

FULL-TIME RESEARCH AND TEACHING ASSISTANT POSITION**IN ENERGY SYSTEMS****BRUSSELS SCHOOL OF ENGINEERING**

Reference : 2025/S128

Application deadline: 28/04/2025

Start date : 01/10/2025

Job Description

The selected candidate will join the Department of Aero-Thermo-Mechanics to support both teaching and research activities, with a particular focus on hydrogen as an energy carrier. The research will center on a Power-to-H₂-to-Power cycle, investigating the integration of electrolysis for hydrogen production and its conversion back to electricity using a hydrogen-fueled piston engine.

This full-time position is structured as follows:

- 50% Teaching – Assisting with courses, labs, and student projects in energy systems and related fields
- 50% Research – Conducting a PhD thesis within the research group, contributing to advancements in hydrogen energy technologies.

The successful candidate will:

- Assist in teaching activities within the department, supervising practical work, and supporting student projects in the course listed below.
- Contribute to curriculum development by preparing educational materials, assessments, and laboratory experiments.
- Conduct research on hydrogen-based energy systems, with a focus, hydrogen storage, and its utilization in piston engines.
- Develop and test models for hydrogen energy conversion, including thermodynamic analysis and control strategies.
- Participate in experimental research, including setting up and operating electrolysis and hydrogen combustion test rigs.
- Publish research findings in academic journals and conferences.

Diploma

Master's degree in Electro-Mechanical Engineering or a related field. The candidate should also meet the PhD program admission requirements.

Skill required

- Strong background in thermodynamics, energy conversion, and fluid mechanics.
- Experience with hydrogen production/combustion, and storage technologies is an asset.
- Hands-on experience with experimental setups and laboratory instrumentation is highly desirable.
- Good knowledge of numerical modeling and simulation tools (e.g., MATLAB, Python, CFD, or thermodynamic modeling software).
- Excellent communication and organizational skills.
- Fluency in French and English
- Previous teaching or tutoring experience is a plus but not mandatory.

Courses covered

The exact list will be determined as a function of the candidate's expertise but could include :

- MECA-H-301 : Systèmes énergétiques : principes de bases et technologies durables
- MECA-H-3001: Fluid mechanics and transfer processes
- MECA-H-303 : Cinématique et dynamique des machines
- MECA-H-305 : Fluid Mechanics
- MECA-H-401 : Machine elements
- MECA-H-402 : Turbomachinery
- MECA-H-407: Computational modelling in aerospace
- MECA-H-418: Heat Transfert and Combustion
- MECA-H-419: Data-Driven engineering
- MECA-H-420: Piston engine
- MECA-H-506: Aircraft performance and stability
- MECA-H-507: Aircraft Propulsion
- MECA-H-532: Advanced internal combustion engines
- MECA-H-508: Aircraft Conceptual Design

Interested ?

For more information, please contact Mr Coussement Axel (telephone: +32 2 650 26 73 – E-mail: axel.coussement@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/4e-applic-form-assistant-docx>.

This template structures your application by including the following elements:

- an application letter
- a note on the applicant's PhD research project (4 pages)
- two letters of reference

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

Where to go to apply?

Click here: <https://jobs.ulb.be/job-invite/1602/?isInternalUser=true>

For any connection problems or questions about our application, consult our FAQ : [e-recrut-mode-d-emploi-candidat-en- 1734942996246-pdf](#)

Equal opportunities policy

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 <https://www.ulb.be/en/about-ulb/gender-equality-at-ulb>.

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