

## CONTRACTUAL LECTURER-RESEARCHER BIOMEDICAL ENGINEERING - QUALITY - REGULATORY AFFAIRS

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Université de Technologie de Compiègne (UTC) is recruiting a contractual lecturer-researcher in Biomedical engineering, Quality management and Regulatory affairs at its Department of Biological Engineering – Biomechanics and Bioengineering Laboratory (UMR CNRS 7338).

### Place of work

Compiègne

### Type of contract

3-years fixed-term contract, renewable, scheduled to start in early September 2022

### Activities

#### *Teaching:*

The successful applicant will join the Department's teaching team.

Their teaching will concern the life cycle of medical devices, especially in relation to processes of innovation, normative requirements for regulatory compliance, market access, and usage. This is an area of biomedical expertise that is increasingly in demand by the manufacturers of devices and in health facilities, and teaching in the Department has to reflect the changing needs of the sector. An interest in sustainability aspects of medical devices would be appreciated.

Most of the teaching will be for the master's in Health Engineering. The successful applicant will give lectures and run tutorials and practical sessions on quality, focusing on medical devices from the perspective of both manufacturers and healthcare providers. They will also take charge of teaching regulatory aspects (in France and beyond), associated processes, and methods of audit. Depending on their specialist knowledge, they might also extend course content to digital security in connected medical devices.

The successful applicant will participate actively in the supervision and development of tutored projects in collaboration either with the biomedical industry or with healthcare providers, using UTC's Moodle and WordPress software platforms (respectively for managing and monitoring projects, and for publishing project reports and associated articles). They will also be involved in supervising interns and in specific events such as UTC's [Biomedical Rendezvous](#).

Over time the successful applicant's involvement in the life of the Department will grow, as they take on responsibility for courses and contribute to the continuous improvement of the master's in Health Engineering and the Biological Engineering curriculum generally. They will also implement courses taught through the medium of English, in particular for the DMAR track (medical devices and regulatory affairs).

#### *Research:*

The successful applicant will join the BMBI laboratory to develop activities relating to Technology for Health, as well as to pre-normative research and follow-up of standards/regulatory issues concerning CE marking of innovations developed in the lab that may potentially be transferred to existing companies or spin-offs.

They will become involved in projects in collaboration with companies and hospitals in France and internationally. There are no stipulations regarding specific skills, but applicants will be expected to demonstrate knowledge of the life cycle of medical devices (R&D, manufacturing, CE marking, marketing, incident monitoring). The successful applicant will be expected to contribute to ongoing and future projects of the lab. These may, for example, concern devices for repairing cardiac valves or for monitoring ambulatory physiological data. An interest in advanced therapeutic products (such as tissue-engineered bioartificial livers) would also be an asset.

The successful applicant will also assist the laboratory in the deployment of quality processes for the shared use of its technological platforms. They will strengthen the lab's activities regarding quality and regulatory requirements prior to the market authorization of a biomedical innovation. Their specialist knowledge and skills as a biomedical engineer are intended to provide a bridge between the technical

and the safety aspects of medical devices, and also with how these devices are perceived by medical staff and patients. This calls for an understanding of the interplay between users' perceptions, the technology used, and the risks/benefits offered by devices. In bringing a biomedical innovation to market, standards/regulatory issues need to be addressed and explained so that risks are identified at an early stage and the most effective alternatives put forward.

The successful applicant's know-how in relation to technology, quality and standards will also be of use in addressing sustainable development considerations at the various stages in the life cycle of medical devices.

### Profile and Keywords

**Profile:** Engineer or Project Leader with experience in biomedical, quality and regulatory affairs.

**Keywords:** Biomedical, Medical devices, Management, Quality, Regulatory.

### Research fields EURAXESS

Engineering > Biomedical engineering,  
Technology > Medical technology

### Profile required

Applicants must:

- hold an engineering or master's degree or a doctorate
- be able to teach in English

They must have professional experience in biomedical engineering, quality management or regulatory affairs in relation to medical devices, as well as a good knowledge of the biomedical industry and/or health facilities.

International experience, an interest in research collaborations, as well as a sensitivity to aspects of sustainability and digital security would be highly appreciated. The successful applicant will have the openness and capacity for adaptation that are necessary in any multidisciplinary research activity at UTC and in collaboration with outside bodies. They will be encouraged to initiate and/or strengthen scientific and technological cooperation with other research teams, internationally and in France.

### Others

To carry out their teaching and research activities, the successful applicant will have all the necessary means and equipment: an office, access to laboratory equipment, computing equipment, teaching material (books, handouts, software, etc.). The Department and the BMBI laboratory offer collaborative office tools (ONLYOFFICE) as well as software platforms for teaching (Moodle) and publicizing students' work (WordPress).

### Organisation

Université de Technologie de Compiègne, a member of the Sorbonne University Alliance (ASU) and the network of universities of technology (UT), is ranked among the top French engineering schools by a number of national league tables, and offers a particularly favorable environment for teaching and research.

### The Department

The Department of Biological Engineering, one of the 6 departments at UTC, offers course units for entry-level students as part of the UTC Common Core and for students pursuing the different engineering majors (whether full-time or as a sandwich course), as well as providing professional vocational training in engineering. It also awards research degrees at the master's and PhD levels.

The Department's teaching covers technologies relating to medical devices, biotechnologies, food innovations, and agro-resources.

It hosts the Biomechanics and Bioengineering Laboratory (BMBI UMR CNRS 7338) and the Enzymatic and Cellular Engineering laboratory (GEC UMR CNRS 7035).

It maintains solid relations with industry in teaching (via student internships at various levels) and in research (collaborative research projects).

It also develops close links with other institutions in France and abroad as regards teaching (e.g., international student exchange agreements) and research (e.g., research collaborations).

<https://www.utc.fr/formations/diplome-dingenieur/genie-biologique-gb/>

## The Lab

The Biomechanics and Bioengineering (BMBI) Laboratory (UMR CNRS 7338) is a joint CNRS-UTC research lab.

Its multi-disciplinary research is centered around biomechanics and bioengineering, with a special focus on the mechanics of living systems and health engineering. The main scientific objectives of the laboratory are studying the functions and mechanisms governing living systems at the system scale (cardiac, skeletal, muscular), organ scale (heart, skin, bone, muscle, liver, etc.), and tissue scale (cells, molecules), to improve the understanding of pathologies and to contribute to the development of new therapeutic, diagnostic and evaluation tools. The laboratory is part of the CNRS's Institute for Engineering and Systems Sciences (INSIS) and secondarily affiliated to the CNRS's Institute for Biological Sciences (INSB).

Research activity at BMBI is organized via three teams with complementary skills: Cells, biomaterials, bioreactors (CBB), Characterization and personalized modeling of the musculo-skeletal system (C2MUST) and Biological Fluid Structure Interaction (IFSB).

The platforms and demonstrators developed at the Laboratory testify to BMBI's determination to bring its research to bear on the complexities of real-world applications.

More specifically, BMBI hosts two dedicated thematic meta-platforms for teaching, research and technology transfer that harness BMBI's expertise in relation to cell biology and the mechanical characterization of native and reconstructed tissues (<https://bmbi.utc.fr/recherche.html>).

Equipment available includes (i) dedicated experimental spaces for cell biology (L1 and L2), (ii) experimental spaces for fluid biomechanics (including PIV, micro-PIV, rheometer, microfluidics and microfabrication), (iii) software applications and clusters for 3D reconstruction and numerical simulations (PILCAM2), (iv) possible access to sophisticated medical imaging equipment, and (v) under certain conditions, access to other platforms in the Bioengineering Department (animal studies) and in UTC's SAPC physico-chemical analysis unit (confocal microscopy, environmental microscopy, SEM, and AFM).

BMBI has also developed close links with industrial partners (e.g. Ansys, Segula, and Guerbet) and start-ups. As principal investigator or partner, BMBI leads and/or is involved in numerous projects with university hospitals (Amiens, the Henri Mondor Hospital in Créteil, Pitié-Salpêtrière in Paris, Paul Brousse in Villejuif) and other academic teams in France (including INSERM, INRIA, Sorbonne University, and Ecole Polytechnique) and abroad (including U. Tokyo, QMUL, UCL, U. Waterloo, and the Lebanese University).

<https://bmbi.utc.fr/>

## Contacts

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## To apply

CV and covering letter to be uploaded to:

<http://candidature.utc.fr/ecc/>

For any additional information please contact:

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UTC - Human Resources Division - Recruitment Office - UTC/DRH/PR/2022

<https://www.utc.fr> – under the heading *recrutement*