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UNIVERSITY OF GALWAY



HR EXCELLENCE IN RESEARCH

Postdoctoral Researcher - Chemical Kinetic Modelling

Combustion Chemistry Centre, School of Chemistry

Ref. No. University of Galway 055-24

Applications are invited from suitably qualified candidates for a full-time fixed term position as a Postdoctoral Researcher in Chemical Kinetic Modelling at the Combustion Chemistry Centre, University of Galway, Ireland.

This position is funded by the SFI and available immediately for one year initially with the possibility of an extension depending on funding availability.

The [Combustion Chemistry Centre](#) (C3) is engaged in fundamental research on the combustion of fossil and alternative biofuels. Combustion is the ultimate interdisciplinary field, it requires knowledge of chemistry, physics, fluid dynamics, thermodynamics and mathematics. C3 is concerned with the application of combustion research to the design of energy-efficient engine and gas turbine combustion systems and the impact of their use on toxic and greenhouse gas emissions, thus helping address the problems of urban air pollution and climate change.

Job Description:

The successful candidate will be a part of an SFI-funded research project on the combustion of fossil and biofuels. The techniques used in this project will include design of energy-efficient engine and gas turbine combustion systems.

Duties:

- Develop detailed chemical kinetic mechanisms to describe fuel oxidation.
- Develop new methods to minimize chemical kinetic mechanisms beyond the conventional model reduction limitation – compaction.
- Basic ability in python or similar programming languages.
- Competence in coupling and automation of existing codes and computational procedures.
- Competence in machine lead analysis of vast data sets.
- Experience of Machine learning or data science tools and good theory grounding in same.
- Supervise and mentor PhD and undergraduate students in developing chemical kinetic mechanisms.
- Write and publish international peer-reviewed journal articles.
- Day to day responsibility for the performance of all duties associated with their research project, in recording, interpretation and validation of experimental data, and in dissemination of project results and outcomes.
- The post holder will ensure research programme requirements in terms of documentation of the project activities, milestones and major key deliverables are implemented and adhered to.
- The post holder will assist in the preparation of periodic scientific reports for this project, maintain confidentiality of background IP, foreground IP and research results, liaise with the members of the group, industry partners and TTO office on the identification of and patent protection of intellectual property generated in the work programme.



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- The successful candidate will also represent the research activities of the microRNA research group as required at local, national and international events (including talks, panel discussions and meetings with funding agencies, industry representatives etc.
- Any other duties assigned commensurate to this level of post

Qualifications/Skills required:

Essential Requirements:

- Candidates must have a PhD, or a PhD thesis submitted, in Combustion/Physical Chemistry or a related discipline (e.g. Mechanical Engineering).
- High level of experience and competence in combustion chemistry
- Competence in coupling and automation of existing codes and computational procedures.
- Competence in machine lead analysis of vast data sets.
- Basic ability in python or similar programming languages
- A demonstrated output in terms of published papers in peer-reviewed journals

Desirable Requirements:

- Good writing and excellent communication skills are essential for this project, which will involve close collaboration with other members of C3 including industrial partners.
- An interest in combustion
- Ability to work independently and as part of a team
- Self-motivated, high level of initiative and excellent attention to detail.

Salary: Postdoctoral Researcher salary scale €42,782 to €54,965 per annum per annum, (subject to the project's funding limitations), and pro rata for shorter and/or part-time contracts.

The default position for all new public sector appointments is the 1st point of the salary scale. This may be reviewed, and consideration afforded to appointment at a higher point on the payscale (subject to the project's funding limitations), where evidence of prior years' equivalent experience is accepted in determining placement on the scale above point 1, subject to the maximum of the scale.

[Research Salary Scales - University of Galway](#).

Start date: Position is available immediately

Continuing Professional Development/Training:

Researchers at University of Galway are encouraged to avail of a range of training and development opportunities designed to support their personal career development plans. University of Galway provides continuing professional development supports for all researchers seeking to build their own career pathways either within or beyond academia. Researchers are encouraged to engage with our Researcher Development Centre (RDC) upon commencing employment - see [HERE](#) for further information.

Further information on research and working at University of Galway is available on [Research at University of Galway](#)



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For information on moving to Ireland please see www.euraxess.ie

Further information about Combustion Chemistry Centre is available at
<http://c3.universityofgalway.ie/>

Informal enquiries concerning the post may be made to Professor Henry Curran
(henry.curran@universityofgalway.ie)

To Apply:

Applications to include a covering letter, CV, and the contact details of three referees should be sent, via e-mail (in word or PDF only) to Ms Gráinne Morahan: email:

grainne.morahan@universityofgalway.ie

Please put reference number **University of Galway 055-24** in subject line of e-mail application.

Closing date for receipt of applications is 5.00 pm (Irish Time) Tuesday 26th March 2024.

We reserve the right to re-advertise or extend the closing date for this post.

University of Galway is an equal opportunities employer.

All positions are recruited in line with Open, Transparent, Merit (OTM) and Competency based recruitment

