



Trinity College Dublin  
Coláiste na Tríonóide, Baile Átha Cliath  
The University of Dublin



Taighde Éireann  
Research Ireland

## **SHARPENED: Sustainable Aviation Fuel (SAF): Technical specification and production pathways to facilitate adoption by the aviation industry**

### **Why is it relevant?**

Developing the SAF sector is crucial for reducing aviation's carbon footprint and achieving climate goals. Existing SAFs can reduce lifecycle greenhouse gas emissions by up to 80% compared to conventional jet fuel. This significant reduction is essential as aviation currently accounts for approximately 2% of global CO<sub>2</sub> emissions – a figure which is set to rise as other sectors decarbonise more rapidly, and as the aviation sector continues to grow. This project focuses on evaluating the sustainability of production pathways linked to Ireland's renewable energy potential, and quantifying the benefits for the aviation industry and broader Irish economy. For hard-to-abate sectors such as aviation, deployment of renewable energy through e-fuels represents a key decarbonisation pathway.

### **What skills will I develop, and where will I go?**

- Applied techno-economic and lifecycle modelling / optimisation in the context of sustainable aviation.
- World leading insight into e-fuel production, legislation and technical standards.
- Participation in a world class personal and professional development programme to equip you to thrive as an entrepreneurial leader.
- International technical training opportunities, through industrial and academic partners.
- Presentation of work at international conferences in the USA, Europe and Asia.
- Communication skills through monthly update discussions with the project's industrial collaborator, as well as wider stakeholder engagement activities through the Ryanair Sustainable Aviation Research Centre at Trinity.

### **Qualifications**

- **Strong 1<sup>st</sup> class honours degree** in Mechanical or Aerospace Engineering, or an equivalent qualification at Masters level.
- Clear, demonstrated **passion for sustainability**, particularly in the context of the aviation sector.
- Evidence of **entrepreneurial activities** / flair, experience of collaboration / **engagement with industry**.
- Be **highly motivated**, have **excellent communication skills**, and be able to **undertake challenging tasks under your own initiative**.

### **Studentship**

This four year, PhD studentship (generously co-funded by ESB and Research Ireland) covers the full university fees and includes a tax-free income of **€31,000 per annum**. The starting date for this project is flexible.

### **Application Process**

Candidates should email a cover letter and CV to [stuartch@tcd.ie](mailto:stuartch@tcd.ie) prior to the closing date on **Friday 1<sup>st</sup> August 2025 @ 16:00**.

**NOTE:** shortlisted candidates will be expected to deliver a presentation and participate in an interview prior to appointment.

