

## John W. Nolan, B.Sc., Ph.D.

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**Date of Birth:** 17<sup>th</sup> May 1977

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### Education

**October 1998 – September 2002 University of Nottingham**

**Doctor of Philosophy:** Thesis title: “**Contacting and Imaging Nanostructures on Si Surfaces**” A four-year postgraduate course focusing on research in nanotechnology, surface science, semiconductor physics, instrument development and software design.

**September 1994 – July 1998 University of Essex/Carlow Institute of Technology**

**Hons. Bachelors of Science Optoelectronics 2(1)**

A four-year combined course started at the Carlow Institute of Technology (Ireland) in 1994 and completed at the University of Essex, 1997–1998.

**September 1988 – July 1994 Carlow Vocational Secondary School**

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### Publications

- “**Development of innovative mercury intrusion technique to examine defects plugging after CVD treatment of NF composite membranes**”, A. Lambropoulos, G.E. Romanos, J. Nolan, F.K. Katsaros, E. Kouvelos, Th. Steriotis and N.K. Kanellopoulos, *J. Porous Materials*, **15**, 83–91, 2008.
- “**Preparation, characterization and gas permeation properties of carbon hollow fiber membranes based on Matrimid® 5218 precursors**”, E.P. Favvas, G.C. Kapantaidakis, J.W. Nolan, A. Ch. Mitropoulos and N.K. Kanellopoulos, *Journal of Materials Processing Technology*, **186**, 102–110, 2007.
- “**Application of an innovative mercury intrusion technique and relative permeability to examine the thin layer pores of sol-gel and CVD post-treated membranes**” A. Lambropoulos, G. Romanos, Th. Steriotis, J. Nolan, F. Katsaros, E. Kouvelos, G. Charalambopoulou and N. Kanellopoulos, *Microporous and Mesoporous Materials*, **99**, 206–215 2007.
- “**Method for the preparation of oxygen transporting membrane with shape selective molecular sieve coating for selective partial and total oxidation of organic and inorganic compounds**”, J. Caro, H. H. Wang, M. Noack, P. Köhlsch, F. Kapteijn, N. Kanellopoulos and J. Nolan”, Patent EP04078484.5, Europe, 2007.
- “**Heavy metal sorption by calcium alginate beads from Laminaria digitata**”, Papageorgiou, S.K., Katsaros, F.K., Kouvelos, E.P., Nolan, J.W., Kanellopoulos, N.K., Le Deit, H., *Journal of Hazardous Materials*, Volume 137, Issue 3, **1765–1772**, 2006.
- “**Adsorption and manipulation of endohedral and higher fullerenes on Si(100)–2x1**”, M. J. Butcher, J.W. Nolan, M.R.C. Hunt and P. H. Beton, L. Dunsch, P. Kuran and P. Georgi, T.J.S. Dennis, *Phys. Rev. B* **67**, **125413**, 2003.

- **“Contacting and Imaging Nanostructures on Si Surfaces”**, John W. Nolan, thesis available from the University of Nottingham library.
- **“Orientationally ordered island growth of higher fullerenes on Ag/Si(111)-( $\sqrt{3}\times\sqrt{3}$ )R30°”**, M.J. Butcher, J.W. Nolan, M.R.C. Hunt, P.H. Beton, L. Dunsch, P. Kuran, P. Georgi, T.J.S. Dennis, Phys. Rev. B, 64, **195401**, 2001.
- **“The Tensiograph – A novel instrument for the fingerprinting and analysis of multiple physical attributes of beer”**, N.D. McMillan, M. Redding, R. Jordan, D. Phillips, D. Goff, J. Nolan, R. Harnedy, W. Mitchell, J. Harkin and L.R.L. McMillan, J. Inst. of Brewing, 106 No. 3, **147**, 2001.
- **“The application of the tensiograph D-functions to quality control in whiskey manufacture”**, N.D. McMillan, V. Lawlor, J.W. Nolan, W.Y. Lo, R. Harnedy, M. O’Neill, Colloids and Surfaces A: Physicochemical and Engineering Aspects, 143, **421**, 1998.
- **“The applications of the tensiograph D-functions to quality control in whiskey manufacture”**, N.D. McMillan, V. Lawlor, J. Nolan, W.Y. Lo, R. Harnedy and M. O’Neill, Proceedings of the Optical Engineering Society of Ireland, Ed. C. Hussey, Vol.1, **77–82**, 1996.

### Awards / Distinctions

- Receipt of John Tyndall award for the best project with title **“Thin Reflective Films”** from the Institute of Technology, Carlow, 1997.
- Receipt of Award for ‘The best designed and implemented project’ for Applied Physics Certificate project, from the Institute of Technology, Carlow, 1996.
- Receipt of the Student of the Year Award 1993/1994 from the Vocational School, Carlow.

### Skills

#### IT Skills

- Knowledge of following programming languages: C, Pascal, National Instruments LabVIEW, HTML (web), ASP.NET, Cocoa (Mac OSX) and Cocoa Touch (iPhone) in Objective-C and PHP and Python. Development of games for mobile devices in Open GL ES.
- Use of the following OS/packages: MS Windows (up to 7), Apple OSX Leopard and Snow Leopard, Linux (OpenSUSE, Fedora, Ubuntu, etc.), MS Office (in both MS Windows and OSX), Apple iWorks and iLife, MathCAD, CorelDraw and Paint Shop Pro, Adobe Photoshop, Illustrator and Acrobat, Autodesk AutoCAD, 3D Studio Max and Maya, Maxon Cinema 4D, Newtek Lightwave, Blender ([www.blender.org](http://www.blender.org)), Adobe Dreamweaver & Fireworks and Microlocal Origin, and web browsers Internet Explorer, Mozilla Firefox, Apple Safari, Google Chrome and Opera. Indept knowledge of the Digital Audio Workstations Apple’s Logic Pro and Ableton.
- Excellent knowledge of Windows, Linux, Max OSX (Unix).
- Excellent knowledge of Microsoft’s Developer Studio and Apple’s XCode.
- Knowledge and experience of database development and access using MS Access and MySQL, and phpMyAdmin.
- Knowledge of the Drupal and Joomla! Content Managements Systems, including setup, maintenance, and module development.

## **Technical Skills**

- Experience with surface science and nanotechnology techniques such as ultra high vacuum, scanning probe microscopy, scanning electron microscopy, chemical vapour deposition and molecular beam epitaxy.
- Experience in the fabrication and electrical characterisation of electronic devices in a clean room environment.
- Excellent knowledge of the construction of PCs and their components.
- Certified Training in Atomic Force Microscopy, X-Ray Diffraction, Proteomics and Neutron Scattering and Diffraction.

## **Work Experience**

### **January 2012 – : Kavala Institute of Technology**

NANOCAPILLARY Thalys Project, a 4-year EU/Greek funded project focusing on the use of in situ Small Angle X-Ray Scattering and adsorption for the characterisation of porous materials, and the development of SAXS simulation and analysis software.

### **June – July 2011: Software consultant to Drop Technology Ltd., Carl Stuart Group, Dublin, Ireland.**

Windows C/C++ development of a hardware driver and an installer/uninstaller for the driver and Drop Technology's TLDA acquisition software.

### **January 2010 – present: Self employed**

Development of mobile games for Apple's iPhone, iPod Touch and iPad. Bengie's Maze Escape was released on Apple's App store in December 2010. The game was developed in Objective-C and OPEN GL ES using XCode.

### **September 2010 – present: Kavala Institute of Technology**

Web development on two programmes: Structure of Employment and Career (DASTA) and Quality Assurance Unit of Higher Education (MODIP). Both programmes involve development of web forms in PHP and Drupal's abstraction layer and relational databases in MySQL.

### **October 2007 – : Kavala Institute of Technology**

Collaboration with the president of the Institute of Technology in order to expand on their research capabilities through fostering of relationships and partnerships with EU experts, and also through applications for National and EU funding. I also perform material analysis using Scanning Electron Microscopy and energy-dispersive X-ray spectroscopy (EDX) in the Advanced Electromagnetic & Optical Laboratory, serving the Departments of Petroleum Engineering, Electrical Engineering and Science.

### **May 2003 – JULY 2009: NATIONAL CENTER FOR SCIENTIFIC RESEARCH "DEMOKRITOS"**

Research position with the Materials & Membranes for Environmental Separations Laboratory at the Institute of Physical Chemistry

Responsibilities:

- Characterising nanoporous materials for application in environmental separations using advanced techniques such as Atomic Force Microscopy and Scanning Electronic Microscopy.
- Training of Ph.D. students and post-doctoral researchers in use of the Atomic Force Microscope.

- Applications for EU funding, including Networks of Excellence, Integrated Projects, Marie Curie Research Training Networks, Coordinating & Support Actions and ICT Infrastructure.
- Development and maintenance of the laboratory's webpage at [mesl.chem.demokritos.gr](http://mesl.chem.demokritos.gr).
- Participant in the INSIDE-PORES Network of Excellence, an EU funded project specialising in the synthesis, characterisation, modelling and application of porous materials, with the following tasks:
  - Deployment and maintenance of ISABEL, a Linux-based tele-conference/tele-lecture system, among fifteen of the INSIDE-PORES partners. The system was used daily to facilitate the integration of the partners' research activities;
  - Authoring of the yearly reports, each years' Description of Work, completed deliverables and the minutes of the Executive Board meetings, as Executive Board secretary;
  - Coordinator's contact point for all partners;
  - Maintenance of the INSIDE-PORES IT knowledge database on the INSIDE-PORES data server: this involves SSH and FTP updating and archiving of all electronic data relevant to the NoE, including contacts database, publications, minutes of meetings, programme of activities, deliverables and reports. All this data is available to the INSIDE-PORES partners through a web interface running on the server;
  - Routine maintenance and update of the INSIDE-PORES webpage at [www.pores.gr](http://www.pores.gr);
  - Development and maintenance of the INSIDE-PORES Instruments Processes/Materials Databases and its web interface. The database was developed in MS Access, and the web-based database front end in ASP.NET 2.0 through C#;
  - Production of promotional materials for the NoE.

### **March 2003 – May 2003: Elizabeth Michael Associates Temping Agency**

During this time I was placed in the office of Nottinghamshire Training Organisation (NTO), a part of Nottinghamshire County Council.

Responsibilities: Developing and updating NTO's employment database (developed in MS Access), and acting as interface between employers and potential employees.

### **November/December 2002: University of Nottingham**

Software consultant

Responsibilities: Development of a LabVIEW program for measurement of Hall characteristics of wafers grown at the University of Nottingham.

### **November 2001 – January 2002: University of Nottingham**

Research assistant working with the SPM Group.

Responsibilities: Training new Ph.D. students on use of the group's Ultra High Vacuum system, for growth and characterisation of nanostructured devices.

**September 1998 – May 2002: University of Nottingham**

Student demonstrator within the physics department.

Responsibilities: Demonstrating electronics and analytical skills to first year undergraduate students, and providing assistance to third year students in their projects.

**June – August 1998: University of Essex**

Duties included maintenance of two accommodation towers at the University.

**August – October 1998 and July – September 1997: Droptech Ltd.**

Research assistant.

Responsibilities:

- Software and hardware development of the “Fibre Drop Analyzer”, now commercially released as the Droptech Poly-Dropanalyser (PDA)
- Characterisation of sun-screen to determine the relevant protection factors.

**June – July 1995 and June – July 1996: Teagasc National Research Centre**

Assistant technician

Responsibilities: Application of GPS tracking of crop harvesting and the cross pollination of potato plants.

## Referees

**Prof. A. Mitropoulos,**

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**Dr. Nick Kanellopoulos,**

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