

## Position Description

### 1. General Information

Name of the position	<b>Intelligent Digital Platform for Real-Time, Product-Driven Decisions and Circular Economy Opportunities across Supply Chains (Research Assistant / PhD student)</b>
Foreseen enrolment date	October 2025
Position is funded by	<ul style="list-style-type: none"> <li>• UKRI</li> <li>• Industry Partner</li> </ul>
Research Host	Department of Engineering, University of Cambridge
PhD awarding institution	University of Cambridge
Location	Cambridge, United Kingdom
Salary	£32,300k (est. 38,900 EUR) annual <b>gross</b> , ~ £2,690 (est.3,240 EUR) monthly <b>gross</b>
Supervisors	<ul style="list-style-type: none"> <li>• Karel Kruger, Associate Professor, University of Cambridge</li> <li>• Mukesh Kumar, Associate Professor, University of Cambridge</li> <li>• Industry Partner: TBC</li> </ul>
Group of discipline	Operations and Supply Chain Management

### 2. Research topics (only one of these projects will be funded)

**Project 1: *The digital integration of product lifecycle information and R-process models to provide real-time insights for circular economy business decisions***

The realisation of circular economy-based business models is currently limited by a lack of digital information, tools and insights to support operational decisions. While industry has recently started to acquire large volumes of product lifecycle data, tools and platforms are still required to generate information and insights to effectively support decisions. Furthermore, the implications (e.g. yields, emissions, costs) of R-processes (e.g. recycle, remanufacture, refurbish), which are central to the circular economy, are not accessible to decision makers in a definite and timely fashion. This topic will develop an architecture and platform to integrate product lifecycle information and digital R-process models for on-demand insights.

**Supervisors:**

Academic supervisors: Karel Kruger (UCAM), Mukesh Kumar (UCAM),  
Industrial supervisor: TBC

**Research Fields:** Operations and Supply Chain Management



**Project 2: *Development of an intelligent agent-based platform to support the dynamic exploration of opportunities for circular economy across supply chains***

Several recent global events have exposed the volatility, vulnerability and importance of supply chains. The supply chains that will drive the circular economy is expected to exhibit even more volatility, since these supply chains will likely be disturbed by frequent changes in supply and demand, as well as the introduction and enforcement of international regulations. This topic will develop a digital marketplace platform, based on AI agents, that can explore and negotiate opportunities within and across supply chains on behalf of business actors. Agents in this ecosystem will be able to share information, execute strategies (likely employing machine learning or large language models) and interface with human decision makers.

**Supervisors:**

Academic supervisors: Karel Kruger (UCAM), Mukesh Kumar (UCAM),

Industrial supervisor: TBC

**Research Fields:** Operations and Supply Chain Management

**Project 3: *Development of an intelligent product platform to enable product-driven decisions and operations for a circular economy***

This topic will focus on the development of a digital platform that maintains the digital representations of physical products, which allow these products to execute autonomous functions related to their contribution to a circular economy. For instance, the digital representations of products may alert decisions makers of optimal timing/conditions for the execution of R-processes, based on acquired product lifecycle data and the deployment of prediction and optimization models. This product-driven mechanism will serve as a key enabler for the prioritization of circularity – as a means towards sustainability – within existing business models.

**Supervisors:**

Academic supervisors: Karel Kruger (UCAM), Mukesh Kumar (UCAM),

Industrial supervisor: TBC

**Research Fields:** Operations and Supply Chain Management

### 3. Employment Benefits and Conditions

The University of Cambridge offers a 48-months full-time work contract. There is a probation period of 6 months and the total working hours per week is 37 hours.

The remuneration, in line with the European Commission rules for Marie Skłodowska-Curie grant holders, will consist of a **gross annual salary of £32,300k (est. 38,900 EUR)**, which is of monthly ~ £2,690 (est.3,240 EUR) gross, subjected to the UK [tax regimen](#).

**Benefits include:**

- Access to all the necessary facilities at UCAM and RMIT University
- Tuition fees at PhD awarding institutions
- Travel allowance to cover flights and accommodation for participating in DREAM+PLAN events
- Up to 12 months in Australia



This project has received funding from the European Union's Horizon Europe research and innovation programme under the Marie Skłodowska-Curie grant agreement N° 101179842



- 41 days paid holiday leave (including Bank Holidays)
- Social security coverage
- Pension contributions
- Sick leave
- Parental leave

## 4. PhD enrolment

Successful candidates for this position will be enrolled by the following institutions and must comply with their specific entry requirements, in addition to DREAM+PLAN's conditions.

### University of Cambridge

To enrol in a Doctorate program, you must meet the general conditions, namely:

- Minimum a 2:1 Honours Degree
- English Language requirement IELTS (Academic) score at least 7.0 in all categories except for reading which must be at least 6.5

More information: <https://www.postgraduate.study.cam.ac.uk/courses/directory/egegpdpeg>

### RMIT University

Visit the website: <https://www.rmit.edu.au/research/research-degrees/how-to-apply>

