THE UNIVERSITY of EDINBURGH
School of Chemistry

EaStCHEM
The Edinburgh and St Andrews Research School of Chemistry

A PhD studentship is available in the research groups of Dr Jennifer Garden and Professor Stephen Thomas, School of Chemistry, University of Edinburgh in collaboration with AstraZeneca and Professor Eva Hevia at the University of Bern in Switzerland.

The Application Reference is JGEHST-AZ1.

The studentship is fully funded for 48 months and covers tuition fees and an annual stipend at the UKRI rate, for 2024-25 this is £19,237 per annum.

This position is funded by UKRI and is only open to UK and Irish residents. For residency criteria, please see:
https://www.ukri.org/councils/esrc/career-and-skills-development/funding-for-postgraduate-training/eligibility-for-studentship-funding/#contents-list

Research Project Title
Na/Fe Cooperativity for C-H Functionalisation of Alkenes and Arenes.

Research Project Summary
This project aims to make key advances in sustainable pharmaceutical synthesis, through the development of novel earth abundant metal catalysed pathways towards small molecule activation. This is a highly collaborative PhD studentship spanning organic, inorganic and pharmaceutical chemistry.

You will be provided with high level training across a range of areas including air-sensitive organometallic synthesis and characterisation (e.g. the use of Schlenk techniques, gloveboxes and NMR spectroscopy), organic synthesis, reaction kinetics and mechanistic understanding. This project is in collaboration with AstraZeneca and Professor Hevia at the University of Bern, and will involve at least one placement at these sites.

Candidates
The successful candidate should hold, or expect to receive, a 1st class or 2.1 MSci degree or equivalent, and will be motivated, enthusiastic and able to work independently. Ideal candidates will have some experience in organometallic synthesis, homogeneous catalysis or method development. Experience in obtaining and analysing characterisation data on novel compounds is also desirable.

How to Apply
Applications can be made by contacting Jennifer Garden (j.garden@ed.ac.uk).
Please include a cover letter, CV, a copy of degree transcripts and contact details for two referees.
Interested candidates are welcome to email any questions directly to Dr Jennifer Garden, Professor Eva Hevia or Professor Stephen Thomas.
Applications for the position will remain open until Monday 17 February 2025, however the position may be filled before this for a suitable candidate. Therefore, early application is encouraged.

Related Work from the Garden, Thomas and Hevia Research Groups

Unlocking the Metalation Applications of TMP-powered Fe and Co(II) bis(amides): Synthesis, Structure and Mechanistic Insights, A. Logallo, L. C. H. Maddock, M. Mu, L. Gravogl, N. Jin, M. N. Peñas-Defrutos, K. Meyer, M. García-Melchor,* E. Hevia* *Angew. Chem. Int. Ed.* **2024**, *63*, e202402907

Combining Two Relatively Weak Bases ($Zn(TMP)_2$ and KOtBu) for the Regioselective Metalation of Non-Activated Arenes and Heteroarenes, N. R. Judge, E. Hevia* *Chem. Sci.* **2024**, *15*, 14757

Salt Additives as Activity Boosters: A Simple Strategy to Access Heterometallic Cooperativity in Lactide Polymerisation, W. Gruszka, J. A. Garden* *Chem. Commun.*, **2022**, *58*, 1609

Iron-catalysed Alkene and Heteroarene H/D Exchange by Reversible Protonation of Iron-hydride Intermediates, L. Britton, J. H. Docherty,* J. Sklyaruk, J. Cooney, G. S. Nichol, A. P. Dominey, S. P. Thomas* *Chem. Sci.* **2022**, *13*, 10291

TMEDA in Iron-Catalyzed Hydromagnesiation: Formation of Iron(II)-Alkyl Species for Controlled Reduction to Alkene-Stabilized Iron(0), P. G. N. Neate, M. Greenhalgh, W. Brennessel, S. P. Thomas,* M. Neidig* *Angew. Chem. Int. Ed.* **2020**, *59*, 17070

IMPORTANT

Before Submitting your cover letter and CV, please complete the online School of Chemistry Equality, Diversity and Inclusion Form, entry 2025-26.

The form will automatically generate a unique 'Response ID number' that you must include in your cover letter.

Equality and Diversity

The School of Chemistry holds a Silver Athena SWAN award in recognition of our commitment to advance gender equality in higher education. The University is a member of the Race Equality Charter and is a Stonewall Scotland Diversity Champion, actively promoting LGBT equality.

The University has a range of initiatives to support a family friendly working environment.
For further information, please see our University Initiatives website:
https://equality-diversity.ed.ac.uk/inclusion/family-and-carer