



**Dr Valeska Ting**  
**BScTech, PhD**

Reader

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## Summary

Dr Valeska Ting is a Reader in Smart Nanomaterials in the Department of Mechanical Engineering, and has a background in materials synthesis, characterisation and physical properties testing. She currently holds a prestigious EPSRC Early Career Research Fellowship in Energy Materials and is also the School Research Director for the Departments of Civil, Aerospace and Mechanical Engineering at the University of Bristol. Her research into functional nanoporous materials involves using porous materials such as zeolites, porous carbons and metal-organic framework materials to address challenges in sustainable technologies. The group is currently interested in exploring the possibility of enhancing the storage capacity of existing nanoporous hydrogen storage materials, creating materials for selective storage and sequestration of gases such as carbon dioxide and designing multifunctional materials by combining properties of different sets of materials to produce hybrid systems that can perform several specialised functions.

The group employs a large range of experimental materials characterization techniques including X-ray and neutron diffraction, electron microscopy, thermogravimetric and spectroscopic analysis, gas sorption testing and physical properties testing for design and development of new materials-based solutions.

Valeska also enjoys science engagement, is an BAME Expert Voice for the BBC Academy, and has presented public lectures on composites for the Bristol Composites Institute, public webinars on energy storage for the Institution of Chemical Engineers, Nanomaterials Masterclasses for the IOM3 and video content on the laws of thermodynamics to support the 2016 Royal Institution Christmas lectures.

## Biography

Valeska has a broad interdisciplinary background, with a first degree (BscTech) majoring in Advanced Materials and a PhD in Inorganic Chemistry, as well as being a Chartered Chemical Engineer (ICChemE). She is currently a Reader and research group leader in Mechanical Engineering at the University of Bristol.

Her interdisciplinary research has close ties with collaborators in Physics, Chemistry, Electrical, Aerospace and Chemical Engineering, as well as with industry. The group also collaborates widely with international partners including established collaborations with groups in the USA, France, Germany, Singapore, South Korea, South Africa and Australia.

The group's research is supported through competitive grant funding from a range of funding institutions including the Engineering and Physical Sciences Research Council, the European Research Council, the Royal Academy of Engineering, the Royal Society, and the UK's Science and Technology Facilities Council.

## Teaching

Valeska is a Fellow of the Higher Education Academy and has taught on a range of courses at both undergraduate and postgraduate levels. These range from the introduction of challenging, fundamental thermodynamic concepts (Engineering Thermodynamics, 2nd year), practical hands-on laboratory skills training (Engineering Skills and Practice, 1st and 2nd year) to developments in materials science with clear links to applications and industry (Advanced Materials and Porous Solids, 4th year, Nanocomposites and Nanoengineering, MRes). She also has experience of supervising 3rd year undergraduate and Masters research projects, 4th year Engineering Design projects, and postgraduate courses on Sustainable Energy.

Outside of the standard curriculum, she has additionally delivered postgraduate skills training on effective inter-disciplinary collaboration and career progression, has helped to deliver week-long national training courses in Chemical Engineering for school-age students for the Engineering Development Trust and In2Science, as well as a "Nanomaterials Masterclass" for the Institute of Materials, Minerals and Mining (IOM3) and the West Surrey Materials Society.

## Memberships

## Organisations

[Department of Mechanical Engineering](#)

## Other sites

- [Mecheng](#)

## Research Groups

- [Advanced Composites Collaboration for Innovation and Science \(ACCIS\)](#)
- [Advanced Composites Collaboration for Innovation and Science \(ACCIS\) - Core](#)

## Recent publications

- Rowlandson, J, Woodman, T, Tennison, S, Edler, K & Ting, VP, 2019, '[Influence of Aromatic Structure on the Thermal Behaviour of Lignin](#)'. *Waste and Biomass Valorization*.
- Noguera-Díaz, A, Villarroel-Rocha, J, Ting, VP, Bimbo, N, Sapag, K & Mays, TJ, 2019, '[Flexible ZIFs – probing guest-induced flexibility with CO<sub>2</sub>, N<sub>2</sub> and Ar adsorption](#)'. *Journal of Chemical Technology and Biotechnology*.
- Mulakkal, M, Trask, R, Ting, VP & Seddon, A, 2018, '[Responsive Cellulose-Hydrogel Composite Ink for 4D Printing](#)'. *Materials and Design*, vol 160., pp. 108-118
- Tian, M, Lennox, M, Krüner, B, Rudic, S, Mays, TJ, Düren, T, Presser, V, Terry, L, Rolls, S, Fang, Y, Zhili, D & Ting, VP, 2018, '[Mechanism of CO<sub>2</sub> capture in nanostructured sodium amide encapsulated in porous silica](#)'. *Surface and Coatings Technology*, vol 350., pp. 227-233
- Bordeneuve, H, Wales, DJ, Physick, AJ, Doan, H, Ting, VP & Bowen, CR, 2018, '[Understanding the AC conductivity and permittivity of trapdoor chabazites for future development of next-generation gas sensors](#)'. *Microporous and Mesoporous Materials*, vol 260., pp. 208-216
- Wagner, JL, Perin, J, Coelho, RS, Ting, VP, Chuck, CJ & Franco, TT, 2018, '[Hydrothermal Conversion of Lipid-Extracted Microalgae Hydrolysate in the Presence of Isopropanol and Steel Furnace Residues](#)'. *Waste and Biomass Valorization*, vol 9., pp. 1867-1879
- Kobielska, PA, Telford, R, Rowlandson, J, Tian, M, Shahin, Z, Demessence, A, Ting, VP & Nayak, S, 2018, '[Polynuclear Complexes as Precursor Templates for Hierarchical Microporous Graphitic Carbon: An Unusual Approach](#)'. *ACS Applied Materials and Interfaces*, vol 10., pp. 25967-25971
- Wagner, JL, Jones, E, Sartbaeva, A, Davis, SA, Torrente-Murciano, L, Chuck, CJ & Ting, VP, 2018, '[Zeolite  \$\gamma\$  supported nickel phosphide catalysts for the hydrodenitrogenation of quinoline as a proxy for crude bio-oils from hydrothermal liquefaction of microalgae](#)'. *Dalton Transactions*, vol 47., pp. 1189-1201
- Burke, M, Armstrong, JP, Goodwin, A, Deller, RC, Carter, BM, Harniman, RL, Ginwalla, A, Ting, V, Davis, SA & Perriman, AW, 2017, '[Regulation of Scaffold Cell Adhesion Using Artificial Membrane Binding Proteins](#)'. *Macromolecular Bioscience*, vol 17.
- Doan, H, Fang, Y, Yao, B, Zhili, D, White, TJ, Sartbaeva, A, Hintermair, U & Ting, VP, 2017, '[Controlled formation of hierarchical metal-organic frameworks using CO<sub>2</sub> expanded solvent systems](#)'. *ACS Sustainable Chemistry and Engineering*, vol 5., pp. 7887-7893

[View complete publications list](#) in the University of Bristol publications system