

DARREN WHITAKER

Analytical Chemist

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Co. Tipperary, Ireland



EXPERIENCE

Senior Research Fellow

Pharmaceutical Manufacturing Technology Centre @ University of Limerick

Feb 2016 – Ongoing

Limerick, Ireland

- Led the research agenda within 2 core funded themes – Soft-Sensor and Chemometric Research
- Work focuses on development of hardware and data analysis methodologies to enable process control, specifically within the pharmaceutical industry
- Actively engaged with the pharmaceutical industry to secure direct and leveraged funding for research projects
- Managed multiple projects simultaneously - ensuring that resources were allocated to allow maximum productivity and research outputs
- Multiple projects completed with industry partners, with research outputs directly impacting on business efficiency

Postdoctoral Research Assistant

Institute of Technology Sligo

Jan 2014 – Jan 2016

Sligo, Ireland

- Led research activities at IT Sligo based on the schedule of work for the EU FP7 project “Bio-PolyTec”
- Undertook collaborative work with a multinational, interdisciplinary research team consisting of individuals from academic and industrial partner institutions
- Prepared reports inline with EU REA guidelines
- Presented research as international and national conferences, also prepared research for publication in peer reviewed journals
- Work focused on development of real-time analysis schemes to enable control of polymer extrusion processes

Science Technician

Oakbank School

2012 – 2013

Bradford, UK

Worked as part of a multidisciplinary team to ensure the smooth operation of practical teaching operations in a busy school science department.

Laboratory Demonstrator

University of Bradford

2009 – 2013

Bradford, UK

Worked within a faculty of teaching staff to assist and lead delivery of laboratory classes to undergraduate students.

EDUCATION

Ph.D in Analytical Chemistry

University of Bradford

Oct 2009 – Dec 2013

MChem (Distinction) in Chemistry w/ Pharmaceutical and Forensic Science

University of Bradford

Sept 2005 – July 2009

RESEARCH EXPERIENCE



Analytical Chemistry

Expertise in instrumental analytical chemistry, particularly vibrational spectroscopy



Chemometrics & Statistics

Usage of mathematical techniques to glean actionable data from analytical measurements



Coding

Experience in use of python and R for instrument control, data acquisition and analysis



Project Management

Experience in project management from conception through application and completion

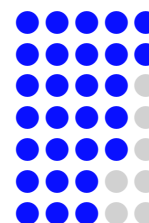
PROFESSIONAL AFFILIATIONS

MRSC - since Dec 2012

AMRSC - March 2012 – Dec 2012

SKILLS

Spectroscopy
General Computer Skills
Statistical Modeling
Laboratory Management
Coding
Electronics
3D Design and Printing



Journal Articles

- Whitaker*, Darren A., Fraser Buchanan, Domhnall Lennon, Mark Billham, and Marion McAfee (Submitted). "In-Line Monitoring of Additive Particle Size During Extrusion by UV-Vis Spectroscopy". In: *Polymer Testing*.
- Whitaker, Darren. A, David Egan, O'Brien Eoin, and Kinnear David (Submitted). "Application of Multivariate Data Analysis to machine power measurements as a means of tool life Predictive Maintenance for reducing product waste". In: *Journal of Intelligent Manufacturing*.
- Whitaker, Darren. A and Kevin Hayes (Submitted). "A Simple Algorithm for Despiking Raman Spectra". In: *Journal of Raman Spectroscopy*.
- Edwards, Howell G.M., Tasnim Munshi, Ian J. Scowen, and Darren A. Whitaker* (In Preparation). "Surface Enhanced Raman Spectroscopy of Surface Immobilised Biomarkers". In: *Journal of Raman Spectroscopy*.
- Whitaker, Darren A., Elina Talvite, Inari Lyyra, Minna Kellomäki, and Marion McAfee (In Preparation). "Online Monitoring of PLLA degradation using NIR spectroscopy". In: *Journal of Materials Processing Technology*.
- Kelly, Catherine B., Gayathri Kollamaram, Jacek Zeglinski, Darren A. Whitaker, Denise M. Croker, and Gavin M. Walker (2017). "Investigation of process-induced polymorphic transitions of Piracetam during wet granulation". In: *Int J. Pharm* 119, pp. 36–46.
- Whitaker, Darren. A and Chris Edlin (2017). "What do we need from PAT?". In: *European Pharmaceutical Review* 2017 (6), pp. 54–56.
- Bukenya, Shamim, Tasnim Munshi, Ian J. Scowen, Rachael Skyner, Darren A. Whitaker, and Colin C. Seaton* (2013). "Building multi-component crystals from cations and co-crystals: the use of chaperones". In: *CrystEngComm* 15, pp. 2241–2250. DOI: 10.1039/C2CE26498F.

Conference Proceedings

- Vincent, Cregan, Darren. A Whitaker, and Cameron Hall (2018). "A model for residue removal in the pharmaceutical industry". In: 20th Conference of the European Consortium for Mathematics in Industry.
- Whitaker, Darren. A, Karttunen Anssi-Pekka, Cregan Vincent, and Korhonen Ossi (2018). "Development of a Robust, Reliable Calibration Protocol for Inline Granule Assessment During Continuous Processing via Near-Infrared (NIR) Spectroscopy". In: The Ninth pan-European Science Conference on QbD and PAT Sciences.
- Whitaker, Darren. A and David Egan (2018). "Development of calibration methodologies to determine both chemical and physical characteristics of a roller compacted ribbon from a single NIR measurement". In: The Ninth pan-European Science Conference on QbD and PAT Sciences.
- Talvitie, Elina, Inari Lyyra, Darren Whitaker, Konrad Mulrennan, Marion McAfee, and Minna Kellomäki (2016). "Real-time monitoring of polymer degradation during extrusion". In: BioMediTech Research Day, Tampere, Finland.
- Whitaker, Darren. A, David Byrne, and David Egan (2016a). "Online monitoring of blending by Near-Infrared spectroscopy". In: The Eighth pan-European Science Conference on QbD and PAT Sciences.
- – (2016b). "Real-time monitoring of Quality Indicators during Roller Compaction via Near-Infrared spectroscopy". In: The Eighth pan-European Science Conference on QbD and PAT Sciences.
- Billham*, M., N. Dunne, D. Whitaker, M. McAfee, and F. Buchanan (2015). "Understanding Mechanical and Thermal Performance of Bioresorbable Composites for Validation of On-Line Process Monitoring". In: The 27th European Conference on Biomaterials, Krakow, Poland.
- Whitaker*, Darren A., Konrad Mulrennan, Inari Lyyra, Elina Talvitie, Minna Kellomäki, and Marion McAfee (2015). "In-Situ Monitoring of Thermal Degradation During Melt Processing of PLA". in: The 8th European Symposium on Biopolymers, Rome, Italy.
- Whitaker*, Darren A., Fraser Buchanan, Domhnall Lennon, Mark Billham, and Marion McAfee (2014a). "The Application of Computational Chemistry and Chemometrics to Developing a Method for Online Monitoring of Polymer Degradation in the Manufacture of Bioresorbable Medical Implants". English. In: *Life System Modeling and Simulation SE - 23*. Ed. by Shiwei Ma, Li Jia, Xin Li, Ling Wang, Huiyu Zhou, and Xin Sun. Vol. 461. Communications in Computer and Information Science. Springer Berlin Heidelberg, pp. 215–225. ISBN: 978-3-662-45282-0. DOI: 10.1007/978-3-662-45283-7_23. URL: http://dx.doi.org/10.1007/978-3-662-45283-7_23.
- – (2014b). "The Application of Computational Chemistry and Chemometrics to Developing a Method for Online Monitoring of Polymer Degradation in the Manufacture of Bioresorbable Medical Implants". In: Presented at The 2014 International Conference on Life System Modeling et al.
- Whitaker*, Darren A., Konrad Mulrennan, Fraser Buchanan, Domhnall Lennon, Mark Billham, and Marion McAfee (2014). "In-Line Monitoring of the Degradation of Bioresorbable Polymers for the Medical Device Industry". In: Presented at 15th Annual Research Conference, Sligo Regional Hospital, Sligo, EIRE.
- Whitaker*, Darren A., Ian J. Scowen, Tasnim Munshi, and Howell G. M. Edwards (2013). "Surface Enhanced Raman Spectroscopy of Thermal Degradation of Astrobiologically Relevant Organic - Inorganic Assemblies". In: Presented at Bradford Post-Graduate Research Symposium, Bradford, UK.

- Whitaker*, Darren A., Ian J. Scowen, Tasnim Munshi, and Howell G. M. Edwards (2012). "Surface Enhanced Raman Spectroscopy of Trace Amounts of Biomarkers". In: Presented at Bradford Post-Graduate Research Symposium, Bradford, UK.
- – (2011). "Thermal Phase Behaviour of Polycyclic Aromatic Hydrocarbons". In: Presented at Bradford Post-Graduate Research Symposium, Bradford, UK.
- Whitaker*, Darren A., Ian J. Scowen, Tasnim Munshi, Colin C. Seaton, and Howell G. M. Edwards (2010). "Modification of the Physico-chemical Behaviour of Biomarker Molecules and Related Species by Mineralogical Environments". In: Presented at CAREX-EU Summer School 'Life in Extreme Environments', Pieve Tesino, Italy.

FUNDING

PAT Monitoring of Blending Processes at Ballina Beverages

[Enterprise Ireland, Innovation Partnership Scheme](#)

📅 2017

☐ Successful - €250k

Systematic Determination of Single Component Properties on the Flow Properties of a Bulk Formulation

[Enterprise Ireland, Innovation Partnership Scheme](#)

📅 2017

☐ Successful - €150k

Characterisation of Effects of Aging of CP-Ti Powders

[Enterprise Ireland, Innovation Partnership Scheme - Feasibility Grant](#)

📅 2017

☐ Successful - €9000

Pilot study into a viscosity soft sensor with application to pharmaceutical mixing processes

[Enterprise Ireland, Innovation Partnership Scheme - Feasibility Grant](#)

📅 2017

☐ Successful - €9000

Development of a Soft Sensor for Drying End Point Detection

[Enterprise Ireland, Innovation Partnership Scheme - Feasibility Grant](#)

📅 2017

☐ Successful - €9000

Evaluation of Plant-Level Performance Measurement of Bulk API Batch Manufacture for Pharma and Biotech Facilities

[Enterprise Ireland, Innovation Partnership Scheme - Feasibility Grant](#)

📅 2016

☐ Successful - €9000

Co-PiLoT Project

[Horizon 2020](#)

📅 2014

☐ Unsuccessful

OTHER ACCOLADES

Invited Session Chair

[LSMS and ICSEE 2014](#)

📅 2014

📍 Shanghai

Computational Methods and Intelligence in Life - 2

Guest Lecture to Students from Applied Science Courses

[University of Bradford](#)

📅 2012

📍 Bradford

The Search for Life on Mars