

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 £16,062 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 September 2022

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.

To be treated as a home student, candidates must meet one of these criteria:

- be a UK national (meeting residency requirements)
- have settled status
- have pre-settled status (meeting residency requirements)
- have indefinite leave to remain or enter.

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.