Dr. Alisyn J. Nedoma

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Date of Birth: 30 November 1982
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Qualifications

2004–2010	Ph.D. Chemical Engineering, Univ. of California, Berkeley
2000–2004	B.S. Chemical Engineering, Univ. of Florida, *summa cum laude*

Research Experience

2016–present	Lecturer, Department of Chemical and Materials Engineering, University of Auckland, Auckland, New Zealand
2011–2014	Junior Research Fellow, Department of Chemical Engineering, Imperial College London, London, U.K.
2014	Guest Researcher hosted by Paul Smith, Department of Materials Engineering, ETH Zürich, Zürich, Switzerland
2008	Guest Researcher hosted by Andrew Jackson, National Institute of Standards and Technology, Center for Neutron Research, Gaithersburg, Maryland
2004–2010	Graduate Student Researcher, Department of Chemical Engineering, University of California, Berkeley, California

Grants and Fellowships

2018–2019	PI, Manufacturing and Design Seed Fund ($30,000)
2018–2019	PI, Food and Health Programme Seed Funding ($10,000)
2018–2019	PI, Chemical and Materials Engineering Department Seed Fund ($10,000)
2018–2019	AI, Chemical and Materials Engineering Department Seed Fund ($10,000)
2016–2018	PI, Faculty Research Development Fund new researcher ($30,000)
2011–2014	Imperial College Junior Research Fellowship and Research Grant (∼£43,000/year)
2012	PI, Royal Society Research Grant (£15,000)
2004–2007	Graduate Opportunity Fellowship (tuition) Dept. of Chemical Engineering, University of California, Berkeley

Honors and Awards

2017	Invited lecture, International Academic Conference on Micro-Nano Materials and Advanced Manufacturing 2017, Chongqing, PR China

2017	Invited judge, The Institution of Engineering and Technology: Present Around the World, Auckland, NZ
2017	Invited opening address, Engineers without Borders, Elevate Conference, Auckland, NZ
2017	2^{nd} place oral presentation, Manufacturing and Design Conference, Auckland, NZ
2014	Invited article, ChemPhysChem Organic Electronics special edition
2014	Selected for the Research Excellence Framework, Department of Chemical Engineering, Imperial College London
2013	Commendation for teaching Department of Chemical Engineering, Imperial College London
2013	Beamtime allocation 3 days on LOQ (small angle neutron scattering), ISIS, Rutherford Appleton Laborator, Didcot, UK
2012	Invited lecture, Rank Prize Funds Symposium on Optoelectronics Grasmere, UK
2012	Beamtime allocation 3 days on D22 (small angle neutron scattering)
2012	Beamtime allocation 3 days on I07 (grazing incidence wide angle x-ray scattering), Diamond, Rutherford Appleton Laboratory, Didcot, UK
2011	Beamtime allocation 7 days on PAXE (small angle neutron scattering), Laboratoire Léon Brillouin, Commisariat à l'Énergie Atomique, Saclay, France

Teaching Experience

2016–present	Lecturer, Department of Chemical and Materials Engineering, University of Auckland, Auckland: "Energy and Processes", "Advanced Materials", "Electronic Materials", "Food Process Engineering", and "Materials and Processing"
2011–2013	Lecturer, Department of Chemical Engineering, Imperial College London "Chemistry and Engineering of Polymers" (Fall 2011, Fall 2012)
2012	Team leader, Plastic Electronics Winter School, Bergün, Switzerland "Block Copolymers for Scaleable Plastic Solar Cells" (Winter 2012)
2005–2006	Graduate Student Instructor, Dept. of Chemical Engineering, Univ. California, Berkeley: "Polymer Science" (Fall 2006) and "Reaction Engineering" (Spring 2005)

Research Supervision

present	Supervisor, PhD, 1 student
present	Co-supervisor, PhD, 1 student
present	Supervisor, Masters of Engineering, 1 student
present	Supervisor, external interns from the University of Bath, 2 students
present	Supervisor, summer interns, 3 students
2017	Supervisor, final-year project undergraduates, 4 students
2016	Supervisor, Summer Research Scholars, 2 students
2014	Supervisor, Erasmus student final year thesis
2012–2013	Supervisor, senior research project, 4 students

2012	Co-supervisor, masters research thesis
2012	Supervisor, Nuffield Bursury year-12 student

Professional Activities

2017–present	University of Auckland Engineering representative to Employers and Manufacturer's Association, Grafton, Auckland, NZ
2017	Member Curriculum Review Steering Committee, Department of Chemical and Materials Engineering, University of Auckland, NZ
2017	Attendee, Taniwha–Dragon Economic Summit, Napier, NZ
2016–present	Member Polymer Electronic Research Centre, University of Auckland, NZ
2016–present	Member Water and Inequality BEST challenges team, Faculty of Engineering, University of Auckland, NZ
2016–present	Member Innovative Manufacturing and Materials Programme, University of Auckland, NZ
2016	Attendee, Federation of Māori Authorities Conference, Hamilton, NZ
2016–present	Member Māori Enterprise Committee, Faculty of Engineering, University of Auckland, NZ
2012–present	Peer reviewer for *Journal of Materials Chemistry C*, *Soft Matter*, *Rsc Advances*, and *New Journal of Chemistry*
2013–2014	Member of the Centre for Plastic Electronics

Service

2017–present	First Foundation mentor for Pasifika student
2017	Presented demonstrations at Courses and Careers Day, University of Auckland, Auckland, NZ
2017	Member, University of Auckland Engineering cooking team at The Ronald McDonald House, Auckland, NZ
2016–2017	Co-organized demonstrations for Enginuity Day, University of Auckland, NZ
2014	Organized and chaired a plastic electronics symposium, London, UK
2013–2014	Postdoctoral Representative, Department of Chemical Engineering
2012–2014	Chair and mock-interview panelist, Postdoctoral Development Centre, Imperial College London

Publications

[1] Rajeev Dattani, Mark T. F. Telling, Carlos G. Lopez, Siva H. Krishnadasan, James H. Bannock, Anne E. Terry, John C. de Mello, João. T. Cabral, and **Alisyn J. Nedoma**. Rapid Precipitation: an Alternative to Solvent Casting for Organic Solar Cells. *ChemPhysChem*, 16(6):1231–1238, 2015.

[2] Alejandro Sanz, Him Cheng Wong, **Alisyn J. Nedoma**, Jack F. Douglas, and João T. Cabral. Influence of c_{60} fullerenes on the glass formation of polystyrene. *Polymer*, 2015. *In press* doi:10.1016/j.polymer.2015.05.001.

[3] Andreas Mautner, Koon-Yang Lee, Panu Lahtinen, Tekla Tammelin, Aji P. Mathew, **Alisyn J. Nedoma**, Kang Li, and Alexander Bismarck. Cellulose Nanopapers as Tight Aqueous Ultra-Filtration Membranes. *Reactive and Functional Polymers*, 86:209–214, 2015.

[4] Rajeev Dattani, James H. Bannock, Zhuping Fei, Roderick C. I. MacKenzie, Anne A. Y. Guilbert, Michelle S. Vezie, Jenny Nelson, John C. DeMello, Martin Heeney, João. T. Cabral, and **Alisyn J. Nedoma**. A General Mechanism for Controlling Thin Film Structures in All-Conjugated Block Copolymer:Fullerene Blends. *Journal of Materials Chemistry A*, 2:14711–14719, 2014.

[5] Rajeev Dattani, Rolf Michels, **Alisyn J. Nedoma**, Ralf Schweins, Paul Westacott, Klaus Huber, and João. T. Cabral. Conformation and Interactions of Polystyrene and Fullerenes in Dilute to Semidilute Solutions. *Macromolecules*, 47(17):6113–6120, 2014.

[6] **Alisyn J. Nedoma**, Peggy Lai, Andrew Jackson, Megan L. Robertson, Nisita S. Wanakule, and Nitash P. Balsara. Phase Diagrams of Blends of Polyisobutylene and Deuterated Polybutadiene as a Function of Chain Length. *Macromolecules*, 44(8):3077–3084, April 2011.

[7] **Alisyn J. Nedoma**, Peggy Lai, Andrew Jackson, Megan L. Robertson, and Nitash P. Balsara. Phase Behavior of Off-Critical A/B/AC Blends. *Macromolecules*, 43(18):7852–7859, September 2010.

[8] Justin M. Virgili, **Alisyn J. Nedoma**, Rachel A. Segalman, and Nitash P. Balsara. Ionic Liquid Distribution in Ordered Block Copolymer Solutions. *Macromolecules*, 43(8):3750–3756, April 2010.

[9] **Alisyn J. Nedoma**, Peggy Lai, Andrew Jackson, Megan L. Robertson, Nisita S. Wanakule, and Nitash P. Balsara. Phase Behavior of Asymmetric Multicomponent A/B/AC Blends with Unequal Homopolymer Molecular Weights. *Macromolecules*, 43(7):3549–3555, April 2010.

[10] **Alisyn J. Nedoma**, Megan L. Robertson, Nisita S. Wanakule, and Nitash P. Balsara. Measurements of the Composition and Molecular Weight Dependence of the Flory-Huggins Interaction Parameter. *Macromolecules*, 41(15):5773–5779, August 2008.

[11] **Alisyn J. Nedoma**, Megan L. Robertson, Nisita S. Wanakule, and Nitash P. Balsara. Measurements of the FloryHuggins Interaction Parameter Using a Series of Critical Binary Blends. *Industrial & Engineering Chemistry Research*, 47(10):3551–3553, May 2008.

[12] Moon Jeong Park, **Alisyn J Nedoma**, Phillip L Geissler, Nitash P Balsara, Andrew Jackson, and David Cookson. Humidity-Induced Phase Transitions in Ion-Containing Block Copolymer Membranes. *Macromolecules*, 41(6):2271–2277, 2008.

[13] Nisita S Wanakule, **Alisyn J Nedoma**, Megan L Robertson, Zhuangxi Fang, Andrew Jackson, Bruce A Garetz, and Nitash P Balsara. Characterization of Micron-Sized Periodic Structures in Multicomponent Polymer Blends by Ultra-Small-Angle Neutron Scattering and Optical Microscopy. *Macromolecules*, 41(2):471–477, 2008.

Presentations

1. "Nanostructural Effects of Doping a Conductive Polymer:Fullerene Blend—Processing and Thermodynamics" Materials Research Society Conference, Boston, MA, USA (27 November 2017)
2. "Nanostructural Control in Polymer Solar Cells" International Academic Conference on Micro-Nano Materials and Advanced Manufacturing 2017, Chongqing, PR China (11 November 2017)
3. "Nanostructural Control in Plastic Electronic Films," Manufacturing and Design Conference, Auckland, NZ (10 May 2017)
4. "Plastic Solar Cells: Nanostructural Control via Processing Kinetics," Australasian Polymer Symposium, Lorne, AU (22 November 2016)
5. "Plastic Solar Cells: Nanostructural Control via Processing Kinetics," Polymer Electronics Research Centre Symposium, Auckland, NZ (17 November 2016)
6. "Teasing Crystals from Soft Phases," Institute of Physics: Physical Aspects of Polymer Science, Sheffield, UK (10 September 2013)
7. "Controlled Domain Swelling for Block Copolymer-Based Solar Cells," American Physical Society Meeting, Baltimore, Maryland (22 March 2013)
8. "Controlled Bulk Heterojunctions via Block Copolymer and Daring Thermodynamics," The Rank Prize Funds Symposium:Nanomaterials for Solar Energy Generation and Storage, Grasmere, UK (19 June 2012)
9. "Robust Nanostructures from Block Copolymers: Towards Stable Organic Photovoltaics," Centre for Plastic Electronics Symposium, London, UK (31 May 2012)
10. "Thermodynamics Interactions in Polymer Nanocomposites towards Controlled Nanoparticle Dispersion," American Physical Society Meeting, Boston, Massachutsetts (1 March 2012)
11. "Microemulsions in Asymmetric Polymer Blends," American Physical Society Meeting, Pittsburgh, Pennsylvania (20 March 2009)
12. "Molecular Weight and Composition Dependent Flory-Huggins Parameters," American Physical Society Meeting, New Orleans, Louisiana (10 March 2008)
13. "Composition Dependent χ_{AB} Values in Critical Blends of Polyisobutylene and Deuterated Polybutadiene," American Physical Society Meeting, Denver, Colorado (9 March 2007)

Posters

1. "Block Co-Oligomer Solar Cells: a Case for Small Surfactants," Gordon Research Conference: Polymer Physics, Mount Holyoake, Massachutsetts
   (13 July 2014)
2. "Robust Lamellar Phase Window in Ternary Polymer Blends," Institute of Physics: Physical Aspects of Polymer Science, Guildford, UK (12 September 2011)
3. "The Composition and Molecular Weight Dependence of the Flory-Huggins Interaction Parameter, χ, for Binary Blends of Model Polyolefins Using SANS," American Conference on Neutron Scattering, Santa Fe, New Mexico (13 May 2008)