

Postdoctoral Position: Mechanics of Biological Systems in Health and Disease

We invite applications for a postdoctoral research position focused on the mechanical characterization of biological systems in health and disease, combining atomic force microscopy (AFM) and confocal/STED microscopy. The project aims to define the relationships between mechanical properties, molecular composition, and structural organization, and to assess their alteration by pathological processes across biological scales.

The position is available in the team of **Dr. Andra C. Dumitru** at LIBST-UCLouvain, within a highly interdisciplinary research environment with access to state-of-the-art instrumentation for nanomechanical probing of soft matter and correlative imaging.

Job description

You will work at the interface of biophysics and mechanobiology, developing and applying innovative approaches to characterize mechanical phenotypes across scales. Research directions may include:

- Quantitative mechanical measurements of single molecules, cells, nuclei, and tissues
- correlative AFM–confocal approaches
- Investigation of structure–mechanics relationships, including the role of post-translational modifications (i.e. glycation, acetylation)
- Mechanical phenotyping in physiological and disease contexts (cardiovascular disease, diabetes, neurodegenerative diseases)
- Development of new experimental or analytical pipelines for multiscale mechanical analysis

The project is intentionally open and offers substantial freedom to shape research directions based on the candidate's expertise and interests, while remaining aligned with the group's core focus on mechanics and disease.

Profile

We are looking for a candidate who has:

- A PhD in Physics, Chemistry, Biophysics, or a closely related field
- Experience with atomic force microscopy or related scanning probe techniques
- Background or strong interest in single-molecule, cell, or tissue mechanics
- Ability to work independently as well as collaboratively within a research team
- Strong scientific communication skills in spoken and written English

We offer

- A fully funded postdoctoral position for 1 year, with possibility of extension
- Access to state-of-the-art AFM and advanced imaging platforms
- An interdisciplinary and collaborative research environment
- Opportunities for scientific independence, method development, and career development

Application

Interested candidates should submit the following to Dr. Andra C. Dumitru by [email](#).

- A **curriculum vitae (CV)**
- A **brief statement of research interests and motivation**
- **Contact information for 2–3 referees** willing to provide letters of recommendation

