

Brahmal Vasudevan Institute for Sustainable Aviation

**PhD Studentship on**

**Design optimization of hydrogen fuel cell-powered aircraft**

**(REF: AE0045\_V3)**

Supervisors: Dr Laura Mainini and Billy Wu

Deadline: **until filled**

Applications are invited for a Ph.D. studentship at the Brahmal Institute, a collaborative research centre at Imperial College enabling blue-sky thinking to address adverse environmental impacts of aviation. The project is cross-disciplinary and the successful candidate will collaborate with leading researchers within Imperial.

This project is cross-disciplinary and focuses on **Design optimization of hydrogen fuel cell-powered aircraft,** working across two different departments within Imperial, the *Dyson School of Design Engineering* and the *Department of Aeronautics*

Hydrogen fuel cells have huge potential to power low-carbon next generation aircraft, however challenges around performance, lifetime and cost remain barriers. In addition, the integration of these power solutions on board air-vehicles introduces specific design challenges that require the development of novel power and thermal architectures, with impact on both configurations and operations of the future aircraft.

This project will leverage multi-scale modelling approaches for hydrogen fuel cells (at the cell, stack, and system level), towards an aircraft design optimization framework. Advanced multifidelity and active learning methods for modelling and optimization will be developed to address the integrated design problem.

Applications are invited from candidates with (or who are expected to gain) a first-class honours degree or equivalent in a suitable field such as engineering, computer science, physics, or atmospheric science.

**Funding**

This studentship is for 3.5 years and will provide full coverage of tuition fees and an annual tax-free stipend of approximately £20,622 for Home, EU and International students.

Information on fee status can be found at<https://www.imperial.ac.uk/study/pg/fees-and-funding/tuition-fees/fee-status/>. To learn more about Imperial College, please go to [www.imperial.ac.uk/study/pg](http://www.imperial.ac.uk/study/pg).

To apply for these fully-funded studentships please go to <https://www.imperial.ac.uk/study/apply/postgraduate-doctoral/application-process/> and indicate in your application the reference code **Brahmal PhD23-3** for the project topic. Please address your application to Department of Aeronautics.

For further inquiries, contact us at [brahmal-institute@imperial.ac.uk](mailto:brahmal-institute@imperial.ac.uk).

*Imperial College is committed to equality and valuing diversity. We are also an Athena SWAN Silver Award winner, a Stonewall Diversity Champion, a Disability Confident Employer and are working in partnership with GIRES to promote respect for trans people.*