

Rund A. Abu-Zurayk

1. Personal Details

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2. Education

PhD “The Effect of Processing On Structure and Properties of Polypropylene/Clay Nanocomposites”, School of Mechanical and Aerospace Engineering/Queen’s University Belfast – 2009.
M.Sc. Chemical Engineering- 4.00/4.00 - Excellent - University of Jordan- 2004- Ranked 1st among my class
B.Sc. Chemical Engineering- 3.72/4.00 - Excellent - University of Jordan- 2001- Ranked 1st among my class

3. Jobs

Researcher 09/2011-present, Hamdi Mango Centre for Scientific Research, The University of Jordan
Research fellow 02/2009-5/2011, School of Mechanical and Aerospace Engineering - Queen’s University Belfast
Teaching assistant 02/2006-06/2006, 09/2007-05/2008, 09/2008-12/2008- School of Mechanical and Aerospace Engineering- Queen’s University Belfast
Standardization engineer 08/2002-08/2005- Jordan Institution For Standards and Metrology- Standardization Department – Jordan
Teaching assistance 02/2002-06/2002- Chemical Engineering Department- University of Jordan - Jordan

4. Processing/Characterization Experience:

- Compounding of Polymer/Clay nanocomposites using twin-screw extruder
- Compression moulding of Polymers/Clay nanocomposites using platen press
- Biaxial stretching of Polymers/Clay nanocomposites at different conditions
- Blown film extrusion of Polymers/Clay nanocomposites
- Injection moulding of Polymers/Clay nanocomposites
- Structural Characterisation of Polymers/Clay nanocomposites using the following techniques
 1. Scanning Electron Microscopy (SEM)
 2. Transmission Electron Microscopy (TEM)
 3. X-Ray Diffraction (XRD)
- Mechanical Characterisation Polymer/Clay nanocomposites using Tensile Test and impact test
- Barrier properties analysis of Polymer/Clay nanocomposite

- Thermal properties analysis of Polymer/Clay
- 1. Optical Microscope/ Hot-stage Optical Microscope
- 2. Differential Scanning Calorimetry (DSC)
- 3. Thermal Gravimetric Analysis (TGA)
- 4. Dynamic Mechanical Thermal Analysis (DMTA)
- Statistical analysis- Correlation analysis of processing-structure-properties parameters using Matlab

5. Teaching Training/Experience

I did the following training on teaching during the period October 2010- December 2011 at Queen's University Belfast

- Writing Learning Outcomes and Module Design
- Preparing and Giving Lectures
- Small Group Teaching
- Introduction to Assessment in Higher Education

During my PhD study I worked as teaching assistant in the following subjects:

- Fluids – Queen's University Belfast
- Fluids lab.- Queen's University Belfast
- Mathematics - Queen's University Belfast
- Matlab - Queen's University Belfast

During my research work I helped my supervisor in preparing lecture material, putting exam's questions and did lectures presentation for Master students in a course "Emerging polymer technologies" on the subject of "Polymer nanocomposites"

6. Other experience

- Computer skills:
 1. Windows
 2. MATLAB- I worked as a demonstrator for MATLAB class and I used MATLAB for correlation analysis of processing-structure-properties parameters
- During my PhD study and my former research work at Queen's university I was formally trained and/or had the opportunity to practice the following
 1. Literature track: I did weekly literature review to keep up to date records for any articles related to my field, and add to my experience in polymers in general and specifically in polymer nanocomposites.
 2. Team work: I worked as a part of big team for a joint project between Queen's University Belfast, Oxford University and Bradford University during my PhD and for a joint project between Queen's University Belfast and Bradford University during my present work.
 3. Presentation skills: I have to do a weekly presentation to present my work to the project team from Queen's University Belfast, and I have a big presentation every three months to present my work to the project team from other universities, either at a teleconference or at a physical meeting.
 4. Supervision/demonstrating: I worked as demonstrator for different groups and gave assistance for a final year (undergraduate) student and M.Sc./PhD students of my supervisor who had projects related to my work.

7. Publications/Conferences

- Harkin-Jones, E., Figiel, L., Spencer, P., **Abu-Zurayk, R.**, Al-Shabib, W., Chan, V., Rajeev, R., Soon, K., Buckley, P., Sweeney, J., Menary, G., Armstrong, C., Assender, H., Coates, P., Dunne, F., McNally, T., Martin, P. “Performance enhancement of polymer nanocomposites via multiscale modelling of processing and properties”, *Plastics, Rubber & Composites; Macromolecular Engineering*, 37, 113-123, **2008** [**This work got the Composite award of IOM³ for 2009**]
- **Rund Abu-Zurayk**, Eileen Harkin-Jones, Tony McNally, Gary Menary, Peter Martin, Cecil Armstrong “Investigating The Effect Of Processing Route On Polypropylene/Clay Nanocomposite Performance”, *Polymer Processing Society 24th Annual Meeting ~ PPS-24 ~ June 15-19, 2008* Salerno (Italy)
- Xu, B., Leisen, J., Beckham, H.W., **Abu-Zurayk, R.**, Harkin-Jones, E., McNally, T. “Evolution of Clay Morphology in Polypropylene/Montmorillonite Nanocomposites upon Equibiaxial Stretching: A Solid-State NMR and TEM Approach” *Macromolecules*, 42, 8959–8968, **2009**.
- **Rund Abu-Zurayk** , Eileen Harkin-Jones, Tony McNally, Gary Menary, Peter Martin, Cecil Armstrong. “Biaxial deformation behavior and mechanical properties of a polypropylene/clay nanocomposite”- *Composites Science and Technology* 69, 1644–1652, **2009**
- Harkin-Jones E., **Abu-Zurayk R.**, Armstrong C., Martin P., Menary G., McNally T. “ Biaxial Deformation of Polypropylene- Clay Nanocomposites”, *Congress Centrum Mainz, Germany 7-9 June 2009* – Poster.
- **R. Abu-Zurayk**, E. Harkin-Jones, T. McNally, G. Menary, P. Martin, C. Armstrong “The Effect Of Processing On Structure And Properties Of Polypropylene/Clay Nanocomposites”. *Eurofillers 2009 International Conference*, 21-25 June, **2009**- Poster.
- R.Patel, H.Benkreira & A Khan, P.D.Coates, Y. Shen, S Xie , **R Abu-Zurayk** E. Harkin-Jones, T. McNally, P.Hornsby. “Polypropylene –MMT Clay Nanocomposites Formulation: from small bench top mini-mixer to scaled-up twin screw extruder” *Polymer Process Engineering* 09, **2009**, Bradford, UK
- **Rund Abu-Zurayk**, Eileen Harkin-Jones, Tony McNally, Gary Menary, Peter Martin, Cecil Armstrong, Marion McAfee “Structure-Property Relationships In Biaxially Deformed Polypropylene Nanocomposites”- *Composites Science And Technology* 70, 1353-1359, **2010**
- Shen Yucai, Harkin-Jones Eileen, Xie Shaobo, **Abu-Zurayk Rund**, McNally Tony, Hornsby Peter, Patel Raj, Benkreira Hadj, Khan Atif, Coates Phil , “Tailored Structuring and Biaxial Deformation Behaviour of Polyethylene Terephthalate – Clay Nanocomposites”, *PPS-26, Banff, Canada, 4-8 July 2010*.
- **R. Abu-Zurayk**, E. Harkin-Jones, P. Hornsby, T. McNally. “An Investigation of Process-Material Interactions in the Manufacture of HDPE/Clay Nanocomposite”. *Hybrid Materials 2011, Strasbourg, France, 6-10 March 2011*
- Yucai Shen, Eileen Harkin-Jones, Peter Hornsby, Tony McNally, **Rund Abu-Zurayk**. “The effect of temperature and strain rate on the deformation behaviour, structure development and properties of biaxially stretched PET–clay nanocomposites” *Composites Science and Technology* 71, 758-764, **2011**.
- **Rund Abu-Zurayk**, Eileen Harkin-Jones, "The influence of processing route on the structuring and properties of HDPE/clay nanocomposites". *Polymer Engineering and Science* 52, 2360–2368, **2012**.

8. References

- Prof. Eileen Harkin-Jones – Queen’s University Belfast - School of Mechanical and Aerospace Engineering-
e.harkinjones@qub.ac.uk
- Dr. Tony McNally - Queen’s University Belfast - School of Mechanical and Aerospace Engineering-
t.mcnelly@qub.ac.uk