



PUBLICATIONS 2012

BOOKS AND CHAPTERS IN BOOKS, JOURNAL PUBLICATIONS, KEYNOTE AND INVITED LECTURES, CONFERENCE PRESENTATIONS, CONFERENCE PROCEEDINGS AND PATENTS

BOOKS AND CHAPTERS IN BOOKS

Ahmad, H., T. M. Young, D. Toal and E. Omerdic. 2012. Application of Evolutionary Computing in Control Allocation. In: *Advances in Flight Control Systems*. Publisher InTech, Austria, pp. 77-92. ISBN: 978-953-307-218-0.

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KEYNOTE AND INVITED LECTURES

Buckley, D. N. 2012. In-Situ Measurements of Stress During Electrochemical Deposition of Copper Nanofilms. *Department of Chemical Engineering, Texas A & M University, USA*, 4 May. Invited lecture.

Hampshire, S. 2012. Silicon Nitride – Grain Boundary Oxynitride Glass Interfaces: Deductions from Glass Bulk Properties. *ICCCI2012, 4th International Conference on the Characterization and Control of Interfaces for High Quality Advanced Materials*, Kurashiki, Japan, 2-5 September. Invited lecture.

Hampshire, S. 2012. SiAlON Bulk Glasses and Grain Boundaries: Composition-Structure-Property Relationships. *ISASC2012, 3rd International Symposium on New Frontiers of Advanced Si-Based Ceramics and Composites*, Seoul, South Korea, 25-28 March. Invited lecture.

Hampshire, S. 2012. Silicon Nitride Ceramics and the Role of Oxynitride Glasses. *Université de Valenciennes et du Hainaut-Cambresis, LMP Maubeuge, France*, 6 March. Invited presentation.

Magner, E. 2012. Electrochemical Properties of Redox Enzymes: Applications in Biofuel Cells and Biosensors. *63rd International Society of Electrochemistry Meeting: Electrochemistry for Advanced Materials*, Prague, Czech Republic, 19-24 August. Oral invited.

Magner, E. 2012. Development of Commercially Successful Biosensors. *Silesian University of Technology, Poland*, 7 March. Invited lecture.

Magner, E. 2012. Immobilisation of Enzymes for Biocatalytic Applications. *Silesian University of Technology, Poland*, 7 March. Invited lecture.

Magner, E. 2012. Immobilisation of Redox Enzymes on Electrodes for Biofuel Cells and Biosensors. *Silesian University of Technology, Poland*, 6 March. Invited lecture.

Meaney, C. L. 2012. Human Aortic Endothelial Cell and Smooth Muscle Cell Response to Scaffold and Shear Stress Conditioned Media: A Proliferation, Migration and Co-culture Real Time Cell Analysis. *Roche Applied Sciences Ltd, xCELLigence User Group Meeting, University of Glasgow, Scotland*. 18-19 June. Invited talk.

O'Dowd, N. P. and D. F. Li. 2012. Microscale Modelling and Characterisation of Austenitic and Ferritic Steels for Fossil Fuel and Nuclear Power Plant Applications. *The Asian Pacific Conference on Fracture and Strength-Mechanics and Materials*, Busan, Korea, 13-16 May. Keynote speech.

O'Dowd, N. P., D. F. Li, C. M. Davies and S. Y. Zhang. 2012. The Prior Deformation Effect on the Subsequent Lattice Strain Evolution at Elevated Temperature. *IUTAM Symposium on Advanced Materials Modelling for Structures*, Paris, France, 23-27 April. Keynote speech.

Ryan, K. M. 2012. Solution Growth and Assembly of Nanorods and Nanowires for Advances in Thin Film PV and Lithium Ion Batteries. *Electrochem2012, Trinity College Dublin, Dublin*, 2-4 September. Keynote speech.

Ryan, K. M. and A. Singh. 2012. The Colloidal Synthesis of Quaternary Copper Zinc Tin Tetrasulphide (CZTS) Nanorod Absorbers and their Large Scale Assembly from Solution. *Smart Surfaces 2012 – Solar & BioSensor Applications*, Alexander Hotel, Dublin, 6-9 March. Invited oral presentation and organising committee member.

Soulimane, T. 2012. Bioenergetics at Extreme Temperature: Structure and Function of *Thermus* Terminal Oxidases. Recent Developments on the Study of Membrane Proteins, Membranes and Peptides. *A Workshop of the German-French PhD College, Membranes and Membrane Proteins, UFA 0407, Strasbourg*, 30 November. Keynote speaker.

Soulimane, T. 2012. Crystal Structures of *Thermus* Terminal Oxidases. *The Royal Society of Chemistry (RSC) Republic of Ireland, All-Ireland Symposium, University College Dublin*, 8 November. Invited oral presentation.

Soulimane, T. 2012. Structure of caa(3)-cytochrome c Oxidase: A Nature-made Enzyme-substrate Complex. *17th European Bioenergetics Conference, Freiburg*, 15-20 September. Invited oral presentation.

CONFERENCE PRESENTATIONS

Presenter Indicated in Bold

Bezuidenhout, M. 2012. Germanium Nanowires for Cell Biology. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.

Broderick, S., B. Doyle and M. T. Walsh. 2012. Geometric Reconstruction in a Surgical Environment Using Photogrammetry: From Inception to Application. *Bioengineering in Ireland 18*, Queen's University, Belfast, 27-28 January. Oral presentation.

Browne, L., P. Griffin and M. T. Walsh. 2012. Quantifying Turbulent Wall Shear Stress in an Arteriovenous Graft Using Large Eddy Simulation. *Global Enterprise for Micro-mechanics and Molecular Medicine Summer School, GEM4*, Imperial College, United Kingdom, 10-14 September. Poster presentation.

Browne, L., P. Griffin and **M. T. Walsh**. 2012. Quantifying Turbulent Wall Shear Stress in an Arteriovenous Graft Using Large Eddy Simulation. *American Society of Mechanical Engineering Summer Bioengineering Conference, ASME 2012*, Fajardo, Puerto Rico, USA, 20-23 June. Poster presentation.

Browne, L., P. Griffin and M. T. Walsh. 2012. Preliminary Investigation of Large Eddy Simulation Technique for Simulating Transitional-turbulent Flow at the Venous Anastomosis of an Arteriovenous Graft. *Bioengineering in Ireland 18*, Queen's University, Belfast, 27-28 January. Oral presentation.

Bulushev, D. A., L. Jia, S. Beloshapkin and **J. R. H. Ross**. 2012. Hydrogen from Decomposition of Biomass Derived Formic Acid over Pd/C Catalysts Doped by Alkali Metals. *International Conference on Advances in Catalysis for Biomass Utilisation*, Thessaloniki, Greece, 8-11 July. Oral presentation.

Bulushev, D. A., L. Jia, S. Beloshapkin and **J. R. H. Ross**. 2012. Heterogeneous Catalysts for Effective Hydrogen Production from Biomass Derived Formic Acid. *15th World Congress of Catalysis*, Munich, Germany, 1-6 July. Poster presentation.

Bulushev, D. A., L. Jia, S. Beloshapkin and J. R. H. Ross. 2012. Effective Hydrogen Production from Biomass Derived Formic Acid on K-doped Pd/C Catalysts. *243rd ACS National Meeting*, San Diego, USA, 25-29 March. Oral presentation.

Çalışkan, F., Z. Tatlı and S. Hampshire. 2012. Influence of Incorporation of Fluorine as a New Modifier to Traditional Oxide Additive Systems on Densification and α to β Transformation of Si_3N_4 . *ISNT2012 – 7th International Conference on Nitrides*, Saint Malo, France, 3-6 June. Poster presentation.

Cheuk, C. and Å. C. Rasmuson. 2012. Crystallisation Properties of 1,4-dihydroxyanthraquinone. *10th International Meeting on the Crystal Growth of Organic Materials*, University of Limerick, Limerick, 11-14 June. Poster presentation.

Cooney, J. 2012. Structural Insights into a Highly Specific Protease. *Inaugural Meeting of the Irish Crystallographic Association*, Crown Plaza Hotel, Dublin, 6 September. Oral presentation.

Costelloe, J., L. Browne, A. Lynch, L. Morris and M. T. Walsh. 2012. Computational Fluid Dynamics Challenge: Solutions Obtained Using Two Commercial Finite Volume Solvers. *Global Enterprise for Micro-mechanics and Molecular Medicine Summer School, GEM4*, Imperial College, United Kingdom, 10-14 September. Poster presentation.

Costelloe, J. and M. T. Walsh. 2012. An Investigation into the Effect of Inflow Boundary Conditions on the Pressure Drop Across a Giant Cerebral Aneurysm. *Bioengineering in Ireland 18*, Queen's University, Belfast, 27-28 January. Oral presentation.

Coughlan, C., A. Singh, D. Kelly, T. Kennedy, H. Geaney, E. Mullane, T. O'Connor, S. Singh and K. M. Ryan. 2012. Synthesis of Ternary and Quaternary I-III-VI₂ Semiconductor Nanocrystals for Integration into Low-Cost Solar Cells. *Smart Surfaces 2012 – Solar & BioSensor Applications*, Alexander Hotel, Dublin, 6-9 March. Poster presentation.

Cronin, P. 2012. Nanoparticle Incorporation to Thermoplastic Textiles for Antibacterial Applications. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.

Cunnane, E., J. Mulvihill, B. O'Connell and M. T. Walsh. 2012. Development of an Experimental Model of the Carotid Baroreceptors Using an Electrically Conductive Elastomer. *Bioengineering in Ireland 18*, Queen's University, Belfast, 27-28 January. Oral and poster presentation.

Daniels, E., D. Madden, W. Reimann and T. Curtin. 2012. Development of Amine Solids for the Capture of Carbon Dioxide from Gaseous Streams. *7th International Conference on Environmental Catalysis*, Lyon, France, 2-6 September. Poster presentation.

Daniels, E. and T. Curtin. 2012. Development of Amine Solids for the Capture of CO₂ from Gas Streams. *22nd Irish Environmental Researchers' Colloquium, ENVIRON 2012*, University College Dublin, 7-9 March. Poster presentation.

Denny, W. J., B. M. O'Connell, J. Milroy and M. T. Walsh. 2012. Analysis of the Validity of Fick's 2nd Law as a Governing Equation for Diffusive Mass Transport in the Artery Wall. *Bioengineering in Ireland 18*, Queen's University, Belfast, 27-28 January. Oral presentation.

Dooley, S. 2012. Energy Efficient Combustion. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.

Egan, B. 2012. High Speed Testing of Composite Aircraft Joints. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.

Farragher, T. P., N. P. O'Dowd, S. Scully, C. J. Hyde, W. Sun and S. B. Leen. 2012. High Temperature Low Cycle Fatigue Behaviour of Service-aged P91 Material. *9th International Conference on Creep and Fatigue at Elevated Temperatures*, London, United Kingdom, 25-27 September. Oral presentation.

Gandhi, A. A., S. Robin, T. Soulimane and S. A. M. Tofail. 2012. Selective Protein Absorption on Electrically Modified Hydroxyapatite: Probing with a Kelvin Force Probe and Confocal Microscope. *65th IUUSTA Workshop*, Peckforton Castle, Cheshire, United Kingdom, 14-18 May. Oral presentation.

Gao, X., R. P. Lynch, M. J. Leahy and **D. N. Buckley**. 2012. Coulombic Efficiency of a Vanadium Redox Flow Cell. *PRiME, Pacific Rim Meeting on Electrochemical and Solid State Science, Symposium B1: Batteries and Energy Technology Joint General Session*, Honolulu, Hawaii, USA, 7-12 October. Oral presentation.

Gao, X., M. J. Leahy and **D. N. Buckley**. 2012. Spectroscopic Study of the Catholyte in a Vanadium Redox Flow Battery. *221st Electrochemical Society Meeting, Symposium B2: Large Scale Electrochemical Energy Storage I*, Seattle, Washington, USA, 6-10 May. Oral presentation.

Gaughan, S., B. Doyle and T. M. McGloughlin. 2012. A Phantom Based Investigation into the Use of 3D Ultrasound for Vascular Reconstructions – A Repeatability Study. *Biomedical Engineering Society Annual Meeting*, Atlanta, Georgia, USA, 24-27 October. Poster presentation.

Gaughan, S., B. Doyle and T. M. McGloughlin. 2012. Developing a Process for the Conversion of 2D Ultrasound Images to 3D Reconstructions for Use in Vascular Applications. *Sylvester O'Halloran Surgical Scientific Meeting*, University of Limerick, 2-3 March. Poster presentation.

Gaughan, S., B. Doyle and T. M. McGloughlin. 2012. Development of Image Processing Techniques of 2D Ultrasound Images for 3D Reconstruction. *Bioengineering in Ireland 18*, Queen's University, Belfast, 27-28 January. Oral presentation.

Geaney, H. 2012. Germanium Nanowire Growth by Self-induced Solid Seeding. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.

Geaney, H., C. Dickinson and K. M. Ryan. 2012. High Density Germanium Nanowire Growth Directly from Copper Foil by Self-induced Solid Seeding. *243rd American Chemical Society National Meeting and Exposition*, San Diego, California, USA, 25-29 March. Oral presentation.

Geaney, H. and K. M. Ryan. 2012. Controlled Growth of Si Nanowires using a Simple Solution Based Approach. *243rd American Chemical Society National Meeting and Exposition*, San Diego, California, USA, 25-29 March. Poster presentation.

Golden, B., D. F. Li, C. Dickinson, N. P. O'Dowd and P. Tiernan. 2012. Multiscale Material Models for Structural Integrity of Conventional Power Plants. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.

Golden, B., D. F. Li, C. Dickinson, N. P. O'Dowd and P. Tiernan. 2012. Micromechanical Characterisation of P91 Martensitic Steels Used for Power Generations. *15th Annual Sir Bernard Crossland Symposium*, Dublin City University, Dublin, 28-29 March. Poster presentation.

Golden, B., D. F. Li, C. Dickinson, N. P. O'Dowd and P. Tiernan. 2012. Micromechanical Characterisation of P91 Martensitic Steels Used for Power Generations. *NUI Galway Energy Night 'Putting Energy to Work for Ireland'*, NUI Galway, Galway, 6 March. Poster presentation.

Hampshire, S., Z. Lyons, R. Guang, C. Crowley and M. J. Pomeroy. 2012. Effects of Nitrogen and Fluorine on Properties of Sr-aluminosilicate Glasses. *ISNT2012 – 7th International Conference on Nitrides*, Saint Malo, France, 3-6 June. Oral presentation.

Hoey, D. A., S. Tormey, F. J. O'Brien and C. R. Jacobs. 2012. Fluid Flow Sensing via the Primary Cilium in Human Mesenchymal Stem Cells. *Exciting Biologies: Forces in Biology*, Dublin, 4-6 October. Poster presentation.

Hoey, D. A. 2012. The Role of the Primary Cilium in Bone Mechanobiology. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.

Hutton, K., C. Ó Ciardhá and P. Frawley. 2012. Population Balance Modelling of A Continuous Crystallisation Anti-solvent Cascade. *10th International Meeting on the Crystal Growth of Organic Materials*, University of Limerick, 11-14 June. Poster presentation.

Hyde, C. J., W. Sun, T. H. Hyde, J. P. Rousse, T. Farragher, N. P. O'Dowd and S. B. Leen. 2012. Cyclic Visco-plasticity Testing and Modelling of a Service-aged P91 Steel. *ASME Pressure Vessels and Piping Division Conference*, Toronto, Ontario, Canada, 15-19 July. Oral presentation.

Joyce, J. T., D. N. Buckley and C. Silien. 2012. Photocurrent Generation in Metal-organic Coordination Polymer Thin Films. *ECOSS 29, European Conference on Surface Science*, Edinburgh, 3-7 September. Oral presentation.

Korostynska, O., A. A. Gandhi, A. Mason, A. Al-Shamma'a and S. A. M. Tofail. 2012. Biomedical Sensing with Hydroxyapatite Ceramics in GHz Frequency Range. *International Conference on Materials and Applications for Sensors and Transducers (IC-MAST)*, Budapest, Hungary, 24-28 May. Oral presentation.

Kennedy, T., H. Geaney, E. Mullane and K. M. Ryan. 2012. Group IV Nanowire Growth Using a Novel Solvent Vapour Growth System. *Intel Ireland Research Conference 2012*, Croke Park, Dublin, 3-4 October. Poster presentation.

Kennedy, T., H. Geaney, E. Mullane and K. M. Ryan. 2012. High Performance Lithium-ion Battery Anodes Using Germanium Nanowires Grown Directly on a Copper Current Collector. *Electrochem 2012*, Trinity College Dublin, Dublin, 2-4 September. Poster presentation.

Kelly, D., A. Singh, C. A. Barrett, C. O'Sullivan, C. Coughlan, F. Laffir, C. O'Dwyer and K. M. Ryan. 2012. Facile Spin-cast Route for Cation Exchange of Multilayer Perpendicularly-aligned Nanorod Assemblies. *243rd American Chemical Society National Meeting and Exposition*, San Diego, California, USA, 25-29 March. Oral presentation.

Kelly, D., A. Singh, C. A. Barrett, C. O'Sullivan, C. Coughlan, F. Laffir, C. O'Dwyer and K. M. Ryan. 2012. A Facile Spin-cast Route for Cation Exchange of Multilayer Perpendicularly-Aligned Nanorod Assemblies for Solar Cell Applications. *Smart Surfaces 2012 – Solar & BioSensor Applications*, Alexander Hotel, Dublin, 6-9 March. Oral presentation.

Kuhs, M. 2012. Polymorphism. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.

Kuhs, M., J. Zeglinski, J. Karpinska and Å. C. Rasmuson. 2012. Crystallization Properties of Fenoxycarb. *10th International Meeting on the Crystal Growth of Organic Materials*, University of Limerick, Limerick, 11-14 June. Poster presentation.

Kumbham, M., N. Liu, N. Hendaoui, S. A. M. Tofail, A. Peremans and C. Silien. 2012. Far-field Infrared Absorption Microscopy Beyond Diffraction Limit. *Nanoweek Conference: Nanoscience Excellence with Impact*, Dublin, 17-18 September. Poster presentation.

Leahy, J. J., G. Xue, M. Kwapinska and W. Kwapinski. 2012. Torrefaction of *Miscanthus x giganteus*. *International Workshop of Biomass Torrefaction for Energy*, Ecole des Mines d'Albi, France, 10-11 May.

Laffir, F., B. Singh and E. Dempsey. 2012. Surface Chemistry of Pt Based Mono/bi/tri Metallic Nanocomposites on Different Carbon Supports Probed using XPS. *243rd American Chemical Society National Meeting and Exposition*, San Diego, California, USA, 25-29 March. Oral presentation.

Lynch, A. G. and M. T. Walsh. 2012. Perioperative Complications During Carotid Angioplasty and Stenting. *Bioengineering in Ireland 18*, Queen's University, Belfast, 27-28 January. Oral presentation.

Lynch, R. P., N. Quill, C. O'Dwyer and **D. N. Buckley**. 2012. Mathematical Model for <111>A Pore Propagation and Relation to Current for InP in Aqueous KOH Electrolytes. *PRiME, Pacific Rim Meeting on Electrochemical and Solid State Science, Symposium D7: Pits and Pores 5*, Honolulu, Hawaii, USA, 7-12 October. Oral presentation.

Lynch, R. P., N. Quill, C. O'Dwyer, S. Nakahara and **D. N. Buckley**. 2012. Why <111>A Pore Propagation Occurs in InP and the Mechanism that Dictates Pore Width. *PRiME, Pacific Rim Meeting on Electrochemical and Solid State Science, Symposium E15 SOTAPOCS 54, State-of-the-Art Program on Compound Semiconductors 54*, Honolulu, Hawaii, USA, 7-12 October. Oral presentation.

Madden, D., E. Daniels and T. Curtin. 2012. Amine Modified Zeolites as Low Temperature CO₂ Sorbents. *7th International Conference on Environmental Catalysis*, Lyon, France, 2-6 September. Poster presentation.

Madden, D., E. Daniels and T. Curtin. 2012. Hybrid Porous Solids for Carbon Dioxide Capture. *64th Irish Universities Chemistry Research Colloquium*, University of Limerick, 14-15 June. Oral presentation.

Madden, D. and T. Curtin. 2012. Microporous Solids for Low Temperature Carbon Dioxide Adsorption. *Smart Surfaces 2012 – Solar & BioSensor Applications*, Alexander Hotel, Dublin, 6-9 March. Poster presentation.

Maher, A., Å. C. Rasmuson, C. C. Seaton, D. M. Croker and B. K. Hodnett. 2012. Solution Mediated Polymorphic Transformation of Piracetam. *10th International Meeting on the Crystal Growth of Organic Materials*, University of Limerick, Limerick, 11-14 June. Oral presentation.

- Meaney, C. L.** 2012. Vascular Graft Development: Cell-material Interactions. *1st Annual Limerick Postgraduate Conference*, Mary Immaculate College, Limerick, 13 June. Oral presentation.
- Meaney, C. L.**, G. T. Carroll and T. M. McGloughlin. 2012. Cell-material Interactions: Assessment of Compatibility and Performance. *UL-NUI Galway Alliance Research Day*, University of Limerick, 3 April. Oral and poster presentation.
- Meaney, C. L.**, G. T. Carroll and T. M. McGloughlin. 2012. The Study of Cell-material Interactions under Physiological Flow Regimes. *Bioengineering in Ireland 18*, Queen's University, Belfast, 27-28 January. Oral presentation.
- Melligan, F., J. J. Leahy, M. H. B. Hayes and W. Kwapinski. 2012. Hydro-pyrolysis of Biomass and On-line Catalytic Vapour Upgrading with Ni-ZSM-5 and Ni-MCM-41. *UBIOCHEM-III: Sustainable Production of Fuels/energy, Materials & Chemicals from Biomass, 3rd International Workshop of COST Action CM0903*, Thessaloniki, Greece, 1-3 November.
- Melligan, F., W. Kwapinski, J. J. Leahy and M. H. B. Hayes. 2012. Hydro-Pyrolysis GC/MS of Miscanthus x giganteus with Ni-ZSM-5 and Ni-MCM-41. *Cat4Bio, International Conference on Advances in Catalysis for Biomass Valorization*, Thessaloniki, Greece, 8-11 July.
- Melligan, F., J. J. Leahy, M. H. B. Hayes and W. Kwapinski. 2012. Py-GC/MS of Miscanthus with Ni-ZSM-5 and Ni-MCM-41 Under a Hydrogen Atmosphere. *19th International Symposium on Analytical and Applied Pyrolysis*, Linz, Austria, 21-25 May.
- Mercier, C.**, A. Bachar, S. Hampshire, C. Follet-Houttemane, A. Tricoteaux, M. Saadi and A. Leriche. 2012. Synthesis and Characterization of Oxynitride and Oxyfluoronitride Bioglasses. *ISNT2012 – 7th International Conference on Nitrides*, Saint Malo, France, 3-6 June. Oral presentation.
- Modi, D.** 2012. An Overview of Current IComp Projects. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.
- Mooney, R.**, A. Piterina, M. T. Walsh and T. M. McGloughlin. 2012. Automated Decellularisation of Extracellular Matrix (ECM) Scaffolds: An In-vitro Feasibility Study. *Bioengineering in Ireland 18*, Queen's University, Belfast, 27-28 January. Oral presentation.
- Mullane, E. and K. M. Ryan. 2012. Size Controlled Growth of Germanium Nanorods and Nanowires by Solution Pyrolysis Directly on a Substrate. *63rd Irish Universities Chemistry Research Colloquium*, University of Limerick, Limerick, 14-15 June. Oral presentation.
- Mulvihill, J.** and M. T. Walsh. 2012. Experimental Determination of Circumferential Mechanical Properties of Fresh and Frozen Carotid Artery Plaques: The Influence of Boundary Parameters. *8th European Solid Mechanics Conference, ESMC 2012*, Graz, Austria, 9-13 July. Oral presentation.
- Mulvihill, J.** and M. T. Walsh. 2012. Experimental Determination of Circumferential Mechanical Properties of Fresh and Frozen Carotid Artery Plaques. *Bioengineering in Ireland 18*, Queen's University, Belfast, 27-28 January. Oral presentation.
- McCarthy, C.** 2012. Micromechanical Characterisation of Composite Materials. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.
- McGrail, T.** 2012. Composite Materials: Research Challenges. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.
- McNamara, K.**, O. Kolaj-Robin, S. Belochapkine, A. A. Gandhi, J. Butler and S. A. M. Tofail. 2012. Surface Chemistry and Cytotoxicity of Reactively Sputtered Tantalum Oxide Films on NiTi Alloy. *E-MRS Spring Meeting*, Strasbourg, France, 14-18 May. Poster presentation.

McNulty, D., D. N. Buckley and C. O'Dwyer. 2012. Structural and Electrochemical Characterization of Thermally Treated Vanadium Oxide Nanotubes for Li-ion Batteries. *PRiME, Pacific Rim Meeting on Electrochemical and Solid State Science, Symposium B4: Intercalation Compounds for Rechargeable Batteries*, Honolulu, Hawaii, 7-12 October. Oral presentation.

Nordström, F. L., **M. Svärd**, B. Malmberg and Å. C. Rasmuson. 2012. Influence of Solution History on the Nucleating Polymorph of m-Hydroxybenzoic Acid. *10th International Meeting on the Crystal Growth of Organic Materials*, University of Limerick, Limerick, 11-14 June. Oral presentation.

O'Brien, N., M. A. McCarthy and W. A. Curtin. 2012. Mechanical Behaviour of Self-Irradiated CNT Bundles for Nanocomposites. *20th UK Conference of the Association for Computational Mechanics in Engineering*, University of Manchester, Manchester, UK, 27-28 March. Oral presentation.

O Ciardhá, C. 2012. How We Can Make Dramatic Improvements in the Processing of APIs. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.

Ó Ciardhá, C., K. Hutton, N. Mitchell and P. Frawley. 2012. Simultaneous Parameter Estimation of a Seeded Anti-solvent Crystallisation Using a Coupled Lasentec FBRM and ATR-FTIR Method. *10th International Meeting on the Crystal Growth of Organic Materials*, University of Limerick, Limerick, 11-14 June. Poster presentation.

Ó Ciardhá, C., N. Mitchell, K. Hutton and P. Frawley. 2012. Simultaneous Parameter Estimation of a Seeded Anti-solvent Crystallisation using a Coupled Lasentec FBRM and ATR-FTIR Method. *First Asian Crystallization Technology Symposium, ACTS*, Seoul, Korea, 23-25 May. Oral presentation.

O'Connor, W. T. 2012. The Neurobiology of Systems and Control Mechanisms in Problem-based Learning. *American Society for Neuroscience, 42nd Annual Meeting*, New Orleans, 19-21 November. Poster presentation.

O'Connor, W. T. 2012. What Can the Brain Science of Learning Teach us About Cybernetics? Systems and Control Mechanisms in Brain Learning. *11th IEEE International Conference on Cybernetic Intelligent Systems*, University of Limerick, 23-24 August. Oral presentation.

O'Connor, W. T. 2012. What Can Neuroscience Teach us About Emotions? *International Symposium on Emotion Regulation*, University of Limerick, 30 April-1 May. Oral presentation.

O'Connor, W. T. 2012. Impact of a Structured STEP 1 USMLE Preparation Programme on Exam Performance. *Irish Network of Medical Educators (INMED)*, Royal College Physicians of Ireland, Dublin, 24 February. Poster presentation.

O'Dowd, N. P. and D. F. Li. 2012. A Micromechanical Finite Element Model for Investigating Ductile Failure in Steels. *ASME Pressure Vessels and Piping Division Conference*, Toronto, Ontario, Canada, 15-19 July. Oral presentation.

O'Grady, M., C. Lenihan and **D. N. Buckley**. 2012. The Evolution of Surface Morphology and Stress in Electrodeposited Copper Nanofilms. *PRiME, Pacific Rim Meeting on Electrochemical and Solid State Science, Symposium F2: Electrodeposition General Session: Fundamentals and New Materials*, Honolulu, Hawaii, USA, 7-12 October. Oral presentation.

O'Grady, M. and **D. N. Buckley**. 2012. Effect of Chloride and Polyethylene Glycol (PEG) on Stress and Microstructure in Electrodeposited Copper Nanofilms. *221st Electrochemical Society Meeting, Symposium F1: Stress-Related Phenomena in Electrochemical Systems 2*, Seattle, Washington, USA, 6-10 May. Oral presentation.

O'Leary, S., E. Kavanagh, P. Grace, B. Doyle and T. M. McGloughlin. 2012. Analysis of the Uniaxial and Biaxial Mechanical Behaviour of Intraluminal Thrombus. *Biomedical Engineering Society Annual Meeting*, Atlanta Georgia, 24-27 October. Oral presentation.

O'Leary, S., P. Coyle, P. Grace, B. Doyle and T. M. McGloughlin. 2012. The Uniaxial and Biaxial Properties of Intraluminal Thrombus (ILT). *UL and NUI Galway Alliance Annual Research Day*, University of Limerick, Limerick, 3 April. Poster presentation.

O'Leary, S., P. Coyle, P. Grace, B. Doyle and T. M. McGloughlin. 2012. Characterisation of Intraluminal Thrombus (ILT). *Sylvester O'Halloran Surgical Scientific Meeting*, University of Limerick, Limerick, 2-3 March. Poster presentation.

O'Leary, S., P. Coyle, P. Grace, B. Doyle and T. M. McGloughlin. 2012. Characterisation of Patient-specific Intraluminal Thrombus. *Bioengineering in Ireland 18*, Queen's University, Belfast, 27-28 January. Oral presentation.

O'Mahony, M. 2012. Solution Mediated Crystal Transformations and Methodologies. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.

O'Mahony, M., C. C. Seaton, D. M. Croker, Å. C. Rasmuson and B. K. Hodnett. 2012. Does Transformation Mechanism Control the Observed Scenario of Solution Mediated Transformation? *4th European Conference on Crystal Growth*, University of Strathclyde, Glasgow, 17-20 June. Poster presentation.

O'Mahony, M., C. C. Seaton, D. M. Croker, Å. C. Rasmuson and B. K. Hodnett. 2012. Investigating The Dissolution of FI Triclinic Carbamazepine by *in-situ* Microscopy. *10th International Meeting on the Crystal Growth of Organic Materials*, University of Limerick, Limerick, 11-14 June. Poster presentation.

O'Mahony, M., D. M. Croker, Å. C. Rasmuson, B. K. Hodnett and S. Vessler. 2012. Measuring the Solubility of the Metastable Triclinic Polymorph of Carbamazepine by *in situ* Microscopy. *International School of Crystallization*, Grenada, 21-25 May 2012. Poster presentation.

Pawlak, N., M. Kelleher and S. Hampshire. 2012. Development of 3D Bone Scaffold using Hydroxyapatite or Alumina Powders and Rapid Prototyping. *Bioengineering in Ireland 2012*, Templepatrick, Co. Antrim, 27-28 January. Oral presentation.

Piterina, A. V., K. Chipman, J. J. Leahy, J. T. Pembroke and M. H. Hayes. 2012. Mutagenic Activity of Biochars Obtained from Pyrolysis Biorefinery Processes in *Salmonella typhimurium* TA100 and TA98 Tester Strains With and Without Metabolic S9 Mix Activation. *Environmental Microbiology and Biotechnology in the Frame of the Knowledge-based Bio and Green Economy*, Bologna, Italy, 10-12 April. Poster presentation.

Piterina, A. V., J. T. Pembroke, T. M. McGloughlin, B. Kennedy and D. Haverty. 2012. Novel Technological Solutions for Current Challenges in Biotechnology, Environmental, Diagnostic Device and Sensors Industries Sectors: Effective Delivery of Temperature-Sensitive Biologically Active Materials (Enzymes, Cells, Biotherapeutics, Phages) and Polymers on the Metal Surfaces and Substrate. *Environmental Microbiology and Biotechnology in the Frame of the Knowledge-based Bio and Green Economy Conference*, Bologna, 10-12 April. Poster presentation.

Piterina, A. V. and J. T. Pembroke. 2012. Exploring Challenges and Opportunities in the Characterisation and Exploitation of Microorganisms from Environmental Niches within Extreme Wastewater Processes. *Environmental Microbiology and Biotechnology in the Frame of the Knowledge-based Bio and Green Economy Conference*, Bologna, 10-12 April. Oral presentation.

Quill, N., R. P. Lynch, C. O'Dwyer and **D. N. Buckley**. 2012. Effect of Temperature and KOH Concentration on Anodic Porous Layer Formation in InP. *PRiME, Pacific Rim Meeting on Electrochemical and Solid State Science, Symposium D7: Pits and Pores 5*, Honolulu, Hawaii, USA, 7-12 October. Oral presentation.

Quill, N., R. P. Lynch, C. O'Dwyer and **D. N. Buckley**. 2012. Current-line Oriented Pore Formation in n-InP Anodized in KOH. *PRiME, Pacific Rim Meeting on Electrochemical and Solid State Science, Symposium D7: Pits and Pores 5*, Honolulu, Hawaii, USA, 7-12 October. Oral presentation.

Quill, N., R. P. Lynch, C. O'Dwyer and **D. N. Buckley**. 2012. Anodic Formation of Porous InP in KCl Solutions. *PRiME, Pacific Rim Meeting on Electrochemical and Solid State Science, Symposium E15 SOTAPOCS 54, State-of-the-Art Program on Compound Semiconductors 54*, Honolulu, Hawaii, USA, 7-12 October. Oral presentation.

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Salaj-Kosla, U. 2012. Nanoporous Gold Electrodes as Matrices for Enzymes Immobilization Applied in Biosensors and Biofuel Cells. *Electrochem2012*, Dublin, 2-4 September. Oral presentation.

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Schaller, B. and T. Curtin. 2012. Direct Catalytic Conversion of Bio-methane to Methanol and Higher Alcohols. *64th Irish Universities Chemistry Research Colloquium*, University of Limerick, Limerick, 14-15 June. Poster presentation.

Seaton, C. C. 2012. Solution Mediated Polymorphic Transformations. *Inaugural Meeting of the Irish Crystallographic Association*, Crown Plaza Hotel, Dublin, 6 September. Oral presentation.

Seaton, C. C. 2012. Insights from Computational Chemistry for Crystallisation. *MSSI Research Day*, Strand Hotel, Limerick, 28 June. Oral presentation.

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Singh, A., C. Dickinson and K. M. Ryan. 2012. Moiré Patterns Revealed in Semiconductor Nanorod Assemblies. *NaNax 5, Nanoscience with Nanocrystals Conference*, Fuengirola, Spain, 7-11 May. Poster presentation. (Winner of 2nd prize presented by editors of ACSNANO, NANO Letters and Langmuir).

Singh, A. and K. M. Ryan. 2012. Device-scale Multilayer Assembly of Vertical Aligned Semiconductor Nanorods by Electrophoresis. *MRS Spring Meeting*, San Francisco, California, USA, 9-13 April. Oral presentation.

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Weidt, D., **L. Figiel** and M. Buggy. 2012. Prediction of Energy Absorption Characteristics of Aligned Carbon Nanotube/epoxy Nanocomposites. *International Conference on Structural Nano Composites, NANOSTRUC 2012*, Bedfordshire, United Kingdom, 2-4 July. Oral presentation.

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Bulushev, D. A., L. Jia, S. Beloshapkin and J. R. H. Ross. 2012. Hydrogen from Decomposition of Biomass Derived Formic Acid over Pd/C Catalysts Doped by Alkali Metals. *International Conference on Advances in Catalysis for Biomass Utilisation*, Thessaloniki, Greece, 8-11 July, p. 102.

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Daly, S. M., C. Silien and M. J. Leahy. 2012. Dual-beam Optical Coherence Tomography System for Quantification of Flow Velocity in Capillary Phantoms. *Proceedings of SPIE 8222, Dynamics and Fluctuations in Biomedical Photonics IX*, 21-23 January, San Francisco, California, USA. Editors: Valery V. Tuchin, Donald D. Duncan, Kirill V. Larin, Martin J. Leahy and Ruikang K. Wang. Published March, 230 pages, 26 papers. ISBN: 9780819488657.

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Li, D. F. and N. P. O'Dowd. 2012. Investigating Ductile Failure at the Microscale in Engineering Steels: A Micromechanical Finite Element Model. *Proceedings of ASME Pressure Vessels and Piping Division Conference*, Toronto, Canada, 15-19 July.

Lynch, R. P., N. Quill, C. O'Dwyer and D. N. Buckley. 2012. Mathematical Model for $\langle 111 \rangle_A$ Pore Propagation and Relation to Current for InP in Aqueous KOH Electrolytes. *Abstracts of Joint 222nd Electrochemical Society Meeting and Fall Meeting of the Electrochemical Society of Japan, Symposium D7: Pits and Pores 5: A Symposium in Honor of David Lockwood*, Honolulu, Hawaii, USA, 7-12 October, abstract 2402.

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Lynch, B., J. Nelson and T. M. McGloughlin. 2012. A Review of Pre and Post-operative Monitoring of Abdominal Aortic Aneurysm Behaviour. *Abstracts of UL-NUI Galway Alliance Second Annual Research Day*, University of Limerick, Limerick, 3 April.

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- McNulty, D., D. N. Buckley and C. O'Dwyer. 2012. Structural and Electrochemical Characterization of Thermally Treated Vanadium Oxide Nanotubes for Li-ion Batteries. *Abstracts of Joint 222nd Electrochemical Society Meeting and Fall Meeting of the Electrochemical Society of Japan, Symposium B4: Intercalation Compounds for Rechargeable Batteries*, Honolulu, Hawaii, USA, 7-12 October, abstract 717.
- Noor, M. R., O. Kolaj-Robin, S. O'Kane, F. Baymann and T. Soulimane. 2012. *Thermus thermophilus* Complex II – Unique Properties of a thermophilic Enzyme. *Abstracts of 17th European Bioenergetics Conference, EBEC 2012*, Freiburg, Germany, 15-20 September. *Biochimica et Biophysica Acta (BBA) – Bioenergetics*, 1817, p. S158. Published October 2012, Editors T. Friedrich, O. Einsle and P. Gräber.
- O'Brien, N., M. A. McCarthy and W. A. Curtin. 2012. Mechanical Behaviour of Self-Irradiated CNT Bundles for Nanocomposites. *Proceedings of 20th UK Conference of the Association for Computational Mechanics in Engineering*, University of Manchester, Manchester, UK, 27-28 March, pp. 263-266.
- O'Connor, W. T. 2012. The Neurobiology of Systems and Control Mechanisms in Problem-based Learning. *Proceedings of the American Society for Neuroscience, 42nd Annual Meeting*, New Orleans, 19-21 November.
- O'Connor, W. T. 2012. What Can Neuroscience Teach us About Emotions? *Proceedings of International Symposium on Emotion Regulation*, University of Limerick, Limerick, 30 April-1 May.
- O'Dowd, N., D. O'Mahoney and S. Schmauder. 2012. *Preface to Proceedings of the 21st International Workshop on Computational Mechanics of Materials, IWCMM 21*, University of Limerick, Limerick, Computational Materials Science, 64, p. 1-1. ISSN: 0927-0256.
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- O'Leary, S., P. Grace, E. Kavanagh, B. Doyle and T. M. McGloughlin. 2012. The Uniaxial and Biaxial Properties of Intraluminal Thrombus (ILT). *Abstracts of UL-NUI Galway Alliance Second Annual Research Day*, University of Limerick, Limerick, 3 April.
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- Piterina, A. V., J. T. Pembroke, T. M. McGloughlin, B. Kennedy and D. Haverty. 2012. Novel Technological Solutions for Current Challenges in Biotechnology, Environmental, Diagnostic Device and Sensors Industries Sectors: Effective Delivery of Temperature-Sensitive Biologically Active Materials (Enzymes, Cells, Biotherapeutics, Phages) and Polymers on the Metal Surfaces and Substrate. *Abstracts of Environmental Microbiology and Biotechnology in the Frame of the Knowledge-based Bio and Green Economy Conference*, Bologna, 10-12 April.
- Piterina, A. V. and J. T. Pembroke. 2012. Exploring Challenges and Opportunities in the Characterisation and Exploitation of Microorganisms from Environmental Niches within Extreme Wastewater Processes. *Abstracts of Environmental Microbiology and Biotechnology in the Frame of the Knowledge-based Bio and Green Economy Conference*, Bologna, 10-12 April.

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