



## Post-doctoral position (18 months)

INFORMATION	
<b>Exact heading of the position</b>	Medical Devices Imaging through Polymers-Inorganic Nanoparticles Hybrids
<b>Dates of contract</b>	01/02/2018 – 31/07/2019
<b>Field of research</b>	Hybrid biomaterials
<b>Program</b>	Funded by LabEx CheMISyst of the Montpellier University
<b>Agreement number</b>	ANR-10-LABX-05-01
<b>Duration for publication</b>	15 <sup>th</sup> January 2018
<b>How to apply? (Mail? Contact person)</b>	Contact Dr. Benjamin Nottelet : benjamin.nottelet@umontpellier.fr

### Detailed job profile

#### Post-doctoral position at University Montpellier “Medical Devices Imaging through Polymers-Inorganic Nanoparticles Hybrids”

<i>Administrative Location</i>	<i>Montpellier, France</i>
<i>Research locations</i>	<i>Institut des Biomolécules Max Mousseron (IBMM, UMR 5247) &amp; Institut Charles Gerhardt Montpellier (ICGM, UMR 5253)</i>
<i>Project supervisors</i>	<i>Dr. Benjamin Nottelet &amp; Dr. Yannick Guari</i>

#### Project :

This project is at the interface between the Department of Artificial Biopolymers of IBMM (dedicated to degradable polymers for health) and the Molecular Engineering and Nano-Objects team of ICGM (dedicated to Inorganic nanomaterials for health). It focuses on the development of **novel hybrid biomaterials for medical implants and scaffolds, such as multimodal imaging and magneto scaffolds**. For this purpose, the objective will be to functionalize **polymer surfaces** via the covalent attachment of **inorganic nanoparticles** (NPs) exhibiting imaging, magnetic and/or osteointegration properties (e.g. superparamagnetic iron-oxide NPs or doped hydroxyapatite NPs). The biodegradable and/or biocompatible polymers will first need to be functionalized to ensure the efficient surface grafting of these NPs. Imaging and osteointegration properties will be evaluated *in vitro* and *in vivo*.

#### Program :

The recruited post-doctoral fellow will be involved in the design, synthesis and characterization of the hybrid biomaterials. She/he will be in charge of (i) the chemical modification of the degradable polymers, (ii) the preparation of the NPs and the optimization of their ligation to the polymer, and (iii) the evaluation of the structure and properties of the hybrid interface. She/he will also have to test the biocompatibility and the properties of the hybrid scaffolds using *in vitro* and *in vivo* models.

#### Profile & contact :

Due to the multidisciplinary nature of the project, the post-doctoral fellow should have a strong background in **synthetic chemistry** and experience in the field of **biomaterials** (organic or inorganic). In addition, she/he should have skills in characterization techniques both on a physico-chemical level and on a cell-material interaction level. For this reason, she/he should have received her/his PhD in the field of polymers, inorganic nanoparticles or biomaterials for biomedical applications. An **excellent** level of **English** is mandatory. French language knowledge is a plus but not mandatory. Applicants should contact Dr. B. Nottelet via email ([benjamin.nottelet@umontpellier.fr](mailto:benjamin.nottelet@umontpellier.fr)) and provide detailed CV, a motivation letter, as well as the contact details of at least two referees.