ULB UNIVERSITÉ LIBRE DE BRUXELLES

FULL-TIME ACADEMIC POSITION IN AUTOMATIC CONTROL FOR SUSTAINABLE DEVELOPMENT

FACULTY OF ENGINEERING (ECOLE POLYTECHNIQUE DE BRUXELLES)

Reference : 2025/A036
Application deadline: 31/01/2025
Start date: 01/10/2025

Job description

Occupancy: 100% Professorship.

Tenure Track: The starting contract is 3 years. After the first 3 years period, an evaluation of the scientific and teaching activities will be carried out. Following a positive evaluation, the position will become tenured.

Discipline: This professorship aims at catering for the teaching and research needs of the ULB in the domain of Automatic Control and its applications. The increasing complexity of systems together with the sustainability challenges that our society faces (e.g. the need for more flexibility in the energy grid, the need to optimize performances, lifetime, and to reduce pollution generated by plants, the need for more automation required by the ageing population, the arising of autonomous vehicles, etc.) is resulting in a very high demand for Automatic Control and System Theory, both as a fundamental aspect of the training of new engineers, and as a research subject.

Distinctive features of Teaching Automatic Control at ULB: A major distinctive feature of the ULB teaching in Automatic Control is that, besides providing a high-quality theoretical background, it also provides a cutting edge "*teaching by practice*" experience. Since the 1960s ULB has heavily invested on hands-on teaching, developing a complete and well-structured control teaching laboratory consisting of various pilot processes representative of very different application domains (ranging from energy to robotics and mechatronics, process control, and aeronautics). This distinctive feature is highly appreciated by our students and by our international visitors. The selected candidate commits to continue and further develop this distinctive feature of teaching Automatic Control disciplines at ULB.

Distinctive features of Research in Automatic Control at ULB: A distinctive feature of research in Automatic Control at ULB is the explicit philosophy of carrying out in parallel both advanced theoretical research and relevant applied research. This kind of approach has proved very beneficial over the years, both in terms of impact in the local industry, but also in terms of identifying valuable research problems and directions. Another distinctive feature is the tradition to cooperate with researchers from very different disciplines and to explore fields that are apparently very far from each other (including all the fields of technology, but also other fields such as biology and medicine), both within ULB and outside. The selected candidate commits to continue and further develop this distinctive research philosophy, by

performing both theoretical and applied research. Whenever possible the candidate will focus on applications with a high impact on the UN Sustainable Development Goals.
Department Affiliation: The academic position will be based in the SAAS Department (Service d'Automatique et d'Analyse des Systèmes - Control and Systems Analysis Department). This department serves as the reference center for Automatic Control within the university. The department is well-equipped with a wide range of research facilities and demonstrators. Notable equipment includes: a comprehensive battery testing facility with over 100 testing channels for test-cycling of both battery cells and modules (up to 250V/50A), a motion capture flight arena for robotics experiments, and multiple robotic systems (drones, manipulators, mobile platforms) of different sizes and capacities. The department also includes a well-equipped rapid-prototyping workshop and technical personnel with remarkable experience in the conception and development of new research and teaching equipment.

Teaching Load: The first year of activity of this academic position will have no course to teach to allow the new academic to get used to the environment, prepare the material for the courses that will be taught in subsequent years, submit research project proposals and, if needed, to improve their French. Starting from the second year, the teaching load foreseen for this position will include two bachelor courses:

1. Automatique, MATHH304, 5 ECTS (*taught to Bachelor 3rd year course for the engineering programme and to Master 1st year course for the bioengineering programme*) and associated *partim courses (*Instrumentation et Automatique, ELECH3002, and Projet integré biomedical, PROJH3000*) (this course could be taught in English or in French)*
2. Signaux et Systèmes, MATHH3001, 5 ECTS (*taught to Bachelor 3rd year course for the engineering programme, in French*).

These two courses will be complemented by one elective course to be offered to Electrical and Electromechanical Engineering students in the Master 2nd year (in English). The content of this last course can be designed based on the interests/expertise of the selected candidate.

Qualifications required :

PhD in Engineering with a PhD thesis in Control System Engineering

Skills required

- Capability to teach in English (English C1).
- Capability to teach in French (Minimum level B2). An adaptation period of one year can be granted, but the candidate must be able to teach in French by the beginning of the second year following her/his appointment. A budget will be allocated to the hired person to enable them to attend training programs. If language training is necessary, this budget will be prioritized for that purpose.
- At least four years of scientific experience (including the PhD) by the time of employment.
- Excellent scientific record in the field of automatic control, possibly with results in both fundamental and applied research.
- Good teaching and pedagogical capabilities and commitment to improve and hone teaching skills over the years.
- Good capability to collaborate with colleagues, also from different fields and backgrounds.
- Commitment to work on attracting research funds to create an autonomous research group.

Interested ?

For more information, please contact Prof. Emanuele Garone (telephone: +32 2 650.26.75 – E-mail: Emanuele.Garone@ulb.be). For information about the gender equality politics of the Faculty, please contact Prof. Alessia Cuccurullo (E-mail: alessia.cuccurullo@ulb.be).

Your application will consist of a Curriculum Vitae*(if you wish, a standard CV can be downloaded from the website: https:* //www.ulb.be/fr/documents-officiels/emplois-academiques-et-scientifiques-cv-type) and a document completed using the template available at this URL address https://www.ulb.be/fr/documents-officiels/1e-applic-form-acad-tps-plein-docx. This template structures your application by including the following elements:

- an application letter
- a 7,000-character report (4 pages) presenting the applicant's research activities and a research project, including how these will integrate into ULB's research teams
- a teaching dossier including a 7,000-character report (4 pages) on the applicant's previous teaching activities and a teaching project for the first five years in this position; these must be relevant to the faculty and to the teaching profiles for the programs to which the applicant is to contribute
- a note on the applicant's international achievements and projects (no more than 4 pages)
- the names and e-mail addresses of five referees (respecting the gender balance) who may be contacted by those in charge of evaluating applications. These referees should not have conflicts of interest because of family or emotional ties.
- The shortlisted candidate will be invited to an interview conducted in English. Candidates will be asked to present a short lecture (English) on a prescribed topic of the chair domain aiming to assess the pedagogical skill. The French level will be assessed with a short informal discussion that will close the interview.

Incomplete applications or applications that do not use the template provided will not be examined by the selection committee.

The appointment to the academic staff of ULB is made at" Chargé de Cours" level. As of their appointment, members of academic staff are authorized to use the honorary title of" Professeur".

Equal opportunities policy

Applications from women are strongly encouraged.

Equal pay between men and women is ensured by identical salary scales for all academic staff.

The purpose of the 'Cascade' initiative, which has no equal in the Wallonia-Brussels Federation, is to fight the 'leaky pipeline' effect, which refers to the decrease in parity at higher stages of academic careers and is common in Europe, in Belgium, and at the Université libre de Bruxelles. In order to fight this phenomenon, it was decided that the gender balance among promoted staff members is at least equal to that observed at the lower level of career progression.

The Brussels School of Engineering is particularly attentive to work-life balance: flexible working hours, telework options, etc.

ULB's personnel management policy is geared towards diversity and equal opportunities.

We recruit candidates on the basis of their skills, irrespective of age, gender, sexual orientation, origin, nationality, beliefs, disability, etc.

Would you like to be provided with reasonable accommodation in the selection procedure because of a disability, disorder, or illness? Please contact Marie Botty, the person in charge of diversity aspects for the academic and scientific staff (marie.botty@ulb.be). Be assured of the confidentiality of this information.

More details on the ULB gender and diversity policy are available at: Diversity at ULB - ULB.

You will find all the regulations relating to academic careers on our site at http://www.ulb.ac.be/emploi/academique.html.