy a full employment contract with a very competitive salary (>60000 €/year). She/he will work in the University Paris-Sud (<http://www.u-psud.fr/en/index.html>) the largest Research Center in the Paris region, participate at summer schools and workshops organized by the *CycloN-Hit* consortium, and benefit from collaboration opportunities with outstanding institutions and companies in Europe and the US.

REQUIREMENTS: PhD (doctorate) degree obtained in 2013 - 2015 (or corresponding to ≤5 years research experience from MSc degree, at the time of hiring) in Nanotechnology, Pharmaceutical Sciences, Chemistry, or related fields. Applicants should be preferably European Citizens (from EU Member States or Associated Countries), but candidates from Third Countries are eligible also. The applicants must not have resided or carried out their main activity (work, studies, etc) in France for more than 12 months in the 3 years immediately prior to recruitment. For more details concerning recruitment rules, please see: http://ec.europa.eu/research/mariecurieactions/index_en.htm.

The ideal candidate will be a highly motivated person with a passion for research and a strong interdisciplinary background. She/he must demonstrate deep understanding, competence and success in previous research, as well as evidence of independent intellectual contribution to research projects. She/he should be able to communicate well in English (written and oral) both to scientific and non-scientific audiences.

DESCRIPTION OF WORK: The recruited Marie Curie fellow will carry out research in the field of nanomedicine. In collaboration with chemists, “cage” nanoparticles able to co-encapsulate synergic combinations of antibiotics will be prepared. It is expected that the peculiar structure of the nanoparticles, comprising interconnected “cages” with well defined sizes and both lipophilic and hydrophilic character will favor strong interactions with the drugs, thus ensuring an efficient encapsulation and a controlled release.

The drug-loaded nanoparticles will be comprehensively characterized by modern techniques available at Paris-Sud University, involving microscopic investigations, as well as size distribution, concentration, surface charge/composition and stability studies. Release will be studied in various media, mainly by HPLC. Finally, in collaboration with microbiologists, the interaction of the drug-loaded nanoparticles with infected cells will be studied. The surface of the nanoparticles will be modified to boost their interaction with cells. Optimized formulations will be considered for *in vivo* evaluation at Pasteur Institute.

In a nutshell, the recruited fellow will be engaged in a multidisciplinary approach involving numerous collaborations. The candidate should be able to:

- Define and adapt scientific protocols and experimental techniques to the research topic
- Undertake comprehensive literature reviews and publish the results in peer-reviewed high level journals in the field
- Present the research work in regular reports, biannual project meetings of **CycloN-Hit** and international conferences
- Fully follow the training program of **CycloN-Hit** (summer schools, workshops, e-classes, etc)
- Travel to collaborating laboratories for short secondments for the benefit of the project
- Carry out collaborative projects with colleagues in **CycloN-Hit** and other laboratories
- Help sharing responsibilities to keep the laboratory running efficiently.

HOW TO APPLY: Sent by email to Dr. R. Gref

ruxandra.gref@u-psud.fr

- 1) a detailed CV, illustrating the candidate's educational background, the list of publications, contributions to conferences, seminars and any other information that is believed appropriate to demonstrate the required skills;
- 2) at least one recommendation letter and contact information of two referees
- 3) a motivation letter for the proposed topic.

The applicants should be prepared to participate in an interview *via* Skype.