

Information on Postgraduate Research Scholarship - Ref: FES-PhD-2425-05	
Faculty:	Engineering & Science
Department:	Engineering
Lead Supervisor:	Dr. Hamid Salehi
Project Title:	Sustainable additive manufacturing—Advancing Powder Recycling and Monitoring
Project Description:	<p>Additive manufacturing (AM) is transforming manufacturing processes, with its global market projected to grow from £12 billion in 2020 to approximately £51 billion by 2030. A key challenge in laser additive manufacturing (LAM) is the recycling of powders, a common practice to minimise waste and costs. Over multiple cycles, powders degrade due to factors such as particle attrition, surface oxidation, and the accumulation of condensate fines. These issues compromise powder deposition, sintering, and the quality of the final components.</p> <p>The degree of powder degradation depends on various factors, including the recycling ratio, manufacturing parameters (e.g., temperature, air velocity, and humidity), and handling methods. Despite its importance, predicting powder quality deterioration over extended LAM operations remains a significant research gap.</p> <p>This PhD project aims to address this challenge by developing a predictive toolkit to monitor the evolution of powder quality during recycling. Using the state-of-the-art Greenwich AM surface test-rig and a pilot plant simulating real-world industrial practices in powder recycling, the project will investigate how variations in powder quality affect the performance of final products, contributing to more sustainable and reliable LAM processes.</p>
Duration:	3 years, Full-Time Study or 6 years, Part-Time Study
Bursary available (subject to satisfactory performance):	
<p>Please note that as part of your application process, there will be short-listing of candidates per project. Those shortlisted will be interviewed and then there is a competitive selection that includes the project and candidate to decide which project will receive which financial support. This financial support can take up the form of a (partial) tuition fee waiver and/or stipend for your PhD studies. You will be made aware of what that offer will be and will then be asked to decide on moving forwards with your application or not.</p> <p>In case of allocation of financial support, then the tuition fee waiver would include a contribution to tuition fees equivalent to the university's Home rate, currently £4,786 (FT) or pro-rata (PT), for the duration of their scholarship. International applicants may need to pay the remainder tuition fee for the duration of their scholarship.</p> <p>In case of the allocation of a stipend, then this fee would be subject to an annual increase. Year 1: £19,237 (FT) or pro-rata (PT) Year 2: In line with UKRI rate Year 3: In line with UKRI rate</p>	

Person Specification of Essential (E) or Desirable (D) requirements:	
Criteria:	E or D
Education and Training:	
<ul style="list-style-type: none"> 1st Class or 2nd class, First Division (Upper Second Class) honours degree or a taught master's degree with a minimum 60% overall (or equivalent) in a relevant area to the proposed research project 	E
<ul style="list-style-type: none"> For those whose first language is not English and/or if from a country where English is not the majority spoken language (as recognised by the UKBA), a language proficiency score of at least IELTS 6.5 (in all elements of the test) or an equivalent UK VISA and Immigration secure English Language Test is required, if your programme falls within the faculty of Engineering and Science a language proficiency score of at least IELTS 6.5 overall with a minimum of 6.0 in all elements of the test or an equivalent UK VISA and Immigration secure English Language Test is required. Unless the degree above was taught in English and obtained in a majority English speaking country, e.g. UK, USA, Australia, New Zealand, etc, as recognised by the UKBA. 	E
Experience & Skills:	
<ul style="list-style-type: none"> Previous experience of undertaking research (e.g. undergraduate or taught master's dissertation) 	E
<ul style="list-style-type: none"> Experience in particle technology and/or the mechanics of particulate solids 	E
<ul style="list-style-type: none"> Experience in powder-based additive manufacturing 	D
<ul style="list-style-type: none"> Experience in developing predictive and optimisation toolkits for particulate handling systems 	D
Personal Attributes:	
<ul style="list-style-type: none"> Understands the fundamental differences between a taught degree and a research degree in terms of approach and personal discipline/motivation 	E
<ul style="list-style-type: none"> Able to, under guidance, complete independent work successfully 	E
Other Requirements:	
<ul style="list-style-type: none"> This scholarship may require Academic Technology Approval Scheme approval for the successful candidate if from outside of the EU/EEA 	E
<ul style="list-style-type: none"> The scholarship must commence by September 2025 	E
Closing date for applications:	midnight UTC on 16/02/2025
For further information contact:	Dr. Hamid Salehi (H.Salehi@gre.ac.uk)
<p>Making an application: Please read this information before making an application. Information on the application process is available at: https://www.gre.ac.uk/research/study/apply/application-process. Applications need to be made online via this link. No other form of application will be considered.</p> <p>All applications must include the following information. Applications not containing these documents will not be considered.</p> <ul style="list-style-type: none"> Scholarship Reference Number (*FES-PhD-2425-05*)– included in the personal statement section together with your personal statement as to why you are applying a CV including 2 referees * academic qualification certificates/transcripts and IELTS/English Language certificate if you are an international applicant or if English is not your first language or you are from 	

a country where English is not the majority spoken language as defined by the UK Border Agency *

**upload to the qualification section of the application form. Attachments must be a PDF format.*

Before submitting your application, you are encouraged to liaise with the Lead Supervisor on the details above.