Shayan SEYEDIN

Institute for Frontier Materials (IFM),
Deakin University, Geelong
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EDUCATION

- **Ph.D.**, Chemistry (Jul 2010 – Dec 2014) – Supervisor: Prof Gordon Wallace
  Intelligent Polymer Research Institute (IPRI), University of Wollongong, Australia
  Thesis: Fabrication of Conducting Elastomeric Composite Fibres
- **M.Sc.**, Textile Engineering – Textile Chemistry and Fibres Science (Sep 2005 – Feb 2008)
  Assessed as equivalent to Australian Master's Degree in Chemical Engineering by Engineers Australia
  University of Guilan, Iran (GPA 19.02 out of 20, Ranked 1st in the class)
  Thesis: A Study on Morphology of Electrospun Nanofibres
- **B.Sc.**, Textile Engineering – Textile Chemistry and Fibres Science (Sep 2001 – Jul 2005)
  Assessed as equivalent to Australian Bachelor's Degree in Chemical Engineering by Engineers Australia
  University of Guilan, Iran (GPA 18.32 out of 20, Ranked 1st in the class)

EMPLOYMENT

- **Research Fellow** (Jan 2018 – Present)
  Alfred Deakin Postdoctoral Research Fellow (Jan 2017 – Present)
  Institute for Frontier Materials (IFM), Deakin University, Australia
  - Synthesis and fibre processing of MXene 2D nanomaterials for wearable energy storage
  - Published 9 journal papers (3 as first author, 2 as joint first author and 4 as corresponding author)
  - Presented his research in 2 international conferences
  - Received 1 industry research grant, 1 fellowship, 1 travel grant
  - Supervising 2 PhD candidates as associate supervisor and 1 summer scholarship student
- **Associate Research Fellow** (May 2014 – Dec 2016)
  Institute for Frontier Materials (IFM), Deakin University, Australia
  - Synthesised and processed novel 2D nanomaterials into fibres for energy storage applications
  - Published 6 journal papers (5 as first author)
  - Presented his research in 3 international conferences and received 2 awards
  - Received 1 early career researcher fellowship, 2 research grants, and 2 travel grants
  - Supervised 2 PhD candidates as associate supervisor
- **Visiting Associate Research Fellow** (May 2014 – Dec 2014)
  Intelligent Polymer Research Institute (IPRI), University of Wollongong, Australia
  - Synthesised graphene oxide (GO)
  - Developed a novel dry-jet wet-spinning technique to process GO into fibres and knitted those into textiles
  - Participated in collaborative research projects with UOW
- **Research Assistant** (Jan 2014 – Apr 2014)
  Intelligent Polymer Research Institute (IPRI), University of Wollongong, Australia
  - Produced novel conducting elastomeric composite fibres
  - Knitted the conducting fibres into textiles for wearable body movement monitoring applications
- **Research and Standard Development Officer** (Jun 2008 – Jul 2009)
  Institute of Standards and Industrial Research of Iran (ISIRI), Iran
  - Worked with a team of experts and developed national standards below:
    11831: Textile – Silk – Raw silk yarn storage – The code of practice
    11830: Textile – Silk – By-products in silk yarn production – Classification
    11829: Textile – Silk – Harvest, transportation and storage of cocoon – The code of practice
    11031: Protective clothing – Assessment of resistance of materials to molten metal splash

TEACHING EXPERIENCE

- **Lecturer** (Sep 2009 – Feb 2010)
  Jaberebne Hayan Higher Educational Institute, Iran
  - Lectured Introductory Calculus – 1st year subject
  - Had 4 classes (Total students: ~300)

- **Academic Tutor** (Casual, Jul 2011 – Nov 2014)
  University of Wollongong, Australia
  - Engineering Materials – 1st year subject
  - Polymeric Materials – 3rd year subject
  - Engineering Design and Innovation – 1st year subject
  - Introductory Chemistry for Engineers – 1st year subject
- **Academic Tutor** (Casual, Sep 2003 – Jun 2006)
  University of Guilan, Iran
  - Advanced Mathematics (Numerical Computations) – MSc subject
  - Physical Chemistry – 2nd year subject
  - Physical Properties of Textile Fibres – 3rd year subject

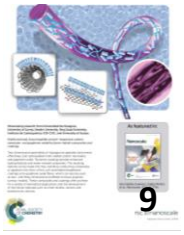
PUBLICATIONS

Published under names: Shayan Seyedin, Mohammad Ziabari Seyedin, and Mohammad Ziabari

REFEREED JOURNAL PAPERS

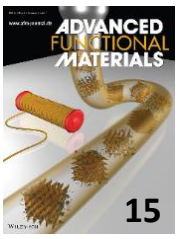
1. S. Seyedin*, S. Moradi, C. Singh, and J.M. Razal*; "Continuous Production of Stretchable Conductive Multifilaments in Kilometer Scale Enables Facile Knitting of Wearable Strain Sensing Textiles". *Applied Materials Today*, 11, 255-263, 2018. **CORRESPONDING AUTHOR**
2. S. Seyedin*, S. Moradi, C. Singh, and J.M. Razal*; "Data on kilometer scale production of stretchable conductive multifilaments enables knitting wearable strain sensing textiles". *Data in Brief*, 18, 1765-1772, 2018. **CORRESPONDING AUTHOR**
3. S. Qin†, S. Seyedin†, J. Zhang, Z. Wang, F. Yang, Y. Liu, J. Chen, J. Razal; "Elastic Fiber Supercapacitors for Wearable Energy Storage". *Macromolecular Rapid Communications*, Online 17 May 2018 (DOI: 10.1002/marc.201800103). **EQUAL FIRST AUTHOR CONTRIBUTION** (IF = 4.27)
4. Y. Liu, B. Zhang, Q. Xu, Y. Hou, S. Seyedin, A. Qin, G.G. Wallace, S. Beirne, J.M. Razal, and J. Chen; "Development of Graphene Oxide/Polyaniline Inks for High Performance Flexible Microsupercapacitors via Extrusion Printing". *Advanced Functional Materials*, Online 30 Mar 2018 (DOI: 10.1002/adfm.201706592). (IF = 12.12)
5. E. Pakdel, W.A. Daoud, S. Seyedin, J. Wang, J.M. Razal, L. Sun, and X. Wang; "Tunable Photocatalytic Selectivity of TiO_2/SiO_2 Nanocomposites: Effect of Silica and Isolation Approach". *Colloids and Surfaces A: Physicochemical and Engineering Aspects*, 552, 130-141, 2018. (IF = 2.71)
6. S. Seyedin, E.R.S. Yanza, and J.M. Razal; "Knittable Energy Storing Fiber with High Volumetric Performance Made from Predominantly MXene Nanosheets". *Journal of Materials Chemistry A*, 5, 24076-24082, 2017. **FEATURED IN SYDNEY MORNING HERALD AND THE AGE** (IF = 8.87)
7. J. Zhang, S. Seyedin*, Z. Gu, W. Yang, X. Wang, and J.M. Razal*; "MXene: A Potential Candidate for Yarn Supercapacitors". *Nanoscale*, 9, 18604-18608, 2017. **CORRESPONDING AUTHOR** (IF = 7.37)
8. J. Zhang†, S. Seyedin†*, Z. Gu, N. Salim, X. Wang, and J.M. Razal*; "Liquid Crystals of Graphene Oxide: A Route Towards Solution-Based Processing and Applications", *Particle & Particle Systems Characterization*, 34, 1600396, 2017. **EQUAL FIRST AUTHOR CONTRIBUTION AND CORRESPONDING AUTHOR, FEATURED AS COVER PAGE** (IF = 5.11)

9. R. Garriga, I. Jurewicz, S. Seyedin, N. Bardi, S. Totti, B. Matta-Domjan, E.G. Velliou, M.A. Alkhorayef, V.L. Cebolla, J.M. Razal, A.B. Dalton, and E. Muñoz; "Multifunctional, Biocompatible and pH-responsive Carbon Nanotube- and Graphene Oxide/Tectomer Hybrid Composites and Coatings", *Nanoscale*, 9, 7791-7804, 2017. **FEATURED AS COVER PAGE** (IF = 7.76)

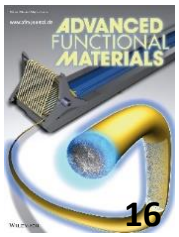


10. S. Seyedin, J.M. Razal, P.C. Innis, R. Jalili, and G.G. Wallace; "Compositional Effects of Large Graphene Oxide Sheets on the Spinnability and Properties of Polyurethane Composite Fibers", *Advanced Materials Interfaces*, 3, 1500672, 2016. (IF = 4.28)
11. S. Seyedin, J.M. Razal, P.C. Innis, and G.G. Wallace; "A Facile Approach to Spinning Multifunctional Conductive Elastomer Fibres with Nanocarbon Fillers", *Smart Materials and Structures*, 25, 035015, 2016. (IF = 2.91)

12. Y. Liu, B. Weng, J.M. Razal, Q. Xu, C. Zhao, Y. Hou, S. Seyedin, R. Jalili, G.G. Wallace, and J. Chen; "High-Performance Flexible All-Solid-State Supercapacitor from Large Free-Standing Graphene-PEDOT/PSS Films", *Scientific Reports*, 5, 17045, 2015. (IF = 5.23)
13. S. Seyedin, M.S. Romano, A.I. Minett, and J.M. Razal; "Towards the Knittability of Graphene Oxide Fibers". *Scientific Reports*, 5, 14946, 2015. **FTEATURED IN A BLOG** (IF = 5.23)
14. S. Seyedin, J.M. Razal, P.C. Innis, A. Jeiranikhameneh, S. Beirne, and G.G. Wallace; "Knitted Strain Sensor Textiles of Highly Conductive All Polymeric Fibers". *ACS Applied Materials & Interfaces*, 7, 21150-21158, 2015. **FTEATURED IN ABC NEWS** (IF = 7.50)
15. M.Z. Seyedin, J.M. Razal, P.C. Innis, R. Jalili, and G.G. Wallace; "Achieving Outstanding Mechanical Performance in Reinforced Elastomeric Composite Fibers Using Large Sheets of Graphene Oxide". *Advanced Functional Materials*, 25, 94-104, 2014. **FEATURED AS COVER PAGE** (IF = 12.12)



16. M.Z. Seyedin, J.M. Razal, P.C. Innis, and G.G. Wallace; "Strain-Responsive Polyurethane/PEDOT:PSS Elastomeric Composite Fibers with High Electrical Conductivity". *Advanced Functional Materials*, 24, 2957-2966, 2014. **FEATURED AS COVER PAGE** (IF = 12.12)
17. F. Mottaghitalab, M. Farokhi, V. Mottaghitalab, M. Ziabari, A. Divsalar, and M.A Shokrgozar; "Enhancement of Neural Cell Lines Proliferation Using Nano-structured Chitosan/Poly(vinyl alcohol) Scaffolds Conjugated with Nerve Growth Factor". *Carbohydrate Polymers*, 15, 526-535, 2011. (IF = 4.81)



18. M. Ziabari, V. Mottaghitalab, and A.K. Haghi; "A New Approach for Optimization of Electrospun Nanofiber Formation Process". *Korean Journal of Chemical Engineering*, 27, 340-352, 2010. **FEATURED IN NATIONAL NEWS** (IF = 2.01)
19. M. Ziabari, V. Mottaghitalab, and A.K. Haghi; "Application of Direct Tracking Method for Measuring Electrospun Nanofiber Diameter". *Brazilian Journal of Chemical Engineering*, 26, 53-62, 2009. (IF = 1.49)
20. M. Ziabari, V. Mottaghitalab, and A.K. Haghi; "Distance Transform Algorithm for Measuring Nanofiber Diameter". *Korean Journal of Chemical Engineering*, 5, 905-918, 2008. **FEATURED IN NATIONAL NEWS** (IF = 2.01)
21. M. Ziabari, V. Mottaghitalab, and A.K. Haghi; "Evaluation of Electrospun Nanofiber Pore Structure Parameters". *Korean Journal of Chemical Engineering*, 25, 923-932, 2008. **FEATURED IN A RADIO INTERVIEW** (IF = 2.01)
22. M. Ziabari, V. Mottaghitalab, and A.K. Haghi; "Simulated Image of Electrospun Nonwoven Web of PVA and Corresponding Nanofiber Diameter Distribution". *Korean Journal of Chemical Engineering*, 25, 919-922, 2008. (IF = 2.01)
23. M. Ziabari, V. Mottaghitalab, S.T. McGovern, and A.K. Haghi; "Measuring Electrospun Nanofibre Diameter: A Novel Approach". *Chinese Physics Letters*, 25, 3071-3074, 2008. (IF = 0.93)
24. M. Ziabari, V. Mottaghitalab, S.T. McGovern, and A.K. Haghi; "A New Image Analysis Based Method for Measuring Electrospun Nanofiber Diameter". *Nanoscale Research Letters*, 2, 597-600, 2007. **FEATURED IN NATIONAL NEWS** (IF = 2.83)
25. A. Shams Nateri and M. Ziabari; "Reconstruction of Absorption Spectra of Bi-Component Dye Solutions Using Look-up Table Method". *Amirkabir Journal*, 18, 19-27, 2007. (In Persian)

SELECTED BOOK CHAPTERS

1. Y. Liu, C. Zhao, S. Seyedin, J.M. Razal, and J. Chen; "Flexible All-Solid State Supercapacitors and Micro-Pattern Supercapacitors". Chapter 1 in: D. Zhi; *Flexible Energy Conversion and Storage Devices*. Wiley, Germany, Sep 2018.
2. M. Ziabari, V. Mottaghitalab, A.K. Haghi and S.T. McGovern; "A New Approach for Measurement of Electrospun Fiber Diameter in Nonwoven webs". Chapter 3 in: A.K. Haghi; *Electrospun Nanofibers and Nanotubes Research Advances*. Nova Science Publishers, New York, 2009.
3. M. Ziabari, V. Mottaghitalab, A.K. Haghi and S.T. McGovern; "A New Methodology for Control of Governing Parameters in Electrospinning Process". Chapter 9 in: A.K. Haghi; *Electrospun Nanofibers and Nanotubes Research Advances*. Nova Science Publishers, New York, 2009.
4. M. Ziabari, V. Mottaghitalab and A.K. Haghi; "Development of a Reliable, Efficient and Automated Method for Measuring Nanofiber Diameter in Electrospun Webs". Chapter 13 in: E.M. Pearce and G.E. Zaikov; *Progress*

in Chemistry and Biochemistry: Kinetics, Thermodynamics, Synthesis, Properties and Applications. Nova Science Publishers, New York, 2009.

5. M. Ziabari, V. Mottaghitalab and A.K. Haghi; "Image Analysis of Pore Size Distribution in Electrospun Nanofiber Webs: New Trends and Developments". Chapter 11 in: R.A. Pethrick, G.E. Zaikov and J. Pielichowski; *Monomers, Oligomers, Polymers, Composites and Nanocomposites Research: Synthesis, Properties and Applications*. Nova Science Publishers, New York, 2008.
6. M. Ziabari, V. Mottaghitalab and A.K. Haghi; "Image Analysis of Pore Size Distribution in Electrospun Nanofiber Webs: New Trends and Developments". Chapter 22 in: B.A. Howell, N. Lekishvili and G.E. Zaikov; *Compounds and Materials with Specific Properties*. Nova Science Publishers, New York, 2008.
7. M. Ziabari, V. Mottaghitalab and A.K. Haghi; "A Novel Approach for Measurement of Nanofiber Diameter of Electrospun Webs". Chapter 23 in: A.K. Mikitaev, M.K. Ligidov and G.E. Zaikov; *Modern Tendency in Organic and Bioorganic Chemistry*. Nova Science Publishers, New York, 2008.
8. M. Ziabari, F. Raeesi and A.K. Haghi; "Polymeric in Electronic Devices: New Trends and Achievements". Chapter 14 in: G.E. Zaikov; *Chemical and Biochemical Physics, Kinetics and Thermodynamics: New Perspectives*. Nova Science Publishers, New York, 2008.

CONFERENCE PRESENTATIONS

1. 2018 International Conference On Nanoscience and Nanotechnology (ICONN 2018), University of Wollongong, Australia, 29 Jan - 2 Feb 2018.
2. 2017 MRS Fall Meeting & Exhibit, Boston, USA, 26 Nov - 01 Dec 2017. **2 ORAL AND 1 POSTER PRESENTATIONS**
3. European Advanced Materials Congress, Stockholm, Sweden, 23-25 Aug 2016. **RECEIVED YOUNG SCIENTIST MEDAL**
4. 5th International Symposium on Graphene Devices, Griffith University, Australia, 11-14 Jul 2016.
5. 13th Asian Textile Conference, Deakin University, Australia, 3-6 Nov 2015.
6. 10th International Electromaterials Science Symposium, University of Wollongong, Australia, 11-13 Feb 2015. **RECEIVED POSTER AWARD**
7. ANN Early Career Workshop, University of Technology, Sydney, Australia, 10-11 Jul 2014.
8. 9th International Electromaterials Science Symposium, University of Wollongong, Australia, 12-14 Feb 2014.
9. 4th Asia-Pacific Symposium on Nanobionics, University of Melbourne, Australia, 14-15 Nov 2013.
10. ANN Early Career Workshop, Flinders University, Australia, 25-26 July 2013.
11. 8th International Electromaterials Science Symposium, University of Wollongong, Australia, 13-15 Feb 2013.
12. 7th International Electromaterials Science Symposium, Deakin University, Australia, 15-17 Feb 2012.
13. 4th Nanotechnology Student Conference, University of Razi, Iran, 8-10 Oct 2008.
14. 2nd International Congress on Nanoscience and Nanotechnology, University of Tabriz, Iran, 28-30 Oct 2008.
15. 6th National Iranian Textile Engineering Conference, Isfahan University of Technology, Iran, 8-9 May 2007.

HONOURS AND AWARDS

- *Alfred Deakin Postdoctoral Research Fellowship*, Deakin University, Australia, 2017-2018
- *Young Scientist Medal*, International Association of Advanced Materials, Sweden, 2016
- *Poster Award*, 10th International Electromaterials Science Symposium, University of Wollongong, Australia, 2015
- *University Postgraduate Award (UPA)*, University of Wollongong, Australia, 2010-2014
- *International Postgraduate Tuition Award (IPTA)*, University of Wollongong, Australia, 2010-2014
- *Selected Research Plan Award*, Guilan Province Governor, Iran, 2008
- *Recognised as a National Elite*, Iran's National Foundation of Elites, Iran, 2008
- *Ranked 1st among all M.Sc. students of Textile Engineering*, University of Guilan, Iran, 2008
- *The Young Superior Researcher Award*, Guilan Province Governor, Iran, 2007
- *Award for Significant Achievement in Academic Research*, University of Guilan, Iran, 2007
- *Awarded with an exemption from the national M.Sc. entrance exam*, Ministry of Science, Research and Technology of Iran, Iran, 2005
- *Ranked 1st among all B.Sc. students of Textile Engineering*, University of Guilan, Iran, 2005
- *The best annual student of Textile Engineering*, University of Guilan, Iran, 2002

GRANTS AND FUNDING

- $18,530, IFM Impact Grant, Shayan Seyedin (Lead CI), Maryam Naebe, 2018
- $13,450, Research Excellence Grant, Si Qin, Shayan Seyedin (CI), 2018
- $985, Australian Nanotechnology Network National Conference Travel Bursary, 2018
- $450, Postdoc Grant, Materials Research Society Foundation, 2017
- $24,500, Endeavour Research Fellowship, 2017
- $4,000, CASS Foundation Travel Award, 2017
- $36,865, Imagine Intelligent Materials, Joselito Razal, Shayan Seyedin (CI), 2017
- $182,442, Alfred Deakin Postdoctoral Research Fellowship, 2017-2018
- $8,000, Central Research Grants Scheme, Shayan Seyedin (CI), 2017
- $19,320, Institute for Frontier Materials Impact Grant, Shayan Seyedin (CI), 2016
- $2,800, The Ian Potter Foundation Travel Award, 2016
- Australian Nanotechnology Network National Conference Travel Bursary, 2016

MEDIA APPEARANCES

- Fibres for the future, *Deakin Invenio*, 26 Apr 2018
- Iranian scientist creates kinetic clothes to monitor your movements, *Radio Neshat*, 24 Apr 2018
- Researchers create kinetic clothes to monitor body movements, *TechXplore*, *Deakin University*, 19 Apr 2018
- A smarter outfit, *Materials World (IOM^3)*, 1 Jan 2018
- Radio Interview, *2SM Super Network* and *3AW Drive with Tom Elliott*, 23-24 Nov 2017
- Jeans that charge your phone? Deakin's new fibre promises future of wearable batteries, *Sydney Morning Herald* and *The Age*, 23 Nov 2017
- Pockets that charge, *Geelong Advertiser*, 18 Nov 2017
- Researchers knit energy-storing clothing fibres, *Deakin University* and *Phys.org*, 17 Nov 2017
- Textile woven fabrics from nylon and graphene oxide fibres, *La Ciencia de la Mula Francis*, 14 Oct 2015
- Clothes that track body movements, *Zee News* and *Deccan Chronicle*, 12 Oct 2015
- Knit it, braid it, turn it on and use it, *ScienceDaily*, *Phys.org* and *Nano Werk*, 9 Oct 2015
- Knitted stretch-sensing fabric to monitor human movement developed by Australian researchers, *ABC NEWS*, 2 Oct 2015
- Fashion first: Researchers knit ‘talking’ textile, *University of Wollongong*, 1 Oct 2015
- Introducing the knitted circuit board, *Cosmos Magazine*, 5 Sept 2014