

Candidate Information

Position: Research Fellow (Organic Chemistry)
School/Department: School of Chemistry and Chemical Engineering
Reference: 25/112823
Closing Date: Monday 15 September 2025
Salary: £41,519 - £42,756 per annum.
Anticipated Interview Date: Wednesday 1 October 2025
Duration: 3 years

JOB PURPOSE:

We seek an enthusiastic, talented and highly motivated Postdoctoral Research Associate (PDRA) to join the Knipe Group (www.knipechem.co.uk) at Queen's University Belfast to work on an EPSRC-funded project: Atropisomerism as an Enabling Technology for Foldamers.

This ambitious research programme aims to develop a new class of artificial oligomers – atropisomeric foldamers – in which molecular conformation is controlled through stereogenic axes formed during synthesis. The successful applicant will design, synthesise, and characterise these molecules, building on novel catalyst-controlled methods to generate complex conformational architectures relevant to sensing, catalysis, and materials science.

Successful applicants will have responsibilities in designing, running and analysing synthetic chemistry reactions and experiments, conducting detailed structural and conformational characterisation using a range of techniques, writing research and review articles and supervising junior lab members.

The role is ideally suited to an organic chemist with a strong background in asymmetric catalysis, foldamer chemistry or supramolecular synthesis.

MAJOR DUTIES:

1. Undertake research under supervision within a specific research project or as a member of a research team.
2. Design, develop and refine research using a range of experimental models, with a core focus on atroposelective reactions for the construction of oligomeric scaffolds.
3. Use the methods developed to design and synthesis novel foldamer structures with stereogenic axes.
4. Carry out analyses, critical evaluations, and interpretations of experimental data and the literature using methodologies and other techniques including NMR, mass spectrometry, chiral HPLC and X-ray diffraction.
5. Produce high quality research outputs consistent with project aims, collaborating and co-authoring with PI on outputs.
6. In consultation with the project team, promote research milestones and outputs at national and international conferences.
7. Assist PI in the preparation of funding proposals and applications to external bodies.
8. Carry out occasional educational supervision, demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
9. Support the day-to-day running of the Knipe group, including supervising more junior colleagues.
10. Undertake supplementary duties relevant to the success of the project including administrative duties and additional training and development activities as required.

ESSENTIAL CRITERIA:

1. Have an undergraduate degree in chemistry or a closely related discipline.
2. Have or about to obtain a PhD in organic chemistry or a closely related discipline. (NB 'About to obtain' is normally defined as within 3 months of application date).

3. Specific, relevant research experience to include :
 - Experience in the area of asymmetric/enantioselective synthesis.
 - Experience in synthetic method development.
 - A proven track record of using analytical techniques (including NMR spectroscopy) to characterise complex molecules.
 - Working effectively as part of a research team in the development and promotion of the research project.
4. Strong publication record commensurate with stage of career.
5. Ability to contribute to management and administration of a research group.
6. Ability to supervise junior co-workers.
7. Practical problem-solving skills, independence of thought and initiative.
8. Ability to assess and organise resources.
9. Ability to communicate complex information in English effectively in oral and written format.
10. Ability to build relationships to develop internal and external networks.
11. Commitment to continuous professional development.
12. Willing to travel as part of role (e.g. for conferences, collaborator visits etc).

DESIRABLE CRITERIA:

1. Research experience in the areas of foldamer chemistry or atroposelective synthesis.
2. Use of advanced NMR techniques to study dynamic and/or conformational effects.
3. Proven ability to prepare funding applications.

ADDITIONAL INFORMATION:

Informal enquiries can be directed to: Dr Mark McLaughlin - mark.mclaughlin@qub.ac.uk.