Title: Aerodynamics and Noise of Next-Generation Distributed Propulsion System

Type of award: PhD Research Studentship

Department: Aerospace, Fluids and Aerodynamics Research Group

Scholarship Details: Minimum £15,609 p.a. covering UK tuition fees and a tax-free stipend at the UKRI stipend level

Duration: 3.5 years

Eligibility: Home/EU (UK settled status) with permanent UK residency

Start Date: 1 October 2021

PhD Topic Background/Description
The transportation technology has greatly advanced in the past two decades, leading to rapid development in the area of Urban Air Mobility (UAM), which sees the unmanned aerial vehicles and short-haul electric aircrafts to gradually become an integral part of our daily life. The UAM market is currently projected to reach an industrial value of 1.5 trillion USD by 2040. Compared to the research efforts into conventional aircraft aerodynamics and aeroacoustics, research into electrical distributed propulsion (DP) and electrical Vertical Take-Off and Landing (eVTOL) which are the promising green (i.e., zero-emission) configurations for UAM, remains relatively scarce. Therefore, it is timely and essential to carry out research work into these configurations, as U.K. embraces on its ‘Build Back Greener’ initiatives. This proposed research project aims to focus on the flow interactions associated with the distributed propulsion system, as well as their influence on the aerodynamically generated noise by implementing experimental measurements in the state-of-the-art facility and high-fidelity numerical simulations. With the comprehensive flow field and noise information, the project will significantly improve our knowledge and understanding of distribution propulsion configurations, contributing to more efficient and quieter UAM technologies.

URL for further information: Bristol Aeroacoustics Team: http://www.bristol.ac.uk/aerodynamics-research/aero-acoustics/

Candidate Requirements
Applicants must hold/achieve a minimum of a master’s degree (or international equivalent) in a mathematics, or engineering discipline. Applicants without a master's qualification may be considered on an exceptional basis, provided they hold a first-class undergraduate degree. Please note, acceptance will also depend on evidence of readiness to pursue a research degree.

If English is not your first language, you need to meet this profile level: Profile E

Further information about English language requirements and profile levels.
Basic skills and knowledge required
Some experiences with programming languages such as Python and C++ are desirable.

Scholarship Details
Stipend at the UKRI minimum stipend level will also cover tuition fees at the UK student rate. Funding is subject to eligibility status and confirmation of award.

Funding is open to EU applicants who have no restrictions on how long they can stay in the UK and have been ordinarily resident in the UK for at least 3 years prior to the start of the studentship (with some further constraint regarding residence for education).

For EPSRC funding, students must meet the EPSRC residency requirements.

Informal enquiries
For informal enquiries, please email Dr Nick Zang, nick.zang@bristol.ac.uk

For general enquiries, please email came-pgr-admissions@bristol.ac.uk

Application Details
To apply for this studentship, submit a PhD application using our online application system [www.bristol.ac.uk/pg-howtoapply]

Please ensure that in the Funding section you tick “I would like to be considered for a funding award from the Aerospace Engineering Department” and specify the title of the scholarship in the “other” box below with the name of the supervisor.