**Imperial College London**

**Departments of Aeronautics & Department of Materials**

PhD Studentship

Application deadline: until filled

Start date: October 2024 (flexible)

Design, manufacturing and characterisation of functional and green end-of-life cellulose-based materials (Ref: AE0052)

Applications are invited for a fully funded studentship at Imperial College London under the joint supervision of Professors Koon-Yang Lee (Aeronautics) and Julian Jones (Materials) on the development of cellulose-based materials.

Challenges with fossil-derived materials, especially with single-use products, have driven research toward intensive development of alternatives in many industrial sectors. The requirements are demanding as materials should be from natural and renewable resources, biodegradable, and, preferably, also recyclable. In addition to sustainability, new application solutions need to have the required functionality, mechanical properties and material efficiency. In this context, cellulose is an excellent alternative. Not only is cellulose the most abundant homo-organic polymer on earth, it is also renewable, biodegradable, recyclable and also can be chemically modified easily due to the presence of hydroxy groups. The main objective of this PhD project is to design and manufacture functional green end-of-life cellulose-based materials, either as a standalone material structure or as a filler in a composite, for various advanced engineering applications, with particular focus on replacing single use products.

Applicants should have, or expect to obtain, a strong Master’s degree in a quantitative STEM discipline, e.g., a 1st class degree in Chemistry, Materials, Chemical Engineering or any other relevant STEM subjects. We also expect the applicants to have a demonstrable interest in research, innovation and inter-disciplinary research. It is desirable for the successful applicant to demonstrate experience, knowledge, and/or interest of relevance to the project, e.g., basic chemistry, materials science and sustainability, as well as teamworking skills.

**Funding**

This studentship is available to students eligible for home fees.

The studentship is for 3.5 years and will provide full coverage of tuition fees and an annual tax-free stipend of £20,622.

Information on fee status can be found at[**https://www.imperial.ac.uk/study/pg/fees-and-funding/tuition-fees/fee-status/**](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/>

**Course code:** Aeronautics Research (PhD)

**Proposed topic:** AE reference number (as above)

**Proposed Supervisor:** Please name Supervisor advertising this position.

Interested applicants should send an up-to-date curriculum vitae to Professor Koon-Yang Lee (koonnyang.lee@imperial.ac.uk ) citing “PhD Studentship, ICL-cellulose” in the email title. Suitable candidates will be required to complete an electronic application form, following the standard Imperial College application procedure. For queries regarding the application process, please contact Lisa Kelly (l.kelly@imperial.ac.uk).

*Imperial College is committed to equality and valuing diversity. We are an Athena Silver SWAN Award winner and a Stonewall Diversity Champion.*