

Université Claude Bernard Lyon 1- Hosting offer for a MSCA Post-doctoral fellowship candidate in the field of **dental tissue regeneration and medical devices**

Host Organisation	Université Claude Bernard Lyon 1
Department	Biomaterials
Laboratory	LMI UMR 5615
Website (lab / research team)	https://lmi.cnrs.fr/
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Host Organisation

The Université Claude Bernard Lyon 1 welcomes Marie Sklodowska Curie Postdoctoral Fellowships applications!

With 62 laboratories and more than 7000 publications per year, and leading French university in terms of the number of patents filed in collaboration with industry, Lyon 1 contributes to scientific and innovation progress in numerous fields: health, mathematics, IT, physics, chemistry, earth and space sciences, life sciences, etc. Creator of emerging knowledge and new technologies, the University is consolidating its research excellence on a global and international level by developing inter- and multidisciplinary approaches targeting the major challenges facing today society.

Host research lab/team

The Laboratory of Multi-materials and Interfaces UMR 561 (LMI) is a leading European research laboratory specializing in the development of materials and their wide-ranging applications, from electrochemistry to medical technologies. LMI is dedicated to the Chemical Architecture and Engineering of Molecules and Materials and comprises five research teams. Its main objective is to design and demonstrate the feasibility of new molecules and materials, including biomaterials.

The research activities of the **BIOMATERIALS team (BIO)** focus on dental materials, including dental implants, from their development and characterization to their biological assessment through in vitro, in vivo, and clinical investigations. Within the framework of the project, the LMI team will be involved in the development of preclinical protocols aimed at reproducing and predicting clinical situations following implant placement in the oral environment. The main objective will be to assess the biological behaviour of newly elaborated coating based on electro spun based scaffold. Two members of the LMI-BIO will be involved in this project: Nina Attik for her expertise in the medical devices biological evaluation including soft/hard tissues - implant interfaces, and Arnaud Lafon, for his clinical expertise as a specialist in dental implantology practice and minimally invasive procedures.

A second research team from LMI, the **“Matériaux à Basse Dimensionnalité” (MBD) team**, will also be involved in this project through the expertise of **Vincent Salles** in the electrospinning of resorbable scaffolds for tissue regeneration. Moreover, a second laboratory will be involved in this project: **MATEIS (UMR CNRS 5510)**, through the contribution of **Rémy Gauthier**, whose expertise in biomechanics and bone regeneration will be highly valuable.

Hosting Offer

The **LMI lab** offers to host a MSCA Postdoctoral Fellowship candidate (typically a post-doc of less than 8 years research experience since PhD defence), applying to the next MSCA-2026-PF call for proposals (deadline 09th of September 2026), interested to work on the following research topic:

Dental implants, Minimally invasive dentistry, Peri-implant tissue regeneration, Bioactive & natural based scaffolds

“Silk Fibroin-Based Scaffolds for Peri-Implant Tissue Regeneration”

The project aims to develop and optimize silk fibroin (SF)-based scaffolds for peri-implant tissue regeneration by establishing a sustainable extraction method, controlling physicochemical properties, and evaluating biological performance. An alternative extraction protocol using Ajisawa’s reagent will be implemented to reduce cytotoxic residues, followed by detailed characterization of SF solutions (SEM, FTIR, rheology) to define optimal processing conditions. Scaffold fabrication will focus on correlating solution properties with electrospinning printability and mechanical performance. The biological behaviour will be assessed using human gingival fibroblasts and osteoblast-like cells, including co-culture models to mimic the peri-implant environment, with evaluation of cytocompatibility, proliferation, osteogenic differentiation, and inflammatory response.

The host team offers:

- Access to advanced biomaterials characterization platforms (SEM, FTIR, rheology).
- Expertise in scaffold elaboration techniques, including electrospinning/electrowriting.
- State-of-the-art cell culture facilities for mono- and co-culture models relevant to peri-implant tissues.
- Training in biomaterial design, *in vitro* biological assessment, biomechanics and data analysis in regenerative dentistry.

The fellowship could last for 12 to 36 months, depending on the type of Postdoctoral Fellowship.

Supervision

The successful Marie-Curie Post-doctoral fellow will be supervised by **Dr. Nina Attik**. Her research interests include the development and biological evaluation of various medical devices (MDs). The developed MDs range from restorative materials and periodontal tissue regeneration scaffolds to minimally invasive dental implants. Her main research objective is to develop bioactive biomaterials that preserve natural patient tissues as much as possible while enhancing patient comfort.

Application process

Interested candidates are invited to contact us exclusively by email at nina.attik@univ-lyon1.fr

Make sure that you include the reference to this offer in the title of your email. Please attach a CV, a motivation letter, your MSc marks, **as well as a 1-page research proposal**.

Professional grant application support:

Candidates will receive the support of the supervisors, as well as online training from a professional grant application company, and advices from successful applicants, to prepare and submit their application with the LMI as a host laboratory, to the next MSCA-PF call for proposals.