



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Modelling Plastic Waste Resource Recovery Systems, Faculty of Engineering



Salary: Grade 7 (£32,548– £38,833 p.a.)

Reference: ENGCV1079

Closing date: 10 September 2018

Fixed-term until 31 March 2019, available immediately

We will consider flexible working arrangements

Research Fellow in Modelling Plastic Waste Resource Recovery Systems

School of Civil Engineering

Are you a highly-motivated research professional with a passion for interdisciplinary scholarship? Do you have a highly numerate background and experience in dynamic systems modelling? Do you understand material properties of plastics and wider circular economy aspects? Do you want to further your career in one of the UK's leading research-intensive Universities?

Your role will be within the [CVORR](#) (Complex value optimisation for resource recovery) interdisciplinary research project, aiming at creating a novel sustainability/circular economy assessment methodology and tool. CVORR extends the capabilities of life cycle assessment (LCA) and material flow analysis (MFA) and merges them with socioeconomic considerations. You will be supporting with core expertise on dynamic systems mathematical modelling, helping to advance the core methodological developments, which relate on how we measure 'value' within a circular economy system.

In particular, your focus will be on the case study used (waste) plastics, modelling a system on the practicalities of closing the loop concepts, from a waste and resources management point of view, considering plastics materials/items and the related resource recovery technologies, such as mechanical sorting and reprocessing. Being highly numerate, you would use your understanding of systems engineering to mathematically model the value chain of mechanical recycling of plastics in the UK and/or the Global South. You will be part of a wider international team with an extensive research portfolio and world-leading expertise into multi-disciplinary projects related to waste and resources management circular economy (recovery of resources) at the School of Civil Engineering, your work being embedded in the University cross-disciplinary Theme of '[Cities](#)'.

What does the role entail?

As a Research Fellow, your main duties will include:

- Delivering the methodological advances and systems mathematical modelling work within the project team;



- Delivering the specific outcomes of the systems assessment modelling and its visualisation;
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- Delivering the specific outcomes of the systems assessment modelling and its visualisation;
- Working both independently and as part of a larger team of researchers and stakeholders to find optimal ways to measure 'value' in a resource recovery dynamic system and visualise it;
- Writing as first author and publishing the relevant report and academic outputs;
- Organising expert, stakeholder and dissemination meetings, collating activity reports and responding to management team requests;
- Supporting ad-hoc research activities, including contributing to research results and outputs and to the generation of independent and original ideas, ensuring a successful programme of investigation; and contributing to the research culture of the School, including proposal writing.;
- Continually updating your knowledge, understanding and skills in the research field.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

What will you bring to the role?

As a Research Fellow you will have:

- Both a PhD successfully completed by the time of taking up the role, and either (1) an MEng (2:1 or better) or (2) both an undergraduate degree (2:1 or better) and an MSc or MRes (merit or better), in a relevant scientific or engineering highly numerate discipline, such as Systems or Process Engineering;
- Well-developed analytical skills, applied in dynamic systems mathematical modelling coding (e.g. via Matlab, R, Python), ideally focused on understanding material properties and material flows;
- Experience with LCA or other relevant systems sustainability assessment methodologies;
- A proven track record of peer-reviewed publications in high impact factor journals;



- Excellent interpersonal and communication skills, both written and verbal (data collection and presentation of research results) and the ability to communicate effectively with a wide range of stakeholders internationally;
- Outstanding proven time management and planning skills, meeting tight deadlines; and a proven ability to work well both individually and in a team, unsupervised and to use your own initiative;
- Demonstrate an understanding of the diverse nature of the University's community and a willingness to work effectively with staff, students and visitors from a wide range of backgrounds.

You may also have:

- A good scientific understanding, ideally with recent relevant research experience, in resource recovery systems from municipal solid waste, ideally with plastics;
- An understanding of resource recovery in the Global South, ideally involving waste pickers (informal recyclers);
- Awards demonstrating excellence throughout your studies/ career.

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23.59** (UK time) on the advertised [closing date](#).

Contact information

To explore the post further or for any queries you may have, please contact:

[Dr Costas Velis](#), Lecturer in Resource Efficiency Systems

Tel: +44 (0)113 343 2327

Email: c.velis@leeds.ac.uk

Additional information

Faculty and School Information

Further information is available on the research and teaching activities of the [Faculty of Engineering](#) and the [School of Civil Engineering](#).



A diverse workforce

The Faculty of Engineering is proud to have been awarded the [Athena Swan Silver Award](#) from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. Our [equality and inclusion webpage](#) provides more information.

Working at Leeds

Find out more about the benefits of working at the University and what it's like to live and work in the Leeds area on our [Working at Leeds](#) information page.

Candidates with disabilities

Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at disclosure@leeds.ac.uk.

Criminal record information

Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page

