Postdoctoral Researcher Position – Win4SpinOff Project

Ph.D. in Organic Chemistry / Supramolecular Chemistry / Materials Science

We are seeking a **highly motivated and entrepreneurial-minded Postdoctoral Researcher** to apply for a **Win4SpinOff project** (https://recherche.wallonie.be/win4spinoff) for **Université de Namur**. The candidate will be involved in a cutting-edge scientific project which aims to develop UNamur patented technology and to evaluate its potential for innovation and commercial development. This position offers a unique opportunity to **combine high-level academic research with technology transfer and entrepreneurship,** with the ultimate goal of preparing the creation of a spin-off company.

The **DYNACOAT project** builds on groundbreaking research in **supramolecular chemistry** and **antimicrobial/antibiofilm materials**. The global rise in antibiotic resistance has created an urgent need for new antimicrobial strategies. Our technology leverages dynamic chemistry to create **adaptive, self-assembled molecular frameworks with tunable antimicrobial properties**.

The project is expected to **start between March and September 2026 for 2 years** (one-year prolongation possible). At the end of the project, if the spin-off creation is confirmed, the candidate may be offered a position in the company.

Key Responsibilities

- **Lead Synthesis & Optimization:** Spearhead the multi-step synthesis and optimization of our core technologies: **Dynamic Constitutional Frameworks (DCFs)** and **pillararene-based drug delivery systems**.
- **Material Characterization:** Conduct comprehensive characterization of novel materials, evaluating their chemical structure, adhesion, stability, and self-repair properties using techniques like NMR, HPLC-MS, and surface analysis.
- **Biological Evaluation:** In collaboration with microbiology laboratories, design, manage, and execute a robust program of biological testing. This includes conducting antimicrobial and anti-biofilm efficacy tests against a range of pathogenic bacteria, including highly resistant strains like *Acinetobacter baumannii* and *Pseudomonas aeruginosa*.
- **Toxicology & Safety Assessment:** Manage the collaborative biological *in vitro* and *in vivo* cytotoxicity and toxicology studies to ensure the biocompatibility and safety of our materials for various applications.
- **Prototype Development:** Drive the project from the current research stage (TRL 3-4) to a validated, pre-industrial prototype (TRL 5-6), ensuring the results are reliable, scalable, and transferable.

- **Collaboration & Project Management:** Work in close collaboration with our academic partners (UNamur, VIB, UGent) and expert advisors. You will manage project timelines, resources, and deliverables across different work packages.
- **Intellectual Property:** Actively contribute to the project's IP strategy, including documenting inventions and contributing to new patent applications.

Required:

- A **Ph.D. in Organic Chemistry / Supramolecular Chemistry / Materials Science, or a related field**.
- Demonstrated hands-on expertise in **multi-step organic synthesis** and purification of complex molecules.
- A strong theoretical and practical understanding of **supramolecular chemistry**, particularly dynamic covalent/constitutional chemistry and host-guest systems.
- Proven experience with a wide range of analytical and characterization techniques, including **NMR, HPLC-MS, FPLC, IR, and fluorescence spectroscopy**.

Highly Desired:

- Practical experience in **microbiology**, specifically with **antimicrobial and anti-biofilm assays** and handling bacterial cultures.
- Knowledge of **polymer chemistry** and experience with the development and characterization of **surface coatings or hydrogels**.
- Familiarity with *in vitro* **cytotoxicity assays** and an understanding of the requirements for preclinical toxicology studies.
- Experience working on projects that bridge academic research and industrial application (experience with Technology Readiness Levels is a plus).

How to Express Interest:

Interested candidates are encouraged to send **A CV and a cover letter** outlining their interest and relevant experience to eleana.somville@unamur.be and joel.marinozzi@unamur.be before October 20. Applications will be processed as they arrive, do not hesitate to apply early or to contact us for further information about the position.