



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

Research Fellow in Supramolecular Chemistry, School of Chemistry



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

Due to funding restrictions an appointment will not be made above £34,520

Reference: EPSCH1010

Closing date: 18 December 2019

Available from 1st March 2020 for up to 39 months, to end by 31 May 2023

We will consider flexible working arrangements

Research Fellow in Supramolecular Chemistry

School of Chemistry, Faculty of Engineering and Physical Sciences

Are you an ambitious researcher looking for your next challenge? Do you have an established background in supramolecular or materials chemistry in its broadest sense? Do you want to further your career in one of the UKs leading research intensive universities?

In this project, which has arisen as a consequence of the award of a 3 year EPSRC project grant to Prof Andrew Wilson and Dr Andrew Burnett, we will exploit recently developed hydrogen-bonded self-sorting systems, to introduce a conceptually transformative contribution to synthetic chemistry: the development of self-sorting networks which carry out synthesis and by virtue of their modularity can readily be (re)configured to result in different synthetic outcomes. Key underpinning developments needed to achieve these goals will include the development of an expanded self-sorting toolkit and advanced analytical methods to characterize mixtures of supramolecular complexes. You will also contribute to a further collaborative research project on the supramolecular chemistry of polymer electrolytes.

You will have a PhD in chemistry, or a closely aligned discipline, together with a track record of synthetic supramolecular chemistry and experience in the use of modern spectroscopic methods. You will also have excellent communication skills and the ability to work under pressure and meet deadlines.

What does the role entail?

As a Research Fellow, your main duties will include:

- Designing, planning and conducting a programme of investigation in consultation Prof Andrew Wilson and Dr Andrew Burnett;
- Generating independent and original research ideas and methods in the design, preparation and analysis of networks of self-sorting hydrogen-bonding motifs capable of performing and regulating synthetic transformations;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;



- Working both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible;
- Supporting ongoing collaborations with relevant researchers including Celia Fonseca Guerra (VU Amsterdam) and Johan Mattsson (Leeds, School of Physics);
- Making a significant contribution to the dissemination of research results by publication in leading peer-reviewed journals, by presentation at national and international meetings, and participating in our programme of public engagement activities;
- Supporting research activities and communication, through participation at group meetings/seminars, contributing to the supervision of junior researchers and PhD students and acting as a mentor to less experienced colleagues;
- To contribute to, and to encourage, a safe working environment;
- Maintaining your own continuing professional development.

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:

- A PhD (or have submitted your thesis before taking up the role) in chemistry or a closely allied discipline;
- Exceptional background knowledge of contemporary research in supramolecular chemistry;
- Exceptional technical skills and track record in synthetic supramolecular chemistry;
- Experience in the use of modern spectroscopic methods (e.g. 2D-NMR, IR, mass spectrometry);
- The ability to lead, design, execute and write up research independently;
- A developing track record of peer reviewed publications in international journals;
- Excellent communication skills, both written and verbal and the ability to communicate your research at national and international conferences;
- A proven ability to work well both independently and as part of a team, with a strong commitment to research in a team environment focused on cutting-edge



- approaches for development of functional self-sorting networks;
- Good organisational time management and planning skills, with the ability to meet tight deadlines, manage competing demands and work effectively under pressure without close support;
 - A strong commitment to your own continuous professional development.

You may also have:

- Evidence of practical experience in multidisciplinary research;
- Practical experience in the following: (i) advanced 2D-NMR acquisition and interpretation; (ii) 2D-IR or other ultrafast spectroscopy tools; (iii) quantum mechanical computational methods e.g. DFT;
- Experience of public communication and engagement.

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:

[Professor Andrew J Wilson](#), Professor of Organic Chemistry

Tel: +44 (0)113 3431409

Email: a.j.wilson@leeds.ac.uk

Additional information

Additional information about the project

Self-sorting is broadly defined as high fidelity recognition between molecules within complex mixtures. In cells, self-sorting allows the co-existence of multiple independently acting functional architectures and allows strict control over processes and outcomes. In supramolecular chemistry, the study of self-sorting phenomena and systems has provided a framework for the development of simple integrative and non-



integrative, social and narcissistic, self-sorting systems, but more complex networks comprising multiple independent architectures capable of performing function remain elusive. Our group has recently developed self-sorting cascades and networks ([Chem. Sci. 2013, 4, 1825](#) and [Chem. Eur. J. 2019, 25, 785](#)). Crucially, the ability to move from one self-sorted state to another is unique for small-molecule hydrogen-bonding motifs and provides an opportunity to develop networks in which a given self-sorted state determines a subsequent outcome.

Find out more about the research of the [Wilson Group](#)

Find out more about the:

- [School of Chemistry](#);
- [Astbury Centre for Structural Molecular Biology](#);
- [Faculty of Engineering and Physical Sciences](#);
- University [libraries](#), [journal](#) and [database](#) subscriptions.

A diverse workforce

The Schools in the Faculty of Engineering & Physical Sciences are proud to have been awarded the Athena SWAN [Bronze](#) or [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 is 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.

