

## Professor Nigel Simpkins BSc, PhD, CChem

Professor of Chemistry

[School of Chemistry \(/schools/chemistry/index.aspx\)](/schools/chemistry/index.aspx)

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### About

Nigel Simpkins is the Haworth Chair of Chemistry. Nigel is an organic synthesis chemist working on new synthetic methods for significant target molecules, including natural products. He has published over 150 papers, book chapters and reviews, and has graduated over 50 PhD students from his research group. Nigel has received funding from EPSRC, EU, DEFRA and the pharmaceutical industry, including GSK, AZ, Pfizer, Novartis and Lilly, for his research. His contributions to novel organic synthesis have been recognised by a number of awards and prizes from both industry and the Royal Society of Chemistry.

Nigel has served as assistant scientific editor for *Perkin Transactions 1*, and has sat on the Council of the Perkin Division of the RSC.

He is on the board of consulting editors for *Tetrahedron Letters*.

[Group Web Pages \(/research/activity/chemistry/simpkins/Simpkins-Frontpage.aspx\)](/research/activity/chemistry/simpkins/Simpkins-Frontpage.aspx)

### Qualifications

- Fellow of the Royal Society of Chemistry
- Chartered Chemist
- PhD in organic Chemistry, University of London 1983
- BSc in Chemistry, University of London 1980

### Biography

Nigel Simpkins obtained a First Class BSc in chemistry at Imperial College London in 1980, and then stayed on to do his PhD with Steven Ley, which involved the total synthesis of the insect antifeedant *ajugarin I*. He then spent one year in Philadelphia conducting postdoctoral studies with Professor K. C. Nicolaou in the area of complex natural product synthesis, particularly the chemistry of the important antifungal agent *amphotericin B*.

On returning to the UK in 1984, Nigel secured a 'New Blood' appointment as a lecturer at Queen Mary College, London, and commenced his independent research in organic chemistry, focused on chiral lithium amide base chemistry.

In 1988 Nigel moved to the School of Chemistry at The University of Nottingham, where he was able to develop his diverse research interests in chiral base chemistry, sulfur chemistry, radical reactions and natural product synthesis, and was promoted to Reader in 1995 and then to a personal chair in 1996.

In 2007 Nigel moved to Birmingham to take up the Haworth Chair of Chemistry.

### Teaching

#### Teaching Programmes

Chemistry F100

Chemistry F101

- Fundamental Organic Chemistry (Year 1)
- Enolate Chemistry (Year 2)
- Conformational Analysis and Reactivity (Year 3)

### Postgraduate supervision

Nigel is interested in supervising doctoral research students in the following areas.

- Asymmetric organic synthesis.
- Synthesis of Natural products and analogues.
- Synthesis aimed at novel molecular scaffolds, including boxes formed using templating methods.

### Research

#### Organic Synthesis

Novel strategies and synthetic methods for rapid access to complex molecular architectures, especially diketopiperazines. Also, unnatural designed targets such as molecular boxes formed via rotaxane intermediates.

### Natural Products

Especially alkaloids such as gelsemine, stephacidins, hirsutellones and welwitindolinones

### Chiral Lithium Amides

Use of enantioselective deprotonation for desymmetrization and kinetic resolution. Study of unusual lithiated intermediates by modelling and experiment.

### Other activities

- External Examining

### Publications

- F. C. Frebault and N. S. Simpkins, *A Cationic Cyclisation Route to Prenylated Indole Alkaloids: Synthesis of Malbrancheamide B and Brevianamide B, and Progress Towards Stephacidin A*, **Tetrahedron**, 2010, *66*, 6585–6596.
- F. Zhang, N. S. Simpkins, and A. J. Blake, *New Approaches for the Synthesis of Erythrinan Alkaloids*, **Org. Biomol. Chem.**, 2009, *7*, 1963–1979.
- C. J. Hayes, D. T. Kirk, L. Mitchell and N. S. Simpkins, *Bridgehead Lithiation–Substitution of Bridged Ketones, Lactones, Lactams and Imides: Experimental Observations and Computational Insights*, **J. Am. Chem. Soc.**, 2009, *131*, 8196–8210.
- K. Tchabanenko, N. S. Simpkins, and L. Male, *A Concise Approach to a Gelsemine Core Structure using an Oxygen to Carbon Bridge Swapping Strategy*, **Org. Lett.**, 2008, *10*, 4747–4750.
- A, N. M. Ahmad, V. Rodeschini, N. S. Simpkins, S. Ward, *Synthesis of Polyprenylated Acylphloroglucinols Using Bridgehead Lithiation: The Total Synthesis of Racemic Clusianone and a Formal Synthesis of Racemic Garsubellin*, **J. Org. Chem.**, 2007, *72*, 4803–4815.

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