

# Curriculum Vitae for Dr. Martin Andrew Edwards

Department of Chemistry, University Of Warwick, Coventry, UK.

## Education/Qualifications:

PhD Supervisors Prof. P R Unwin and Dr. A L Whitworth, University of Warwick, Molecular Organisation and Assembly in Cells Doctoral Training Centre (MOAC DTC) – 2004 –2008 (Viva December '08) – Thesis title: Development of electrochemical probe microscopy and related techniques

MSc in Mathematical Biology and Biophysical Chemistry, Awarded with High Distinction (top student), University of Warwick – 2003-4 Projects:  
Monte-Carlo Markov Chain techniques for assigning parameters to regulatory networks – Alex Morton (Statistics)  
Entrainment of rhythmic gene expression by the biological clock – Laszlo Kozma-Bognar/Andrew Millar (Biology)  
Development of a scanning ion conductance microscope (SICM) – Julie Macpherson (Chemistry)

MMath 1<sup>st</sup> class, University of Warwick, 1999-2003– Final year project title: Fixed Point Theorems – Omri Sarig (Mathematics)

## Career History

From 10/08 - Research Fellow, Department of Chemistry, University of Warwick - Understanding and exploiting the electron transfer capabilities of bacterial nanowires – Greg Challis and Julie Macpherson

## Membership of learned or professional societies:

I have membership of the Royal Society of Chemistry and the International Society of Electrochemistry.

## Research Supervision:

Joint supervisor of Antony Holmes for 8 week project as part of MSc course summer 2005.

Joint supervisor of Jaytry Metha for 8 week project as part of MSc course summer 2005.

## Teaching:

I currently provide support in classes run by Prof. Julie Macpherson and Prof. Patrick Unwin.

Previously 2002-2003 and 2005-2006 I have participated in the supervision of two groups (4 students) per year of 1<sup>st</sup> year undergraduate mathematicians. This involved the marking core assignments and providing 2 hours of tuition per week. This was within the mathematics department at the University of Warwick.

I performed the role of support class assistant for analysis to the department of mathematics at the University of Warwick during the Autumn term of 2000.

## Publications:

\*[1] Scanning electrochemical microscopy: principles and applications to biophysical systems M. A. Edwards, S. Martin, A. L. Whitworth, J. V. Macpherson and P. R. Unwin, *Physiol Meas* **2006**, 27, R63-R108. **18 Citations**

[2] [Visualisation and Modeling of the Hydrodynamics of an Impinging Microjet](#) E. Bitziou, N. C. Rudd, M. A. Edwards and P. R. Unwin, *Anal Chem* **2006**, 78(5), 1435-1443. **9 Citations**

[3] Quantitative visualization of passive transport across bilayer lipid membranes John Grime, Martin A Edwards, Nicola Rudd and Patrick Unwin, *Proceedings of the National Academy of Sciences* **2008**, 105(38), 14277-14282 **4 Citations**

[4] Reply to Missner et al.: Timescale for passive diffusion across bilayer lipid membranes John Grime, Martin A Edwards, and Patrick Unwin, *Proceedings of the National Academy of Sciences* **2008**, 105(52), E124 **0 Citations**

\*[5] Silver Particle Nucleation and Growth at Liquid/Liquid Interfaces: A Scanning Electrochemical Microscopy (SECM) Approach Fei Li,<sup>†</sup> Martin A. Edwards,<sup>†</sup> and Patrick R. Unwin, *J Phys Chem C* **2009**, 113(9), 3553-3565 **0 Citations**

\*[6] Scanning Micropipet Contact Method (SMCM) for High Resolution Imaging of Electrode Surface Redox Activity - Cara G. Williams,<sup>†</sup> Martin A. Edwards,<sup>†</sup> Anna L. Colley, Julie V. Macpherson and Patrick R. Unwin *Anal Chem* **2009** 81(7) 2486-2495 **0 Citations**

\*[7] Slow Diffusion Reveals the Intrinsic Electrochemical Activity of Basal Plane Highly Oriented Pyrolytic Graphite (HOPG) Electrodes, Martin A. Edwards, Paolo Bertonecello, and Patrick R. Unwin **Accepted:** *Journal of Physical Chemistry C*

\*[8] A realistic model for the current response in scanning ion conductance microscopy (SICM): implications for imaging - Martin A. Edwards, Anna L. Whitworth and Patrick R. Unwin – **Accepted:** *Anal Chem*

\*[9] Towards a Quantitative Understanding of Tip Position Modulation Scanning Electrochemical Microscopy (TPM-SECM) - Martin A. Edwards, Anna L. Whitworth and Patrick R. Unwin – **Article in preparation.** Target journal: *Anal Chem*

[10] Theoretical Insights into the Measurement of Bilayer Permeability - John M. A. Grime, Martin A. Edwards and Patrick R. Unwin – **Article in preparation.** Target journal: *Biophys J*

## National and International Recognition:

Joint prize for best talk at the Edinburgh 2007 life sciences interface joint doctoral training centre student conference.

Royal Society of Chemistry Bursary for the attendance of UK BioNano 3 (2005)

Invited presentation at UK-Israel Workshop on Bioengineering and Biophysics, Tel Aviv, Israel (2008)

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\* Indicates lead authorship

† Joint lead authors

American Study and Student Exchange Committee (ASSEC) Graduate Student and Post-doctoral Fellow Travel Fund – bursary awarded for the attendance and presentation of a talk at the 5<sup>th</sup> Scanning Electrochemical Microscopy Workshop (2008)

**Date Curriculum Vitae Prepared:**

22nd April 2009