

Aston Medal 2010

# Richard Evershed



Richard graduated from Trent Polytechnic, Nottingham, in 1978 with a BSc in Applied Chemistry, and then undertook a PhD in the Department of Chemistry, University of Keele, under the supervision of Professor David Morgan, investigating pheromones in social insects using GC and GC-MS. His PhD produced 18 peer reviewed publications, including details of the solventless solid sampling system used to introduce individual and multiple dissected insect glands directly into a packed column. In 1981 he was appointed to a

postdoctoral research position in the Organic Geochemistry Unit, School of Chemistry, University of Bristol, where he worked with Professors Geoffrey Eglinton and James Maxwell, developing GC/MS and HPLC methods for investigating porphyrins in crude oils and source rocks. This work utilised a fast scanning Finnigan 4000 quadrupole MS incorporating a state-of-the-art INCOS data system. The porphyrins were found to exist commonly in hugely complex mixtures of several hundred components and computerised data analysis revealed a wide range of homologous series which required high temperature techniques to enable them to elute by GC. Richard also used the CI facilities of the Finnigan 4000 to effect novel  $H_2$  CI analyses of free base and metalloporphyrins for structure elucidation. In 1984 he moved to the Department of Biochemistry, University of Liverpool, to manage a biochemical mass spectrometry unit. During this time he purchased one of the first triples quadrupoles in UK academia and worked with the new API techniques and on early versions of MaxEnt software.

In 1993 he was appointed to a Lectureship in School of Chemistry, University of Bristol, promoted to Reader, 1996, and awarded Chair of Biogeochemistry in 2000. At the heart of his research is the use of organic and stable isotope ratio MS to trace the molecular structures and/or isotopic signatures of key organisms on the Earth in fossil and living environments. His research falls into two distinct areas: (i) ancient biomolecules in archaeology, palaeontology and palaeoclimate reconstruction, and (ii) molecular level studies of organic matter cycling in soils. He has established track records in both of these fields as evidenced by his award of the Royal Society of Chemistry's Analytical Division *Theophilus Redwood Lecture*, "in recognition of a sustained contribution to research and teaching in analytical science" (2002) and in 2003 the Royal Society of Chemistry further recognised his achievements through their *Interdisciplinary Award* for "international recognition as an analytical organic geochemist and leading exponent of biomolecular archaeology who has revolutionised aspects of archaeological science...and advanced the understanding of biomolecules in fossils".

Richard is currently Director of Bristol Biogeochemistry Research Centre and the Bristol node of the NERC Life Sciences Mass Spectrometry Facility, and a member of the NERC Peer Review College. Most recently his achievements have been recognised through a Royal Society *Wolfson Research Merit Award* 2009. His current research output stands at >320 published works of which >250 are in peer reviewed journals including 13 in *Nature* and *Science* all of which have utilised various forms of MS. What is unique about Richard is his passion for promoting the use of MS in unconventional fields. As a result he has served on a wide range of advisory and peer review committees for the NERC, BBSRC, National Gallery, etc. He is active in promoting a wider interest in analytical chemistry, particularly MS, through archaeology and environmental science by contributing to numerous community events, public outreach activities, schools' lectures and presentations to local interest groups and his research has attracted considerable coverage from the international and national media.



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