

Curriculum Vitae

Boxin Zhao, Ph.D

1. PERSONAL DATA

Boxin Zhao, PhD

Associate Professor

Department of Chemical Engineering

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Academic Background

Degree / Year	Ph.D. in Chemical Engineering 2004
Discipline / Institution	Chemical Engineering, McMaster University
Degree / Year	Master of Engineering 1999
Discipline / Institution	Chemical Technology, Institute of Process Engineering, Chinese Academy of Sciences
Degree / Year	Bachelor of Engineering 1996
Discipline / Institution	Mineral Processing Engineering, Central South University, China

Employment and Professional Experience

Position / Institution	Associate Professor, University of Waterloo
Department / Period	Chemical Engineering 07/2014 – present
Position / Institution	Assistant Professor, University of Waterloo
Department / Period	Chemical Engineering 09/2008 – 06/2014
Position / Institution	Member Appointment, University of Waterloo
Department / Period	Waterloo Institute for Nanotechnology 11/2008 – present
Position / Institution	Member Appointment, University of Waterloo
Department / Period	Centre for Bioengineering and Biotechnology 10/2012 – present
Position / Institution	Member Appointment, University of Waterloo
Department / Period	Waterloo Institute for Polymer 10/2011 – present
Position / Institution	Member Appointment, University of Waterloo
Department / Period	The Waterloo Centre for Automotive Research 02/2016 – present

Position / Institution	Member Appointment, University of Waterloo
Department / Period	Centre for Advanced Materials Joining 10/2010 – present
Position / Institution	Postdoctoral Researcher, University of California at Santa Barbara
Department / Period	Chemical Engineering 08/2005 – 08/2008
Position / Institution	Visiting Scientist, Monash University, Australia
Department / Period	Australian Pulp and Paper Institute, 03/2005 – 04/2005
Position / Institution	Postdoctoral Researcher, McMaster University
Department / Period	Chemical Engineering 05/2004 – 08/2005
Position / Institution	Research Assistant, McMaster University
Department / Period	Chemical Engineering 01/2000 – 05/2004
Position / Institution	Teaching Assistant, McMaster University
Department / Period	Chemical Engineering 01/2000 – 05/2004
Position / Institution	Research Assistant, Chinese Academy of Sciences
Department / Period	Institute of Process Engineering 07/1997 – 12/1999

Awards and Honours

2016	Best Oral Presentation Award, 2016 Global Conference on Polymer and Composite Materials, May 20-23, Hangzhou, China
2015	Fulbright Visiting Research Chair at the University of California of Santa Barbara (UCSB), 2015 Aug-Dec.
2012	Early Researcher Awards (ERA) from the Ministry of Economic Development and Innovation of Ontario, Canada
2007 – 2008	IMMS (the Institute for Multiscale Materials Studies) Research Fellow, an honorary position held jointly at the University of California at Santa Barbara and the Los Alamos National Research Laboratory, U.S.A.
2005 – 2007	NSERC (Natural Sciences and Engineering Research Council of Canada) Postdoctoral Fellowship, Canada
2003	Graduate Student Poster Award, Departmental Seminar Day, Department of Chemical Engineering, McMaster University, Canada
2001– 2003	Clifton W. Sherman Graduate Scholarship for doctoral study in science and engineering, McMaster University, Canada
1999	Masters Thesis Award for best dissertations, Chinese Academy of Sciences
1996	IET (International Engineering Technology Inc., USA) Scholarship (20 out of 10000) from the Central South University of Technology (CSU), China
1992 – 1996	CSU Undergraduate Scholarships, China

2. RESEARCH AND SCHOLARSHIP

Research Publications

	Total number	Since Joining UW at 2008
Refereed Journal Papers (published or accepted)	80	60
Refereed Journal Papers (submitted)	6	8
Book chapter	1	1
Patent Application	3	4
Refereed Conference Proceedings	9	9
Invited Talks/Lectures	22	16
Conference Presentations (oral)	41	24
Conference Presentations (posters)	13	12
Total number of publications 175		
Total citations (Google scholar) 1747(1397 since 2012)		
h-Index: 22		
i10-Index: 39		

Research publications are listed below, where * denotes graduate students and ** denotes PDF supervised by B. Zhao; † denotes the corresponding author.

Refereed Journal Papers (submitted)

- S1. Fut (Kuo) Yang*, Aleksander Andrzej Cholewinski*, Wei Zhang**, Wei Wei, Boxin Zhao†, “A Universal Biomimetic Solution for Bonding Hydrogels to both Polymeric and Inorganic Surfaces” **Nature Materials [IF = 38.891]**, Submitted, December 2015 (editor review Jan 6th, external reviews in Feb 6th, 2016, currently under revision)
- S2. Geoff Rivers*†, Pearl Lee-Sullivan, Boxin Zhao, Alex Chen, John Persic, Robert Lyn, In-Situ Resistance Characterization During Cure Progression Of An Electrically Conductive Adhesive, **Journal of Surface Mount Technology [IF = 0.913]**, Submitted, June 2016
- S3. Aleksander Cholewinski, Fut K. Yang, and Boxin Zhao, “Underwater Contact Behaviour of Alginate and Catechol-conjugated Alginate Hydrogel Beads on Tissue-like Gelatin Surface”, **Langmuir**, Submitted, Mar 2017
- S4. Josh Trinidad*, Li Chen**, Angela Lian* and Boxin Zhao, “Solvent Presence and its Impact on the Lap-Shear Strength of SDS-Decorated Graphene Hybrid Electrically Conductive Adhesives”, the **International Journal of Adhesion and Adhesives**, Submitted, Nov 2016

- S5. Neufeld, Ryan; Shahsavan, Hamed; Zhao, Boxin; Abukhdeir, Nasser; “Simulation-based Design of Thermally-driven Actuators using Liquid Crystal Elastomers”, **Macromolecules**, Submitted, Dec 16, 2016
- S6. Geoffrey Rivers, Pearl Lee-Sullivan, Boxin Zhao, “Vitrification during cure produces anomalies and path-dependence in electrical resistance of conductive composites”, **Composite A**, Submitted, Jan 2017

Refereed Journal Papers

- J80. Zihe Pan, Tianchang Wang, Li Chen, Stefan Idziak, Zhaohui Huang,* Boxin Zhao[†], “Effects of Rare Earth Oxide Additive on Surface and Tribological properties of Polyimide Composites”, **Applied Surface Science [IF = 3.150]**, Accepted, Apr 21, 2017
- J79. YiKang Zhou; Wei Zhang; Zihe Pan; Boxin Zhao[†], “Graphene-doped polyaniline nanocomposites as electromagnetic wave absorbing materials”, **Journal of Materials Science: Materials in Electronics [IF = 1.798]**, Accepted, March 2017
- J78. Fatemeh Ferdosian, Zihe Pan, Guchuhan Gao and Boxin Zhao[†], “Bio-Based Adhesives and Evaluations for Wood Composite Application”, **MDPI Polymers [IF = 3.876]**, Accepted, Feb 2017
- J77. Jeffrey d'Eon, Wei Zhang, Li Chen, Richard M. Berry, and Boxin Zhao[†], “Coating nanocrystalline cellulose on polypropylene and its film adhesion and mechanical properties”, **Cellulose [IF = 3.195]**, Accepted, Jan 2017
- J76. Zeinab Jahed, Hamed Shahsavan, Mohit S. Verma, Jacob L. Rogowski, Brandon B. Seo, Boxin Zhao, Ting Y. Tsui, Frank X. Gu, Mohammad R.K. Mofrad, “Bacterial Networks on Hydrophobic Micropillars” **ACS Nano [IF=13.334]**, Accepted, Jan 3, 2017
- J75. Kelvin Liew*, Hamed Shahsavan*, and Boxin Zhao[†], “Functionally Graded Dry Adhesives Based on Film-Terminated Silicone Foam”, **International Journal of Adhesion and Adhesives [IF=1.956]**, Accepted, Nov 2016
- J74. Hamed Shahsavan*, Seyyed Muhammad Salili, Antal Jákl[†], and Boxin Zhao[†], “Thermally Active Liquid Crystal Network Gripper Mimicking the Self-peeling of Gecko Toe Pads”, **Advanced Materials [IF = 18.960]**, Accepted, Oct 2016.
- J73. Zihe Pan*; Tianchang Wang**, Yikang Zhou*, Boxin Zhao[†], Electrically Conductive–Superoleophobic Micropillars for Oil Adhesion Reduction at Low Temperatures, **Applied Surface Science [IF = 3.150]**, Accepted, July 2016
- J72. Josh Trinidad*, Behnam Meschi Amoli*, Wei Zhang**, Rajinder Pal and Boxin Zhao[†], “Effect of SDS Decoration of Graphene on the Rheological and Electrical Properties of Graphene-filled Epoxy/Ag Composites”, **Journal of Materials Science: Materials in Electronics [IF = 1.798]**, Accepted, July 2016
- J71. Ehsan Marzbanrad*, Geoff Rivers*, Pearl Lee-Sullivan, Boxin Zhao, Y. Norman Zhou, Highly repeatable kinetically-independent synthesis of one- and two-dimensional silver nanostructures by oriented attachment, **RSC Advances [IF = 3.289]**, Accepted, June 2016
- J70. Geoff Rivers*, Ehsan Marzbanrad*, Michael David Hook, Pearl Lee-Sullivan, Y. Norman Zhou, Boxin Zhao, “Resistance reductions in silver nanobelt networks via temperature-controlled oriented attachment”, **Nanotechnology [IF=3.573]**, Accepted, May 2016

- J69. Shaofan Sun*, Zihe Pan*, Wei Zhang**, Fut (Kuo) Yang*, Yu-dong Huang, Boxin Zhao†, “Acid treatment of silver flake coatings and its application in the flexible electrical circuits”, **J Materials Science, Materials in Electronic** [IF = 1.798], 27 (5), 4363-4371, 2016
- J68. Zihe Pan*, Tianchang Wang**, Shaofan Sun*, Boxin Zhao†, “Durable Multifunctional Microstructures: Combining Electrical Conductivity and Superoleophobicity”, **ACS Applied Materials & Interfaces** [IF = 7.145] 8 (3), 1795-1804, 2015.
- J67. Ehsan Marzbanrad*, Boxin Zhao, Norman Zhou†, “Porous silver nanosheets: a novel sensing material for nanoscale and microscale gas flow sensors”, **Nanotechnology** [IF=3.573], 26 (44), 445501, 2015.
- J66. Wei Zhang*, Yikang Zhou*, Kun Feng, Josh Trinidad*, Aiping Yu and Boxin Zhao†, “Morphologically Controlled Bio-Inspired Dopamine-Polypyrrole Nanostructures With Tunable Electrical Properties” **Advanced Electronic Materials**, 1, 1500205, 2015 (*Selected by editors for Material Views China*).
- J65. Shaofan Sun*; Zihe Pan*; Fut Yang*; Yudong Huang†, Boxin Zhao†, “A transparent silica colloidal crystal/PDMS composite film and its application for crack suppression of metallic coatings”, **Journal of Colloid and Interface Science** [IF = 3.782], 461:136-43, 2016
- J64. Yun-Seok Jun, Serubbabel Sy, Wook Ahn, Hadis Zarrin, Lathankan Rasen, Ricky Tjandra, Behnam Meschi Amoli*, Boxin Zhao, Gordon Chiu, Aiping Yu, “Highly Conductive Interconnected Graphene Foam Based Polymer Composite”, **Carbon** [IF = 6.198], 95: 653-658, 2015
- J63. Zihe Pan*, Wei Zhang*, Andrew Kowalski, Boxin Zhao†, “Oleophobicity of Biomimetic Micro-patterned Surface and Its Effect on the Adhesion of Frozen Oil” **Langmuir** [IF = 3.993], 31(36):9901-10, 2015
- J62. Hamed Shahsavan*, Seyyed Muhammad Salili, Antal Jákli†, and Boxin Zhao†, "Smart Muscle-driven Self-cleaning of Biomimetic Microstructures from Liquid Crystal Elastomers", **Advanced Materials** [IF = 18.960], 27, 6828-6833, 2015 – *Cover Image*.
- J61. Brendan McDonald*, Poonam Patel, Boxin Zhao†, “Droplet Freezing and Ice Adhesion Measurement on Super-cooled Hydrophobic Surfaces”, **J. Adhesion** [IF = 1.409], Accepted, DOI: 10.1080/00218464.2015.1077329, 2015.
- J60. Hamed Shahsavan*; Jesse Quinn; Jeffrey d'Eon; Boxin Zhao†, “Surface Modification of Polydimethylsiloxane Elastomer for Stable Hydrophilicity, Optical Transparency and Film Lubrication”, **Colloids and Surfaces A: Physicochemical and Engineering Aspects** [IF = 2.760], 482, 267-275, 2015.
- J59. Wei Zhang*; Behnam Meschi Amoli*; Jeffrey d'Eon; Boxin Zhao†; Alex Chen, “Application of Novel Dopamine-polypyrrole Nanofibers for Electrically Conductive Adhesives”, **Journal of Surface Mount Technology** [IF = 0.913], 28(3), 26-31, 2015.
- J58. Behnam Meschi Amoli*; Josh Trinidad*; Geoffrey Rivers*; Abel Sy; Paola Russo; Aiping Yu; Norman Y Zhou; Boxin Zhao†, “SDS-stabilized graphene nanosheets for highly electrically conductive adhesives”, **Carbon** [IF = 6.198], 2015, 91, 188-199
- J57. Behnam Meschi Amoli*; Anming Hu; Norman Y Zhou; Boxin Zhao†, “Recent Progresses on Hybrid Micro-nano Filler Systems for Developing Advanced Electrically Conductive Adhesives”, **J. Materials Science: Materials in Electronics** [IF = 1.798], 2015,1-16
- J56. Wei Zhang*, Zihe Pan*, Fut K. Yang, and Boxin Zhao†, “A Facile In-Situ Approach to Polypyrrole Functionalization through Bio-Inspired Catechols”, **Advanced Functional Materials** [IF = 11.382], 2015, 25(10), 1588-1597

- J55. Behnam Meschi Amoli*, Anming Hu, Y. Norman Zhou and Boxin Zhao[†], “Highly Electrically Conductive Adhesives using Silver Nanoparticle(Ag)-Decorated Graphene: the effect of NPs sintering on the electrical conductivity improvement”, **J. Materials Science: Materials in Electronics** [IF = 1.798], 2015, 26(1), 590-600
- J54. E. Marzbanrad*, G. Rivers, P. Peng, B. Zhao and Y. Zhou[†], “How Morphology and Surface Crystal Texture Affect Thermal Stability of a Metallic Nanoparticle: the Case of Silver Nanobelts and Pentagonal Silver Nanowires”, **Physical Chemistry Chemical Physics** [IF = 4.449], 2015, 17(1), 315-324
- J53. Zihe Pan*; Hamed Shahsavan*; Wei Zhang*; Fut K Yang; Boxin Zhao[†], “Superhydro-oleophobic Bio-inspired Polydimethylsiloxane Micropillared Surface via FDTD Coating/Blending Approaches”, **Applied Surface Science** [IF = 3.150], 2015, 324, 612-620
- J52. Shaofan Sun*, Yudong Huang, Boxin Zhao[†], “Formation of Silica Colloidal Crystals on Soft Hydrophobic vs Rigid Hydrophilic Surfaces”, **Colloids and Surfaces A: Physicochemical and Engineering Aspects** [IF = 2.760], 2015, 467, 180-187
- J51. Junao Tang, Micky Lee, Wei Zhang*, Boxin Zhao, Richard Berry, Kam Tam, “Dual Responsive Pickering Emulsion Stabilized by Poly[2-(dimethylamino)ethyl methacrylate] Grafted Cellulose Nanocrystals”, **Biomacromolecules** [IF = 5.583], 2014, 15(8), 3052-3060
- J50. Alek Cholewinski*, Josh Trinidad*, Brendan McDonald*, Boxin Zhao[†], “Bio-inspired Polydimethylsiloxane-Functionalized Silica Particles - Epoxy Bilayer as a Robust Superhydrophobic Surface Coating”, **Surface and Coatings Technology** [IF = 2.139], 2014, 254, 230-237
- J49. Sarang P. Gumfekar*, Wenjie Wang* and Boxin Zhao[†], “In-situ Doped Polyaniline Nanotubes for Applications in Flexible Conductive Coatings”, **Macromolecular Materials and Engineering** [IF = 2.834], 2014, 299(8), 966-976
- J48. Hamed Shahsavan*; Boxin Zhao[†], “Bio-inspired Functionally Graded Adhesive Materials: Synergetic Interplay of Top Viscous-elastic Layers with Base Micropillars”, **Macromolecules** [IF = 5.554], 2013, 47(1), 353-364
- J47. Geoffrey Rivers*, Allan Rogalsky, Pearl Lee-Sullivan, Boxin Zhao, “Thermal Analysis of Epoxy-Based Nanocomposites: Have Solvent Effects been Overlooked?”, **Journal of Thermal Analysis and Calorimetry** [IF = 1.781], 2015, 119(2), 797-805
- J46. Wei Zhang*, Fut K. Yang*, Zihe Pan*, Jian Zhang, and Boxin Zhao[†], “Bio-Inspired Dopamine Functionalization of Polypyrrole for Improved Adhesion and Conductivity” **Macromolecular Rapid Communications** [IF = 4.638], 2014, 35(3), 350-354
- J45. Brendan McDonald*, Poonam Patel, Boxin Zhao*, “Micro-Structured Polymer Film Mimicking the Trembling Aspen Leaf”, **Chemical Engineering & Process Techniques**, 2013, 1(2):10.1.
- J44. Behnam Meschi Amoli*, Ehsan Marzbanrad*, Anming Hu, Y. Norman Zhou and Boxin Zhao[†], “Electrical Conductive Adhesives Enhanced with High-Aspect-Ratio Silver Nanobelts”, **Macromolecular Materials and Engineering** [IF = 2.834], 2014, 299(6), 739-747.
- J43. Ehsan Marzbanrad*, Anming Hu[†], Boxin Zhao and Y. Norman Zhou[†], “Room Temperature Nanojoining of Triangular and Hexagonal Silver Nanodisks”, **Journal of Physical Chemistry C** [IF = 4.509], 2013, 117 (32), pp 16665–16676

- J42. Brendan McDonald*, Hamed Shahsavan and Boxin Zhao[†] “Biomimetic Micro-Patterning of Epoxy Coatings for Enhanced Hydrophobicity and Low Friction”, **Macromolecular Materials and Engineering** [IF = 2.834], 2014, 299(2), 237-247. (*McDonald won the 2012 Excellence in Thermoset Polymer Research Award for this work.*)
- J41. Sarang P. Gumfekar*, Behnam Meschi Amoli*, Alex Chen and Boxin Zhao[†], “Polyaniline-tailored Electromechanical Responses of the Silver/Epoxy Conductive Adhesive Composites”, **Journal of Polymer Science: Part B** [IF = 3.318], 2013, 51, 1448–1455
- J40. Wenjie Wang*, Sarang P. Gumfekar*, Qingjie Jiao, and Boxin Zhao[†] “Ferrite-grafted Polyaniline Nanofibers as Electromagnetic Shielding Materials”, **Journal of Materials Chemistry C** [IF = 4.509], 2013, 1 (16), 2851 - 2859
- J39. Wei Zhang*, Fut K. Yang*, Yougun Han*, Ravi Gaikwad, Zoya Leonenko and Boxin Zhao[†], “Surface and Tribological Behaviors of the Bio-inspired Polydopamine Thin Films in Dry and Wet Conditions”, **Biomacromolecules** [IF = 5.583], 2013, 14, 394–405
- J38. Dhamodaran Arunbabu**, Hamed Shahsavan*, Wei Zhang* and Boxin Zhao[†], “Poly(AAc-co-MBA) Hydrogel Films: Adhesive and Mechanical Properties in Aqueous Medium”, **Journal of Physical Chemistry B** [IF = 3.187], 2013, 117 (1), pp 441–449
- J37. Behnam Meschi Amoli*, Sarang Gumfekar*, Anming Hu, Y. Norman Zhou and Boxin Zhao[†], “Thiocarboxylate Functionalization of Silver Nanoparticles: Effect of Chain Length on the Electrical Conductivity of Nanoparticles and Their Polymer Composites”, **Journal of Materials Chemistry** [IF = 6.626], 2012, 22, 20048-20056
- J36. Hamed Shahsavan* and Boxin Zhao[†], “Biologically inspired enhancement of pressure-sensitive adhesives using a thin film-terminated fibrillar interface”, **Soft Matter** [IF = 3.798], 2012, 8, 8243-8243 – *Cover Image*
- J35. Peng Peng, Anming Hu, Boxin Zhao, Adrian P. Gerlich, Y. Norman Zhou[†], “Reinforcement of Ag Nanoparticle Paste with Nanowires for Low Temperature Pressureless Bonding”, **Journal of Material Science** [IF = 2.302], 2012, 47 (19), 6801-6811
- J34. Fut Kuo Yang*, Wei Zhang*, Yougun Han*, Serge Yoffe, Yungchi Cho*, and Boxin Zhao[†], “Contact” of Nanoscale Stiff Films, **Langmuir** [IF = 3.993], 2012 28 (25), pp 9562–9572
- J33. Peng Peng, Anming Hu, Hong Huang, Adrian P. Gerlich, Boxin Zhao and Y. Norman Zhou, “Room-Temperature Pressureless Bonding with Silver Nanowire Paste: Towards Organic Electronic and Heat-Sensitive Functional Devices Packaging”, **Journal of Material Chemistry** [IF = 6.626], 2012, 22, 12997-13001
- J32. Hadi Izadi*, Boxin Zhao[†], Yougun Han*, Neil McManus and Alexander Penlidis, “Teflon AF Hierarchical Nanopillars with Dry/Wet Switchable Adhesive Properties”, **Journal of Polymer Science B: polymer physics** [IF = 3.318], 2012, 50(12) 846-851 (*Selected by Editors for Materials Views.*)
- J31. Hamed Shahsavan*, Dhamodaran Arunbabu** and Boxin Zhao[†], "Biomimetic Modification of Polymeric Surfaces - A Promising Pathway for Tuning of Wetting and Adhesion", **Macromolecular Materials and Engineering** [IF = 2.834], 2012, 297, 743-760 (*Invited Feature Article*)
- J30. Yougun Han*, Allan D. Rogalsky, Boxin Zhao and Hyock Ju Kwon[†], "The Application of Digital Image Techniques to Determine the Large Strain Behaviours of Silicone Rubbers", **Polymer Engineering & Science** [IF = 1.719], 52(4): 826-834, 2012

- J29. Hamed Shahsavan* and Boxin Zhao[†], "Conformal Adhesion Enhancement on Biomimetic Microstructured Surfaces", **Langmuir** [IF = 3.993], 2011, 27(12), 7732 – 7742
- J28. Fut (Kuo) Yang* and Boxin Zhao[†], "Adhesion Properties of Self-Polymerized Dopamine Thin Film", **The Open Surface Science Journal**, 2011, 3, 115 -122
- J27. Boxin Zhao[†] and Hyock Ju Kwon, "Adhesion of Polymers in Paper Products from the Macroscopic to Molecular Levels - an Overview", **Journal of Adhesion Science and Technology** [IF = 0.863], 2011, 25, 557-579
- J26. Hongbo Zeng, Boxin Zhao, Jacob N. Israelachvili[†], and Matthew Tirrell, "Liquid- to Solidlike Failure Mechanism of Thin Polymer Films at the Micro- and Nano-scale", **Macromolecules** [IF = 5.554], 2010, 43, 538-542
- J25. Noshir Pesika, Hongbo Zeng, Kai Kristiansen, Yu Tian, Boxin Zhao, Kellar Autumn, and Jacob Israelachvili[†], "Gecko Adhesion Pad: A Smart Surface?", **Journal of Physics Condensed Matter** [IF = 2.209], 2009, 21, 464132-464136
- J24. Boxin Zhao[†], Noshir Pesika, Hongbo Zeng, Zhengsong Wei, Yunfei Chen, Kellar Autumn, Kimberly Turner, and Jacob Israelachvili[†], "Role of Tilted Adhesion Fibrils (setae) in the Adhesion and Locomotion of Gecko-like Systems", **Journal of Physical Chemistry B** [IF = 3.187], 2009, 113, 3615 – 3621
- J23. Noshir S. Pesika, Nick Gravish, Matt Wilkinson, Boxin Zhao, Hongbo Zeng, Yu Tian, and Jacob Israelachvili[†], and Kellar Autumn, "The Crowding Model as a Tool to Understand and Fabricate Gecko-Inspired Dry Adhesives", **Journal of Adhesion** [IF = 1.409], 2009, 85, 512 – 525
- J22. Hongbo Zeng, Noshir Pesika, Yu Tian, Boxin Zhao, Yunfei Chen, Matthew Tirrell, Kimberly L. Turner, and Jacob N. Israelachvili[†], "Frictional Adhesion of Patterned Surfaces and Implications for Gecko and Biomimetic Systems", **Langmuir** [IF = 3.993], 2009, 25(13), 7486 – 7495
- J21. Hongbo Zeng, Yu Tian, Boxin Zhao, Matthew Tirrell, and Jacob Israelachvili[†], "Friction at the Liquid/Liquid Interface of Two Immiscible Polymer Films", **Langmuir** [IF = 3.993], 2009, 25(9), 4954 – 4964
- J20. George Greene, Bruno Zappone, Boxin Zhao, Olle Soderberg, Daniel Topgaard, Gabriel Rata, and Jacob Israelachvili[†], "Changes in Pore Morphology and Fluid Transport in Compressed Articular Cartilage and the Implications for Joint Lubrication", **Biomaterials** [IF = 8.387], 2008, 29(33), 4455 – 4462
- J19. Boxin Zhao, Kenny Rosenberg, Noshir Pesika, Patricia McGuiggan, Kellar Autumn, and Jacob Israelachvili[†], "Adhesion and Friction Force Coupling of Gecko Setal Arrays: Implications for Structured Adhesive Surfaces", **Langmuir** [IF = 3.993], 2008, 24, 1517 – 1524
- J18. Hongbo Zeng, Yu Tian, Boxin Zhao, Matthew Tirrell, and Jacob Israelachvili[†], "Transient Interfacial Patterns and Instabilities Associated with Liquid Film Adhesion and Spreading", **Langmuir** [IF = 3.993], 2007, 23, 6126 – 6135
- J17. Hongbo Zeng, Boxin Zhao, Yu Tian, Matthew Tirrell, Gary Leal, and Jacob Israelachvili[†], "Transient Surface Patterns during the Adhesion and Coalescence of Thin Liquid Films", **Soft Matter** [IF = 3.798], 2007, 3, 88 – 93
- J16. Noshir Pesika, Yu Tian, Boxin Zhao, Kenny Rosenberg, Hongbo Zeng, Patricia McGuiggan, Kellar Autumn, and Jacob Israelachvili[†], "Peel-zone model of tape peeling based on the gecko adhesive system", **Journal of Adhesion** [IF = 1.409], 2007, 83, 383 – 40

- J15. Yu Tian, Hongbo Zeng, Travers Anderson, Patricia McGuiggan, Boxin Zhao, and Jacob Israelachvili[†], "Transient Filamentous Network Structure of a Colloidal Suspension Excited by Stepwise Electric Fields", **Physical Review E** [IF = 2.252], 2007, 75(11409), 1 – 6
- J14. Hongbo Zeng, Yu Tian, Boxin Zhao, Matthew Tirrell, and Jacob Israelachvili[†] "Transient Surface Patterns and Instabilities at Adhesive Junctions of Viscoelastic Films", **Macromolecules** [IF = 5.554], 2007, 40, 8409 – 8422
- J13. Boxin Zhao, Hongbo Zeng, Yu Tian, and Jacob Israelachvili[†], Adhesion and Detachment Mechanisms of Sugar Surfaces from the Solid (glassy) to Liquid (viscous) States", **Proc Natl Acad Sci USA** [IF = 9.423], 2007, 103(52), 9624 – 9629
- J12. Boxin Zhao, Lulu Bursztyn, and Robert Pelton[†], "A Simple Approach for Quantifying the Thermodynamic Potential of Polymer-Polymer Adhesion", **Journal of Adhesion** [IF = 1.409], 2006, 82(2), 121–133
- J11. Yu Tian, Noshir Pesika, Hongbo Zeng, Kenny Rosenberg, Boxin Zhao, Patricia McGuiggan, Kellar Autumn, and Jacob Israelachvili[†] , "Adhesion and Friction in Gecko Toe Attachment and Detachment", **Proc Natl Acad Sci USA** [IF = 9.423], 2006, 103(51), 9320 – 9325
- J10. Boxin Zhao and Robert Pelton[†], "The Initiation of Tape Peeling Induced Paper Delamination", **Journal of Pulp and Paper Science** [IF = 0.680], 2005, 31(1), 33 – 38
- J9. Boxin Zhao, Luis Anderson, Alison Banks, and Robert Pelton[†], "Paper Properties Affecting Tape Adhesion", **Journal of Adhesion Science and Technology** [IF = 0.863], 2004, 18(14), 1625 – 1642
- J8. Boxin Zhao and Robert Pelton[†], "Using Peel as a Measure of Paper Surface Strength", **Tappi Journal** [IF = 0.702], 2004, 87(7), 3 – 7
- J7. Boxin Zhao and Robert Pelton[†], "Peel Adhesion to Paper - Interpreting Peel Curves", **Journal of Adhesion Science and Technology** [IF = 0.863], 2003, 17(6), 815 – 830
- J6. Boxin Zhao and Robert Pelton[†], "A New Analysis of Peeling Data from Paper", **Journal of Material Science Letter** [IF = 0.711], 2003, 22, 265 – 266
- J5. Jiang Yu[†], Huizhou Liu, Boxin Zhao, and Jiayong Chen, "Structural Effect and Composition of Anionic Copolymers On Protein Flocculation", **Journal of Dispersion Science and Technology** [IF = 1.112], 2001, 22, 22 – 29
- J4. Jiang Yu, Boxin Zhao, Huizhou Liu[†], and Jiayong Chen, "Removal of Water-Soluble Proteins from Fermentation Broth of Penicillin and Its Effects on Emulsification During Solvent Extraction", **Huagong Yejin** (In Chinese), 1999, 20(4), 423 – 427
- J3. Boxin Zhao, Jiang Yu, and Huizhou Liu[†], "Interaction between Aqueous Protein and Partially Hydrolyzed Polyacrylamide as Flocculating Agent", **Huagong Yejin** (In Chinese), 1999, 20(2), 162 – 166
- J2. Jianbin Hui, Boxin Zhao, Huizhou Liu[†], and Jiayong Chen, "Neutral Reaction, Sodium Polyacrylate/Polyacrylic Acid, and Intelligent Hydrogels Sensitive to the Changes of Proton Concentration in Solution", **Huaxue Tongbao** (In Chinese), 1999, 7, 50 – 53
- J1. Leming Ou, Qiming Feng[†], Jianhua Chen, Boxin Zhao, Chonghui Huang, Lanying Wang, Jiangou Liu, and Jiahui Dong, "Study on New-Type Depressant for for Chalcopyrite in Bulk Concentrate of Cu And Mo", **Kuanye Gongcheng** (In Chinese), 1998, 18(1), 34 – 37

Book Chapter

- B1. Boxin Zhao[†], Dhamodaran Arunbabu** and Brendan McDonald*, “Polymers, Adhesion and Paper Materials” in *Polymer Adhesion, Friction and Lubrication* (ed H. Zeng), John Wiley & Sons, Inc., Hoboken, NJ, USA. 2013, doi: 10.1002 /9781118505175.ch12

Patent Development

- P1. Boxin Zhao, Wei Zhang, Fut (Kuo) Yang, “Fabrication, Composition and Application of Electrically Conductive Catechol-Polypyrrole Nanofibers”, Provisional US Patent Application # 62/054,192, Filed on September 23, 2014
- P2. Boxin Zhao and Fut (Kuo) Yang, “A novel robust primer for enhancing interfacial bonding: composition, methods and applications”, Provisional US Patent Application # 61/882,255, Filed on September 25, 2013
- P3. Fut (Kuo) Yang and Boxin Zhao, “Method and Apparatus for Adhesive Bonding in an Aqueous Medium”, PCT application (#PCT/CA2012/ CA2012/050855) filed on November 27, 2012

Refereed conference proceedings

- CR9. Yougun Han*, Fut (Kuo) Yang*, Hyock Ju Kwon and Boxin Zhao[†], “Contact Dynamics Characterization of Polymer Thin Films Using a JKR-type Apparatus”, Proceedings of the 2nd International Conference on Nanotechnology: Fundamentals and Applications Ottawa, Ontario, Canada, 28-29 July 2011
- CR8. Yougun Han*, Dong-Woo Kim, Boxin Zhao, H.J. Kwon[†] "Diagnosis of Breast Tumor Using 2D and 3D Ultrasound Images", Proceedings of the ASME 2011 International Mechanical Engineering Congress & Exposition IMECE2011 November 11-17, 2011, Denver, Colorado, USA, 6 pages
- CR7. H.J. Kwon[†], B. Zhao, P.N.P. Rao, "Application of Digital Volume Correlation Algorithm to Cell Mechanics" Proceedings of the ASME International Mechanical Engineering Congress, 2010, 11: 365-371
- CR6. Boxin Zhao, Noshir Pesika, Hongbo Zeng, Yunfei Chen, Kimberly L. Turner, and Jacob Israelachvili[†], “Characterizations of the Gecko Adhesive System for Responsive and Adaptable Adhesion for the Robotic Applications”, Proceedings of Pressure Sensitive Tape Council Meeting, Baltimore, May 6– 9, 2008
- CR5. Hongbo Zeng, Yu Tian, Boxin Zhao, Matthew Tirrell, Gary Leal, and Jacob Israelachvili[†], “Adhesive contact mechanics: from elastic solid-like to viscoelastic or viscous liquid-like behavior”, Proceedings of 30th Annual Meeting of The Adhesion Society, Tampa , Florida, Feb. 15– 18, 2007
- CR4. Noshir Pesika, Yu Tian, Boxin Zhao, Kenney Rosenberg, Hongbo Zeng, Patricia McGuiggan, Kellar Autumn, and Jacob Israelachvili[†], “Peel-zone model of tape peeling based on the gecko adhesive system”, Proceedings of 30th Annual Meeting of The Adhesion Society, Tampa, Florida, Feb. 15– 18, 2007
- CR3. Boxin Zhao, Robert Pelton[†] and Vasso Bartzoka, "Peeling pressure sensitive tape from paper - an overview", Proceedings of the 13th Fundamental Research Symposium, FRC, Cambridge, Sep. 2005

- CR2. Boxin Zhao, Luis Anderson, Alison Banks, and Robert Pelton[†], “Paper Properties Affecting Tape Adhesion — Using Peel Test in Combination with Multivariate Regression Analysis”, Proceedings of 27th Annual Meeting of The Adhesion Society, Wilmington, NC, Feb. 16, 2004
- CR1. Boxin Zhao and Robert Pelton[†], “Interaction of Pressure Sensitive Adhesives with Paper”, Proceedings of 24th Annual Meeting of The Adhesion Society, Williamsburg, USA, Feb. 26– 28, 2001

Invited talks/seminars

- T22. Boxin Zhao, “Development and utilization of conductive nanofillers in electrically conductive adhesives”, 2017 Global Conference on Polymer and Composite Materials, Guangzhou, China, May 23-25, 2017.
- T21. Boxin Zhao, “High-performance Electrically Conductive Adhesives Enhanced with Nanofillers”, 3rd International Conference on Nanojoining and Microjoining (NMJ2016), Niagara Falls, Canada, September 25-28.
- T20. Boxin Zhao, “Bioinspired Catechol-Polypyrrole Nanostructures With Tunable Electrical Properties”, Canadian Society of Chemistry Annual conference, Halifax, N.S. June 5-9, 2016
- T19. Boxin Zhao, “Biomimicry and Interfacial Material Engineering”, Taiyuan University of Science and Technology, China, May 25, 2016
- T18. Boxin Zhao, “Biomimetic adhesion and its application for developing functional polymeric materials”, 2016 Global Conference on Polymer and Composite Materials, Hangzhou, China, May 20-23, 2016.
- T17. Boxin Zhao, “Bio-inspired Polydopamine Thin Films and Dopamine-Polypyrrole Electrically Conductive Nanocomposites”, Beijing University of Chemical Technology, May 10, 2016
- T16. Boxin Zhao, “Contact Dynamics of Interfacial Materials and Thin Films: Bioadhesion and Biomimicry”, Liquid Crystal Institute, Kent State University, April 20, 2016
- T15. Boxin Zhao, “Biomimetic Adhesion and Its Applications in Functional Materials”, Department of Materials Science and Engineering, Tsinghua University, Nov 14, 2014
- T14. Boxin Zhao, “Biomimetic Adhesion and Its Applications in Functional Materials”, Key Laboratory of Green Process and Engineering, Institute of Process Engineering, Chinese Academy of Sciences, Nov 14, 2014
- T13. Boxin Zhao, “Adhesion, Surface Forces and Micro-mechanical Properties of “Soft” Materials - An Overview”, Ha’erbin Institute of Technology (HIT), Nov 18, 2014
- T12. Boxin Zhao, “Adhesion and Contact Dynamics of “Soft” Materials and Thin Films”, 3rd Canada-Brazil Workshop on Sustainable Nanomaterials, Belo Horizonte, Brazil, May 25-28, 2014
- T11. Boxin Zhao, “Development of Micro and Nano-structured Materials: From Biomimicry to Electronic Packaging” industry-academic partnering event “Reinventing Canada's Electronics Landscape “, hosted by Celestica and the University of Waterloo with support from NSERC, Kitchener, March 26, 2013
- T10. Boxin Zhao, “Adhesion, Surface Forces & Micro-mechanical Properties of Soft Materials”, New Directions in Italian-Canadian Manufacturing Workshop, Waterloo, October 4, 2012

- T9. Boxin Zhao, “Adhesion and Detachment Characteristics of “Soft” Adhesive Systems”, Xerox, Mississauga, April 29, 2011
- T8. Boxin Zhao, “Adhesion and Detachment Characteristics of “Soft” Adhesive Systems”, Celestica, Toronto, May 25, 2010
- T7. Boxin Zhao, "Adhesion and Detachment Characteristics of soft Adhesive Systems: from pressure-sensitive adhesive tapes to gecko hairy foot pads", the Thirty-First Annual Symposium on Polymer Science/Engineering, February, 2009
- T6. Boxin Zhao, Noshir Pesika, Hongbo Zeng, Yunfei Chen, Kimberly L. Turner, and Jacob Israelachvili, “Characterizations of the Gecko Adhesive System for Responsive and Adaptable Adhesion for the Robotic Applications”, PSTC meeting, Baltimore, May 6–9, 2008
- T5. Boxin Zhao, Hongbo Zeng, Yu Tian, and Jacob Israelachvili, “ Dynamic Adhesion and Detachment/fracture of Sugar Surfaces on Micro and Nano- scales – Modeling Solid and Liquid-like Failure Mechanism”, International SFA conference, Cancun, Mexico, May 5–12, 2006
- T4. Boxin Zhao, “Adhesives/paper Interactions”, UPM Raflatac, Tampere, Finland, September 20–26, 2003
- T3. Boxin Zhao, “Paper Delamination in Peeling”, KCL, Espoo, Finland, September 20–26, 2003
- T2. Boxin Zhao, “Adhesive/Paper Interactions – Peeling Tape from Paper ”, Fiber and Polymer Technology Department and Solid Mechanics Department, KTH University, Stockholm, Sweden, September 26–30, 2003
- T1. Boxin Zhao and Robert Pelton, “The Adhesion between PSAs Tape and Paper”, 3M London Canada, May, 2002

Refereed Conference Abstract and Oral Presentations (the presenter is underlined)

- CO41. Zeinab Jahed, Hamed Shahsavan, Mohit S. Verma, Jacob L. Rogowski, Brandon B. Seo , Boxin Zhao, Ting Y. Tsui, Frank X. Gu, Mohammad R.K. Mofrad, “Bacterial Micro-patterning on Hydrophobic Micropillars”, Biomedical Engineering Society (BMES) Annual Meeting, Phoenix, October 11-14, 2017.
- CO40. Zihe Pan, Boxin Zhao, “Electrically Conductive Superhydro-Oleophobic Composite Micropillars for Frozen Oils/Ice Adhesion Reduction at Low Temperatures”, 2017 Adhesion Society Annual Meeting, St Petersburg, FL, Feb, 2017
- CO39. Hamed Shahsavan , Mohammad Salli, Antony Jakli, Boxin Zhao, “Switchable Biomimetic Fibrillar Adhesives Based on Liquid Crystal Networks ” 66th Canadian Chemical Engineering Conference, Quebec City, Canada, October 16-19, 2016
- CO38. Ryan Neufeld, Hamed Shahsavan, Boxin Zhao, Nasser Mohieddin Abukhdeir, “Simulation-aided Design of Liquid Crystal Elastomer-based Actuators”, 66th Canadian Chemical Engineering Conference, Quebec City, Canada, October 16-19, 2016
- CO37. Kelvin Liew, Hamed Shahsavan, Boxin Zhao, “Sponge-based Peel-able Functionally Graded Dry Adhesives for Mounting Applications,” 66th Canadian Chemical Engineering Conference, Quebec City, Canada, October 16-19, 2016
- CO36. Shaofan Sun, Zihe Pan, Fut Yang, Yudong Huang, Boxin Zhao, “ A transparent silica colloidal crystal/PDMS composite and its application for crack suppression of metallic

- coating”, 2016 Global Conference on Polymer and Composite Materials, Hangzhou, China, May 20-23, 2016.
- CO35. Josh Trinidad*, Wei Zhang**, Boxin Zhao, Alex Chen, John Persic; Robert Lyn, “Implementing Pedot:Pss As A Co-Filler For Electrically Conductive Adhesive Applications” International Conference on Soldering and Reliability (ICSR), Toronto Canada, May 9-11, 2016
- CO34. Geoff Rivers, Pearl Lee-Sullivan, and Boxin Zhao, Alex Chen, John Persic; Robert Lyn, “In-Situ Resistance Characterization During Cure Progression Of A Conductive Adhesive” International Conference on Soldering and Reliability (ICSR), Toronto Canada, May 9-11, 2016
- CO33. Hamed Shahsavan*, Seyyed Muhammad Salili, Antal Jáklí, and Boxin Zhao, “Smart Muscle-driven Manipulation of Gecko-inspired Structures by Liquid Crystal Elastomers”, 2016 Annual meeting of the Adhesion Society, Feb 21-24, San Antonio, TX.
- CO32. Hamed Shahsavan*, Seyyed Muhammad Salili, Antal Jáklí, and Boxin Zhao, “Liquid Crystal Elastomers and Networks with Hybrid Alignment for Novel Interfacial Engineering Applications”, 8th International Liquid Crystal Elastomer Conference (ILCEC15), October 2-7, Erice, Italy
- CO31. Behnam Meschi Amoli, Josh Trinidad; Norman Y. Zhou, Boxin Zhao, Alex Chen, John Persic and Robert Lyn, “The Use Of Graphene To Replace Silver In Electrically Conductive Adhesives - An Study On Electrical Conductivity And Mechanical Properties”, International Conference on Soldering and Reliability (ICSR), Markham, Ontario, Canada May 19-21, 2015 (Accepted in 2015)
- CO30. Wei Zhang*, Behnam Meschi Amoli*, Jeffrey d'Eon, Boxin Zhao, “Application of Novel Dopamine-Polypyrrole Nanofibers for Electrically Conductive Adhesives”, Surface Mount Technology Association (STMA) Pan Pacific Symposium, Kauai, Hawaii, February 2-5, 2015
- CO29. Wei Zhang, Fut K. Yang and Boxin Zhao, “Polydopamine Nanoscale Thin Films as Multifunctional Coatings”, 19th International Vacuum Congress IVC-19(jointly organized with) International Conference on Nanoscience and Technology ICN+T 2013, Paris, France, Sept 9-13, 2013
- CO28. Hamed Shahsavan*, Brendan McDonald* and Boxin Zhao[†], “Fabrication and Characterizations of Biomimetic Micro and Nano Structured Surfaces”, 96th Canadian Chemistry Conference, Quebec City, May 26-30, 2013
- CO27. Geoff Rivers*, Allan Rogalsky, Pearl Lee-Sullivan[†], and Boxin Zhao,” Misinterpretation of cure data analysis in epoxy-based nanocomposites, 23rd CTAS Annual workshop and exhibition, Oshawa, Ontario, May 7-8, 2013
- CO26. Hamed Shahsavan* and Boxin Zhao[†], “Gecko-inspired pressure sensitive adhesives: a new class of hybrid adhesives”, 36th Annual Meeting of The Society of Adhesion, Daytona Beach, Florida, March 2013
- CO25. Fut Yang*, Wei Zhang*, and Boxin Zhao[†], "Contact dynamics of marine mussel-inspired polydopamine thin films", Biomedical Engineering Society (BMES) Annual Meeting, October 24-12, 2012
- CO24. Brendan McDonald* and Boxin Zhao[†], “Biomimetic Micro-Structured Surfaces: Pattern Transfer and Fabrication of Icephobic Epoxy Surfaces”, the 3rd International Conference on Nanotechnology: Fundamentals and Applications, Montreal, Quebec, Canada, 7-9 August 2012

- CO23. Behnam Meschi Amoli*, Boxin Zhao[†], Anming Hu, and Norman Zhou, “Surface Functionalizations of Silver Nanoparticles as Conductive Fillers in Adhesive Nanocomposites” the 3rd International Conference on Nanotechnology: Fundamentals and Applications, Montreal, Quebec, Canada, 7-9 August 2012
- CO22. Sarang P. Gumfekar* and Boxin Zhao[†], “Fabrication and Characterization of Silver-Polyaniline-Epoxy Electrical Conductive Adhesive”, the Thirty-Fourth Annual Symposium on Polymer Science/Engineering, May, 2012
- CO21. Sarang P. Gumfekar*, Boxin Zhao[†], Alex Chen, “Silver-Polyaniline-Epoxy Electrical Conductive Adhesives – A Percolation Threshold Analysis”, Pan Pacific Microelectronics Symposium, Hawaii, USA. 14-16 February 2012 (*invited and presented by the conference organizer Phil Isaacs*)
- CO20. Sarang P. Gumfekar*, Alex Chen and Boxin Zhao[†], “Silver-Polyaniline-Epoxy Electrical Conductive Adhesives – A Percolation Threshold Analysis”, 13th Electronics Packaging Technology Conference, Singapore, December 7-9, 2011
- CO19. Hamed Shahsavan* and Boxin Zhao[†], “Conformal Contact Behaviour of Biomimetic Micro-structured Surfaces”, Materials Research Society (MRS) Fall Meeting, Boston, November 28 – December 2, 2011
- CO18. Boxin Zhao, “Adhesion and Failure Mechanisms of Nanoscale Thin Adhesive Films”, 61th Canadian Chemical Engineering Conference, London, Ontario, October, 2011
- CO17. Boxin Zhao[†], Aaron Katz*, Shengyan Liu*, Frank Gu, and Paniz Sheikholeslami, “Contact Adhesion Studies of Hydrogels for Biomedical Applications”, Materials Research Society (MRS) Fall Meeting, Boston, November 29 – December 3, 2010
- CO16. Boxin Zhao, “Adhesion and failure mechanisms of nanoscale thin adhesive films from the solid (glassy) to liquid (viscous) states”, Materials Science and Technology 2010 Conference, Houston, Texas, October 17– 21, 2010
- CO15. Boxin Zhao[†] and Jacob Israelachvili, “Characterizations of gecko “finger-like” pads: implications for designing smart adhesives world congress of chemical engineering, Montreal, QC, August 23–27, 2009
- CO14. Boxin Zhao, “Adhesion and Detachment Mechanisms of Glassy Glucose Surfaces and Their Implications in the Action of Inter-fiber Bonding”, the 7th International Paper and Coating Chemistry Symposium, Hamilton, June 10, 2009
- CO13. Hongbo Zeng, Yu Tian, Boxin Zhao, Matthew Tirrell, and Jacob Israelachvili[†], “Detachment and attachment mechanisms of viscoelastic fluids” , The XVth International Congress on Rheology, Monterey, California, August 3 –8, 2008
- CO12. Boxin Zhao, Kenny J. Rosenberg, Noshir Pesika, Patty McGuiggan, Kellar Autumn, and Jacob Israelachvili[†], “Adhesion and Friction Force Coupling of Gecko Setal Arrays: Implications for Structured Adhesive Surfaces”, MRS Fall meeting, Boston, November 26–30, 2007
- CO11. Boxin Zhao, Hongbo Zeng, Yu Tian, Noshir Pesika, Kenny Rosenberg, and Jacob Israelachvili[†], “Studies on the Adhesion, Coalescence and Detachment or Cracking of Interfacial Thin Films and Biological Micro/nano Structures”, 12th International Conference on Surface and Colloid Science, Beijing, October 15–19, 2006
- CO10. Boxin Zhao, Lulu Bursztyn, and Robert Pelton[†], “Molecular Simulation of Polymer Adhesion to Cellulose Surface by the Group Contribution Method of UNIFAC”, Fundamental and Applied Pulp and Paper Modeling Symposium, Montreal, QC 2005.

- CO9. Boxin Zhao, Robert Pelton[†], and Vasiliki Bartzoka, “Adhesive/Paper Interactions”, Fundamental Research Symposium, Cambridge, UK, Sept 12, 2005
- CO8. Boxin Zhao and Robert Pelton[†] “Using Peel as a Measure of Paper Surface Strength”, International Printing and Graphic Arts Conference, Vancouver, October 3–6, 2004
- CO7. Boxin Zhao, Luis Anderson, Alison Banks, and Robert Pelton[†] “Paper Properties Affecting Tape Adhesion -- Using Peel Test in Combination with Multivariate Regression Analysis”, 27th Adhesion Society Conference, Wilmington, USA, February 15–18, 2004
- CO6. Boxin Zhao and Robert Pelton[†], “Paper/Adhesive Interaction”, 53rd Canadian Chemical Engineering Conference, Hamilton, October 26–29, 2003
- CO5. Boxin Zhao and Robert Pelton[†], “Peeling from Paper”, 5th International Paper Coating and Chemistry Symposium, Montreal, June 16–19, 2003
- CO4. Boxin Zhao and Robert Pelton[†], “Peeling Tapes from Paper”, TAPPI Paper Physics Symposium, Syracuse NY, USA, September 8–13, 2002
- CO3. Boxin Zhao and Robert Pelton[†], “Peeling Tapes from Paper – The Transition of Failure Modes”, 76th ACS Colloid and Surface Science Symposium, Ann Arbor, USA, June 23–26, 2002
- CO2. Boxin Zhao and Robert Pelton[†], “Peeling Tapes from Paper – When Does the Paper Rip”, 88th Pulp and Paper Technical Association of Canada Conference, Montreal, January 28–31, 2002
- CO1. Boxin Zhao and Robert Pelton[†], “Interaction of Pressure Sensitive Adhesives with Paper”, 24th Adhesion Society Conference, Williamsburg, USA, February 26–28, 2001

Refereed Conference Abstracts and Poster Presentations (*The presenter is underlined*)

- CP13. Aleksander Cholewinski, KuoYang, and Boxin Zhao, “Bioinspired Adhesive Hydrogels for Biomedical Applications”, Gordon Research Conference - Science of Adhesion, South Hadley, MA, July 26-31, 2015 (Accepted in 2015)
- CP12. Fut (Kuo) Yang, Aleksander Cholewinski, Wei Zhang, and Boxin Zhao, “Tuning of Hydrogel Adhesion via Manipulated Rapid Formation of Nanoscale Gel Networks”, Gordon Research Conference - Science of Adhesion, South Hadley, MA, July 26-31, 2015 (Accepted in 2015)
- CP11. Hamed Shahsavan, Zihe Pan, Brendan McDonald and Boxin Zhao, “Biomimetic Micro/Nano Structured Surfaces: Fabrication, Characterization, and Application”, 2013 Nano Ontario Conference, Nov 7-8, Kingston, Ontario - *Won the Best Poster Award*.
- CP10. Behnam Meschi Amoli^{*}, Anming Hu, Norman Zhou, Boxin Zhao[†], “Synthesis and Functionalization of the Silver Nanoparticles for Electrical Conductive Adhesive Application”, MRS Spring Meeting in San Francisco, 2013 – *Nominated as the best poster award (one of the 10 nominations out of about 1000 posters)*
- CP9. Hamed Shahsavan and Boxin Zhao[†], “Gecko-inspired Fibrillar Structures for the Development of Novel Pressure-Sensitive Adhesives” Nano Ontario Conference 2012, Waterloo, Ontario – *Won The Best Poster Award*
- CP8. Wenjie Wang^{*}, Sarang Gumfekar^{*}, and Boxin Zhao[†], “Synthesis and characterization of polyaniline-ferrite nanocomposites as electromagnetic interference shielding materials”, Nano Ontario Conference 2012, Waterloo, Ontario

- CP7. Dhamodaran Arunbabu^{**}, Hamed Shahsavan*, Wei Zhang* and Boxin Zhao[†], “Polystyrene Nanoparticles Embedded Poly(AAc-co-MBA) Hydrogels as Nanocomposite Bioadhesives”, Nano Ontario Conference 2012, Waterloo, Ontario
- CP6. Wei Zhang*, Fut K. Yang*, and Boxin Zhao[†], “Adhesion, Friction and Cracking Behaviors of Mussel-inspired Polydopamine Thin Films” Nano Ontario Conference 2012, Waterloo, Ontario
- CP5. Hamed Shahsavan* and Boxin Zhao[†], “Biomimetic Micro/nano - structured Surfaces: A Potential Tool for The Tuning of Adhesion and Friction”, Proceedings of the 2nd International Conference on Nanotechnology: Fundamentals and Applications Ottawa, Ontario, Canada, 28-29 July 2011 – **The Best Poster Award**
- CP4. Behnam Meschi Amoli*, Boxin Zhao[†], Anming Hu, Norman Zhou, “Functionalization and Characterization of the Nanofillers for Homogeneous Dispersion into Epoxy Resins”, 61th Canadian Chemical Engineering Conference, London, Ontario, October, 2011
- CP3. Hamed Shahsavan*, Hadi Izadi*, YOUNG HAN*, and Boxin Zhao[†] “The Development of Micro and Nano-Structures for “Smart” Adhesion Applications”, Ontario Nanoscience and Nanotechnology Workshop, May 16–18, 2010
- CP2. Hadi Izadi*, Boxin Zhao[†], Neil McManus, and Alexander Penlidis, “Development of Biomimetic Polymer Structures at Small Scales for Responsible and Adaptable Adhesion Applications”, the Thirty-second Annual Symposium on Polymer Science/Engineering, Waterloo, May 11, 2010
- CP1. Boxin Zhao, Luis Anderson, Elaine Miasek, and Robert Pelton[†], “Peel Tapes from Paper – the Real Force on Paper”, McMaster Chemical Engineering Departmental Seminar Day, Hamilton, April 7, 2003

Research Funding

Direct research funding: \$2,314,000

Equipment and Facility: \$594,714

Total Research Funds: \$2,924,164

Applicants (Industrial partners)	Title, Funding Source, Program: Funding Level (% Zhao)	Period
Zhao, Boxin (PI) (Cronin, Duane (co-PI) and other co-PIs)	Hyper-Frequency Viscoelastic Spectroscopy for Advanced Composites and Biomaterials, NSERC RTI, \$117,714	2017-2018
Zhao, Boxin (co-PI) (Mario Gauthier (PI) and other co-PIs)	Critical Addition of a Matrix-Assisted Laser Desorption/Ionization Time of Flight (MALDI-TOF) Mass Spectrometer for the University of Waterloo Mass Spectrometry Facility, NSERC RTI, \$203,468.48 (~5%)	2016

Zhao, Boxin (co-PI) (William Anderson (PI) Aereus Shield Tech)	Antimicrobial Coatings Development for Polymeric Materials– NSERC CRD grant, \$345,425 (50%)	2016-2019
Zhao, Boxin (co-PI) (Michael Tam (PI); Leonard Simon (co-PI) Ecosynthetics)	Advanced sustainable materials derived from Agro- and hardwood-based feedstocks – NSERC CRD grant, \$780,000 (33%)	2016 January 4 - 2019 January 3
Zhao, Boxin (co-PI) (Ehsan Toyserkani (PI) GE Aviation)	Micro-Scale Additive Manufacturing of Stain Gauges on Non-planar Surface of Jet engine Blades – NSERC CRD grant, \$322,072 (25%)	2016 January 4 - 2017 December 22
Zhao, Boxin (PI) (Celestica Inc Microbonds Inc.)	Electrical conductive adhesives development for low temperature electronics assembly, BL-NCE network, Project M4, \$90,000/yr for five years or \$410,000 in total	2014 April -2019 March
Zhao, Boxin (PI) (Soprema Inc. and Concrete Constructives)	Underwater adhesive or "superglue" for construction bonding application, NSERC Idea to Innovation (I2IPJ), \$125,000	2014 October 15 – 2015 October 14
Zhao, Boxin (PI)	Biomimetic micro/nano-structured adhesives with “smart” properties – NSERC Discovery Grant project, \$175,000	2014 May – 2019 March
Zhao, Boxin (PI) (MicroBonds and Celestica Inc.)	Advanced Electrical Conductive Adhesive, OCE-VIP \$30,000	2014 April – 2015 March
Zhao, Boxin (PI) (Aereus Shied Inc.)	Bonding Studies for thermally sprayed copper alloy antimicrobial coatings, NSERC – Engage Plus Project, \$25,000	2015 May – 2015 Nov.
Zhao, Boxin (PI) (Aereus Shied Inc.)	Bonding Studies for thermally sprayed copper alloy antimicrobial coatings, NSERC – Engage Project, \$25,000	2014 Aug – 2015 Jan
Zhao, Boxin (PI) (WatCo)	Waterproof Bioadhesive , OCE Medical Sciences Proof-of-Principle (MSc PoP) Program, \$50,000	2014 April – 2015 March
Zhao, Boxin (PI) (Dr. Eugene Kholov Dentistry Professional Corporation)	Thermoplastic material for dental orthopedics, Industry-Sponsored Research Project with Dr. Eugene Kholov Dentistry Professional Corporation, \$23,000	2013 November – 2014 April

Zhao, Boxin (PI) (MemPore Inc.)	Tribological Study of MemPore-Recovered Lube Oils from Innovative Membrane Filtration Process NSERC, Engage Grant program: \$25,000	2013 November – 2014 April
Zhao, Boxin (PI) (WatCo)	Market Assessment of an Underwater Adhesive or Superglue Innovation, NSERC, Idea to Innovation (I2IPJ 452049), \$11,250	2013 August – 2014 August,
Zhao, Boxin (PI) (Magna Powertrain Inc.)	Surface Engineering for the Development of Low Friction, Low Wear Pumps, NSERC, Engage Grant program: \$25,000	2012 December – 2013 May
Zhao, Boxin (PI)	Development of Underwater Adhesives or wet "Superglue", CPOP Stage 1 Grant: \$20,000	2012 May – 2013 March
Zhao, Boxin (PI)	Development of Micro and Nano-structured Biomimetic Adhesion Technology – CFI-ORF operating fund: \$17,972	2013 April– 2017 March
Zhao, Boxin (PI)	Development of Micro and Nano-structured Biomimetic Adhesion Technology – CFI and ORF: \$120,000	2012 August– 2013 August
Zhao, Boxin (PI)	Functionalized Biomimetic Micro- and Nano-structured Adhesive Materials – Ontario MRI-ERA program: \$150,000	2012 April – 2017 April
Zhao, Boxin (PI) (Composotech Inc.)	The Study of Leading Edge Erosion and Ice Building on Wind Turbine Blades - Developing Anti-icing Superhydrophobic Coatings, NSERC, Engage Grant program: \$24,988	2011 September – 2012 February
Zhao, Boxin (PI) (Take Control Cosmedix Inc.)	Peel-and-stick Silicone Skin Prosthetic, OCE, Technical Problem Solving (TPS) grant program, \$39,840	2011 March – 2012 February
Zhao, Boxin (PI)	Characterization Facilities for the Development of Advanced Biomimetic Adhesion and Interfacial Technology, NSERC, RTI, \$81,899	2011 April – 2013 March
Zhao, Boxin (PI) Zhou, Norman (co-PI) Sullivan, Pearl (co-PI) (Research In Motion Limited, Microbonds Inc., and Celestica Inc.)	Novel Conductive Adhesives as a Lead-free and Multifunctional Joining Alternative for Electrical Packaging, NSERC, Strategic Projects Grant program: \$480,384	2010 October – 2014 September

Zhao, Boxin (PI) (Take Control Cosmedix Inc.)	A New Way to Improve the Adhesion between Silicone Rubbers and Scarred Human Skins, NSERC, Engage Grant program: \$24,805	2010 April – 2010 September
Zhao, Boxin (PI)	Biomimetic Adhesive Materials with Tailored Properties, NSERC, Discovery Grant program: \$120,000	2009 April–2014 March
Tsui, Ting (PI), Zhao, Boxin (co-PI), et al.	Field Emission Scanning Electron Microscope (SEM) for Green Energy, Bio-composites and Nanotechnology Research, NSERC, RTI, \$150,000 (5%)	2010 April – 2012 March
Zhao, Boxin (PI)	Graduate students support, Faculty of Engineering, University of Waterloo: \$35,000	2008 September - 2010 August
Zhao, Boxin (PI)	Start-up Grant, University of Waterloo: \$250,000	2008 September

3. TEACHING ACTIVITIES

Courses Taught in the past 5 years

Course	Title and Level	Term/Year	Class Size
CHE 101 (LEC and TUT)	Chemical Engineering Concepts, First-year undergraduate	F2016	155
CHE 101 (LEC and TUT)	Chemical Engineering Concepts, First-year undergraduate	W2014 S2013 S2012	83 76 63
CHE 313 (LEC and TUT)	Heat and Mass Transfer II, Third-year undergraduate	W2017 W2013 W2012 W2011	81 53 55 49
CHE 612 (LEC)	Interfacial Phenomena, Graduate-level	W2017 W2014 S2013 W2012	65 51 35 20
CHE 755 (RDG)	Polymeric Nanocomposite Materials: Fabrication, Characterization and Applications , Graduate -level	W2017 W2016	1 2
CHE 755 (RDG)	Functional Composite Materials (co-taught with Dr. Anming Hu in MME), Graduate -level	F2015	4

CHE 760 (RDG)	Biomaterials and Biointerface Graduate -level	F2010	2
BMSE 290C & 290D	Interfacial Phenomena, Graduate – level (Discussion group course in multidisciplinary program of Biomolecular Science and Engineering, Fulbright Visit Teaching UCSB)	F2015	12 (5 enrolled, about 7 sit-in)

Supervision of Undergraduate 4th year design projects and Direct Research Project

- 1) Fourth-year design project in nanotechnology engineering (2017) – **sole supervisor**
Project title: Gecko Skin Surface Print
Students: Sangho Kim, Nam Nguyen, Travis Yeow
- 2) Directed Research Project (2016 Spring) in Chemical Engineering – **sole supervisor**
Project title: Characterization of electrically conductive nanocomposites (CHE 298)
Students: Angela Guanghui Lian
- 3) Directed Research Project (2013 Spring) in Chemical Engineering – **sole supervisor**
Project title: Electrically conductive adhesives (CHE 298)
Students: Reena Paink
- 4) Directed Research Project (2013 Winter) in nanotechnology engineering – sole supervisor
Project title: Enhancing adhesion properties of pressure sensitive adhesives (NE 459)
Students: Toyin Jinowu
- 5) Fourth-year design project in nanotechnology engineering (2014) – **sole supervisor**
Project title: Nanocrystalline-reinforced paper for speaker design
Students: Alexander Baran-Harper, Kevin Antonio Joseph, Timothy Michael Stork, Tyler Davidson-Hall
- 6) Fourth-year design project in nanotechnology engineering (2013) – **sole supervisor**
Project title: Robust hydrophobic coating
Students: Aleksander Chotewinski, Toyin Jinowu, Ching Chi Kwan, Josh Trinidad
- 7) Fourth-year design project in chemical engineering (2012) – **sole supervisor**
Project title: Optimization and application of starch-based adhesives for papermaking
Students: Alexander Baran-Harper, Kevin Antonio Joseph, Timothy Michael Stork, Tyler Davidson-Hall
- 8) Fourth-year design project in nanotechnology engineering (2012) – **co-supervised with Prof. Shirley Tang in Chemistry**
Project title: Nanotechnology engineering fourth year design project - nanobrush adhesives: a gecko inspired design (won *the best fourth-year design award*)
Students: David Huang, Daniel Saari, Laura Burgess, Kevin Shahbazi
- 9) Fourth-year design project in nanotechnology engineering (2012) – **sole supervisor**
Project title: Directional sticking on snow: cross country ski applications
Students: Zachary Hanville, Behram O’rsquo, Nemanja Kliska, Bryan Scheier

Undergraduate student research supervision

Name (co-supervisor)	Program	Terms of supervision	Project
Steven Kim	Co-op MME 2A	Spring 2017	Antimicrobial coating characterization
Steven Zak Brookshaw	URA ChE 3A	Winter 2017	Gold coating on soft rubber
Ziwen Ma	Co-op ChE 1B	Winter 2017	Characterization of polymeric composites
Methely Sharma	Co-op Nano 2A	Winter 2017	Antimicrobial coating
Sucharita Vijayaraghavan	Co-op Nano 2A	Winter 2017	Lignin biopolymer for wood composites
Yeyu Ma	Co-op ChE 2B	Fall 2016	Hydrogel bonding and antimicrobial coatings
Melody Gao	Co-op ChE 1B	Fall 2016	Characterizing of lignin composite
Madhavi Sivan	Co-op Nano 3B	Spring 2016	Micro-structured surfaces for water collection
Robert Carman	Co-op ChE3A	Winter 2016	3D printing
Anthony Silvaroli	URA	Spring 2015	Adhesive testing
Anthony Silvaroli	Co-op, Nano2B	Winter 2015	Scratch testing and molding
Maxime Xu	URA	Spring 2015	Nanocrystal cellulose coating on polymer surface
Maxime Xu	Co-op	Winter 2015	Nanocrystal cellulose coating on polymer surface
Jonathan Ranisau	URA	Fall 2014	Fabrication and characterization of artificial skins
Sukhwinder Singh Panesar	Co-op	Fall 2014	Friction and scratch testing
Jeffrey d'Eon	URA	Fall 2014	Indentation and scratch testing of polydopamine films
Jeffrey d'Eon	NSERC- USRA Co-op, NE1B	Spring 2014	Nanocrystal cellulose coating on polymer surface
Jonathan Ranisau	URA	Winter 2014	Characterizations of hydro-oleophobic surfaces (Ranisau is awarded with the President's Research Award)
Reena Paink	URA	Fall 2013	Fabrication and characterization of bio-inspired film
Reena Paink	CHE 298	Winter 2013	Characterization of epoxy adhesives

Toyin Jinowu	NE 459	Winter 2013	Enhancing adhesion properties of pressure sensitive adhesives
Owen Crookston	URA	Fall 2012	Characterization of biomimetic materials
Lathankan Rasenthiram	NE 459	Winter 2011	Frictional behavior of varying biomimetic patterned material surfaces
Keziah Chan (Dr. D. Dykeman)	Co-op	Spring 2011	Curing kinetics of nanocomposite adhesives
Ross Arnold	URA	Winter 2011	Adhesion characterization
Daniel Cho	Co-op	Winter 2011	Contact adhesion studies of hydrogel thin films
Marwah Saeed (Dr. A. Hu)	Co-op	Winter 2011	Fabrication and characterization of silver nanorods
Mandric Leung	Co-op	Spring 2010	Characterization of patterned polymer surfaces
Kushal Prajapati	Co-op	Spring 2010	Characterizations of adhesives and coatings
Benson Fan	URA Co-op	Spring 2010 Winter 2010	Characterization of polymer thin films
Tony Le Tao	URA	Fall 2009	Characterization of polymer thin films
Timothy Leung	Co-op	Fall 2009	Characterization of hydrogel thin films
Alan Thai	Co-op	Spring 2009	Characterization of hydrogel thin films
Peter Wu (Prof. H.J. Kwon)	Co-op	Winter 2009	The development of a contact adhesion tester
Aaron Katz (Prof. F. Gu)	Co-op	Winter & Spring 2009	Adhesion and material characterizations of polymeric hydrogels
Sandy Liu (Prof. F. Gu)	Co-op	Winter & Spring 2009	Synthesis of polymeric hydrogels

Graduate Students and Research Supervision

Name (Co-Supervisor)	Program	Supervisory Period	Thesis Title / student awards)
Che Zhang	CHE MASc	05/2017 -	Lignin biopolymer composite
Jeremy Vandenberg (Ehsan Toyserkani)	CHE MASc	04/2016 -	Ink development for 3D printing
Kelvin Liew	CHE MASc	05/2015 -	Functionally-graded materials (CGS-M scholarship)

Ryan Newfeld (Nasser Abukhdeir)	CHE MASc	05/2015 -	Simulation of liquid crystal elastomer (CGS-M scholarship)
Josh Trinidad	CHE MASc	09/2014- 08/2016	Mechanical and rheological properties of conductive adhesives
Pengxiang Si	CHE PhD	09/2016 -	Smart Conductive Polymers
Fut Yang	CHE PhD	09/2015 -	Dynamics of soft materials and hydrogel bonding
Alek Cholewinski	CHE PhD	09/2013-	Development of mussels-inspired adhesive and coating materials (Queen Elizabeth Award, NSERC-PGS)
Hamed Shahsavan	CHE PhD	01/2013 – 04/2017	Development of smart biomimetic graded structures as advanced sensing materials (OGS and WIN Nanofellowship, Queen Elizabeth Award)
Zihe Pan	CHE PhD	09/2012 - 08/2016	Development of low friction and oleophobic coating materials (CSC scholarship)
Geoff Rivers (Prof. P. Sullivan)	MME PhD	01/2012- 04/2017	Curing and bonding of conductive polymer composites with hybrid micro and nanofiller
Wei Zhang	CHE PhD	09/2012 – 07/2015	Surface and tribological behavior of Mussel-inspired polydopamine thin films (Queen Elizabeth Award) – Offered an faculty position as an Associate Professor in Southeast University, China
Brendan McDonald	CHE MASc	09/2011 – 08/2013	Biomimetic anti-icing superhydrophobic coatings (WIN Nanofellowship) – full time employee at CGT Corporate Headquarters, Cambridge, Canada
Behnam Meschi Amoli (Prof. N. Zhou)	CHE PhD	01/2011 – 03/2015	Functionalization and characterization of nanofillers for homogeneous dispersion into epoxy resins – full time employee at MG Chemicals , Burlington, Canada
Ehsan Marzbanrad (Prof. N. Zhou)	MME PhD	02/2012- 02/2016	Development of functional nanostructures through self-assembly and joining of nanocrystals – PDF in additive manufacture, UWaterloo
Sarang Gumfekar	CHE MASc	01/2011 – 12/2012	Mechanical-electrical-thermal characterization of nanocomposite conductive adhesives – PhD student at the U Alberta

Fut (Kuo) Yang	CHE MASc	04/2010 – 12/2011	Fabrication and characterization of dopamine thin films as bioadhesives - – PhD student at the UWaterloo
Hamed Shahsavan	CHE MASc	01/2010 – 12/2011	Fabrication and characterization of biomimetic polymer microstructures - PhD student at the UWaterloo
Hadi Izadi (Prof. A. Penlidis)	CHE PhD	09/2009 – 04/2012	Development of biomimetic materials with tailored properties
Youngeun Han (Prof. H.J. Kwon)	CHE MASc	09/2009 – 08/2011	Application of digital imaging technique to study the adhesion and failure mechanism of soft materials- full time employee at SNC Lavalin Inc, Oakville

Postdoctoral Fellows, Visitors, and Research Assistants Supervision

Name (Co-Supervisor)	Type of researcher	Supervisory Period	Research Projects
Geoff Rivers	Research Associate	05/2017 -	Synthesis and characterization of Ag nanostructures
Hamed Shahsavan	Research Associate	05/2017 -	Bio-inspired soft gripper
Li Yu	Postdoc	03/2017 -	Sustainable bio-based composites
Li Chen	Postdoc	08/2016 -	Advanced Conductive adhesive composite and 3D printing
Fatemeh Ferdosin	Postdoc	03/2016-	Lignin composite adhesives
Zihe Pan	Postdoc	08/2016-12/2016	Mechanical characterization of lignin adhesives
Wei Zhang	Postdoc	07/2015-03/2016	Electrically Conductive Polymers
Tianchang Wang	Postdoc	06/2015 - 6/2016	Development of advanced nanocomposites
Dhamodaran Arunbabu	Postdoc	06/2011–11/2012	Development of bionanomaterials for biomedical applications
Yikang Zhou	Visiting PhD student	09/2014 – 03/2016	Synthesis and Properties of Nano-Polyaniline Films Doped with Camphor Sulfonic Acid (visiting PhD student from Beijing Jiaotong University)
Shaofan Sun	Visiting PhD student	09/2013 – 09/2015	Synthesis of novel nano-composite coating materials for printing papers and its wetting behavior(visiting PhD student from Haerbin Institute of Technology)
Fut (Kuo) Yang	Research Associate	01/2012-	Development of bio-inspired underwater adhesives or “superglue”

Jesse Quinn	Visiting Scholar	11/2012-7/2013	Characterization of adhesives and coatings
Aleksander Cholewinski	Research Assistant	04/2013 – 8/2013	Characterization of bio-inspired superhydrophobic coating
Josh Trinidad	Research Assistant	04/2013 – 8/2013	Characterization of bio-inspired superhydrophobic coating
Poonam Patel	Research Assistant	03/2013-	Surface characterization of biomimetic materials
Wenjie Wang (Prof. Q. Jiao)	visiting PhD student	09/2011 – 12/2012	Novel polymer nano-composites for electromagnetic shielding applications

4. SERVICE

To the Department

2016	Departmental Advisory Committee on Appointments DACA (Polymer Eng Position)
2016 – Present	Departmental merit review committee
2016 – Present	Departmental seminar organizer
2015 – Present	Departmental tenure and promotion committee
2013– 2015	Departmental Outreach committee (organizing the Open House Events, departmental showcase activities, You @ Waterloo Day)
2008 - Present	Graduate student thesis exam committees (> 20)
2009 – 2011	Graduate Studies Review Committee
2008–2009	Undergraduate Review Committee
2012	Departmental meeting chair
2012	4th Year Design Project Seminar, Session co-Chair, W2012
2011	Chemical Engineering Faculty Representative on Ontario University Fair
2010	Chemical Engineering Faculty Representative on Campus Day
2009	Letter-Writer (personalized letters to potential Chemical Engineering undergraduates)
2009	4th Year Design Project Seminar, Session Chair, W2009
2009-2013	Work Term Reports Grading
2008–2009	Exploration/Campus Day Committee
2008–2009	Health and Safety Committee

To the Faculty

2008 - Present	PhD student exam committees (> 15)
2012	Chair of a PhD Comprehensive Exam
2012	Graduate Student Research Conference, Faculty evaluator
2009 –2011	Engineering Faculty Council, Member, Chemical engineering representative

Other University Services

2016	FAUW representative (CHE)
2011	Presiding Officers for the first-year final exams on 12/8/2011
2010	Guest Lecture to SYDE 381

External Examiner of PhD Thesis Defence

2016	Department of Chemical & Materials Engineering, University of Alberta
2016	Department of Chemical and Biochemical Engineering, Western University
2015	Department of Chemical and Biological Engineering, University of Ottawa
2012	Department of Chemical & Materials Engineering, University of Alberta

5. PROFESSIONAL ACTIVITIES

Society memberships

2008–Present	Canadian Society for Chemical Engineering (CSCHE)
2009–present	The Materials Research Society (MRS)
2012–present	The American Nano Society
2010–present	The America Adhesion Society
2009–2011	The America Chemical Society
2006–2007	American Institute of Chemical Engineers (AIChE)
2006–2007	International Association of Colloid and Interface Scientists (IACIS)
2001–2005	Pulp and Paper Technical Association of Canada

Conference Organization

2017	Session co-organizer, Chemistry of Bioadhesion, 2017 Annual meeting of the Adhesion Society
2017	Session co-organizer, Macromolecular Sciences and Engineering, 67th Canadian Chemical Engineering Conference, Oct 2017
2016	Session chair, Catalysis and Surface Functionality, 2016 Global Conference on Polymer and Composite Materials, Huangzhou, China, May 20-23, 2016
2014	Session co-chair, Polymer Nanotechnology, BIT's 4th Annual World Congress of Nano Science & Technology, Qingdao, China Oct 28-Nov 1, 2014.
2014	Session co-organizer, Macromolecular Science and Complex Fluids, 64 th Chemical Engineering Conference, Niagara Falls, Ontario, October 19-22, 2014
2013	Symposia co-organizer, Surface Science of Biomimetic Films, "Green" Materials and Sustainable Nanocomposites, the 96th Canadian Chemistry Conference, Quebec, May 26-30, 2013
2011	Conference Section Chair, Waterloo Institute for Nanotechnology – Soochow University Nanotechnology Workshop, Thursday, July 21 2011
2010	Conference Session Chair, Joining of Advanced and Specialty Materials XII: Nanojoining I, Materials Science and Technology Conference, Houston, Texas, October 17-21, 2010

Scientific Journals Reviewer

Angewandte Chemie
Advanced Materials
Soft Matter
Langmuir
Science
Journal of Adhesion Science and Technology
Journal of Adhesion
Proc Natl Acad Sci USA

Chemical Engineering Journal

Journal of Colloid and Interface Science
Journal of Material Chemistry
Applied Surface Science
ACS Applied Materials and Interface
Macromolecular Rapid Communications
Macromolecular Materials and
Engineering
Nanoscale
Composite Science and Technology
Scientific Reports

Book proposal reviewer

Elsevier Book Proposal: Interfacial Phenomena: Fundamentals and Applications

Editorial Board

Chemical Engineering & Process Techniques

Grant Application Reviewer

NSERC-Discovery Grant applications
NSERC-Strategic Projects applications
ISF(Israel Science Foundation) Research
Grant Application
ACS PRF Grant Application

NSERC-CRDs
FNRS(Belgium) Grant application
CFI (Quebec)