

# DARREN WHITAKER

## Analytical Chemist

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## 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
- 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

### 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 at international and national conferences, also prepared research for publication in peer reviewed journals

### 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

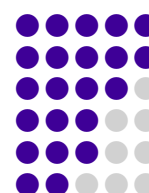
## PROFESSIONAL AFFILIATIONS

MRSC - since Dec 2012

AMRSC - March 2012 – Dec 2012

## SPECIFIC SKILLS

Vib. Spectroscopy  
General Computer Skills  
R  
Molecular Modeling  
Python  
Electronics



# PUBLICATIONS

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## Journal Articles

- Whitaker, Darren. A and David Egan (Submitted). "Prediction of Cutting Tool Health by Power Draw Analysis". In: *Measurement*.
- Whitaker\*, Darren A. et al. (Submitted). "In-Line Monitoring of Additive Particle Size During Extrusion by UV-Vis Spectroscopy". In: *Polymer Testing*.
- Edwards, Howell G.M. et al. (In Preparation). "Surface Enhanced Raman Spectroscopy of Surface Immobilised Biomarkers". In: *Journal of Raman Spectroscopy*.
- Whitaker, Darren A. et al. (In Preparation). "Online Monitoring of PLLA degradation using NIR spectroscopy". In: *Journal of Materials Processing Technology*.
- Kelly, Catherine B. et al. (2017). "Investigation of process-induced polymorphic transitions of Piracetam during wet granulation". In: *Int J. Pharm* 119, pp. 36–46.
- Bukenya, Shamim et al. (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

- Talvitie, Elina et al. (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. et al. (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, et al. (2015). "In-Situ Monitoring of Thermal Degradation During Melt Processing of PLA". in: The 8th European Symposium on Biopolymers, Rome, Italy.
- Whitaker\*, Darren A., Konrad Mulrennan, Fraser Buchanan, et al. (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. et al. (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 et al. 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](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., 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.
- – (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, et al. (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 APPLICATIONS

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PAT Monitoring of Blending Processes at Ballina Beverages

**Enterprise Ireland, Innovation Partnership Scheme**

 2017

☐ Successful - €250k

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

## Enterprise Ireland, Innovation Partnership Scheme

📅 2017

☐ Successful - €150k

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### Characterisation of Effects of Aging of CP-Ti Powders

#### Enterprise Ireland, Innovation Partnership Scheme - Feasibility Grant

📅 2017

☐ Successful - €9000

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

#### Enterprise Ireland, Innovation Partnership Scheme - Feasibility Grant

📅 2017

☐ Successful - €9000

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### Development of a Soft Sensor for Drying End Point Detection

#### Enterprise Ireland, Innovation Partnership Scheme - Feasibility Grant

📅 2017

☐ Successful - €9000

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### 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

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### Co-PiLoT Project

#### Horizon 2020

📅 2014

☐ Unsuccessful

## OTHER ACCOLADES

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### Invited Session Chair

#### LSMS and ICSEE 2014

📅 2014

📍 Shanghai

Computational Methods and Intelligence in Life - 2

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### Guest Lecture to Students from Applied Science Courses

#### University of Bradford

📅 2012

📍 Bradford

The Search for Life on Mars