CV for Mark MacLachlan

Professional

- 2025- Dean of Science, University of British Columbia (UBC)
- 2024-2025 Dean of Science *pro tem*, UBC
- 2016-2023 Associate Dean of Research & Graduate Studies (Faculty of Science)
- 2017- PI and Visiting Professor of the WPI Nano Life Science Institute at Kanazawa University
- 2011- Professor, University of British Columbia
- 2007-2011 Associate Professor, University of British Columbia
- 2001-2007 Assistant Professor, University of British Columbia

Education

- 1999-2001 NSERC Postdoctoral Fellow (MIT; supervisor: Prof. Tim Swager)
- 1995-1999 Ph.D. (Inorganic Materials Chemistry; University of Toronto; supervisors: Profs. Ian Manners and Geoff Ozin)
- 1991-1995 B. Sc. (Honours Chemistry, UBC)

Mentorship and Training

- Current group: 8 PhD students, 1 post-doc, 3 undergraduate students
- 10 MSc and 27 PhD students graduated at UBC
- 34 Postdocs trained at UBC
- >160 undergraduate and visiting students trained at UBC

Research Interests

- Porous materials, self-assembly, cellulose nanocrystals, biomaterials, coordination chemistry, macrocycles, supramolecular chemistry, materials chemistry

Publications

275 peer-reviewed publications. Select publications since 2019:

- Andrew, L. J.; Yurtsever, A.; Kandel, R.; Ota, S.; Miyazawa, K.; Fukuma, T.; MacLachlan, M. J. "High-resolution AFM Visualization of Nanocellulose Surface Grafting with Small Molecules" *Small* **2025**, in press.
- Li, Z.; Wang, P.; Zhang, Y.; Michal, C. A.; MacLachlan, M. J. "Durable Hydrophobic Iridescent Films with Tunable Colors from Self-Assembled Cellulose Nanocrystals" *Small* **2025**, *21*, 2409701.

- Szymkowiak, J. K.; Andrew, L. J.; Hamad, W. Y.; MacLachlan, M. J. "Controlling the Optical Properties of Chiral Nematic Mesoporous Organosilica Films with Bioadditives" *Nanoscale* **2024**, *16*, 20948–20954.
- Li, Z.; Co, S.; Tsang, K.; Drummond, J. G.; Martinez, D. M.; Hamad, W. Y.; Jiang, F.; MacLachlan, M. J. "When Cellulose Nanocrystals Meet Graphene Oxide: Structurally Enhanced Aerogels for Efficient Solar Steam Generation and Water Purification" *Chem. Eng. J.* **2024**, *499*, 156166.
- Kandel, R.; Soto, M. A.; Medina, D.; Patrick, B. O.; Lelj, F.; MacLachlan, M. J. "A Redox-active Cyclometalated Platinum Ring Enables Synthetic Post-processing of a [2]Rotaxane" *Angew. Chem. Int. Ed.* **2025**, *64*, e202415381.
- Ota, S.; Soto, M. A.; Patrick, B. O.; Kamal, S.; Lelj, F.; MacLachlan, M. J. "π-Extended Ligands with Dual-Binding Behavior: Hindered Rotation Unlocks Unexpected Reactivity in Cyclometalated Pt Complexes" *Chem. Sci.* **2024**, *15*, 14644–14650.
- Andrew, L. J.; Lizundia, E.; MacLachlan, M. J. "Designing for degradation: Transient devices enabled by (nano)cellulose" *Adv. Mater.* **2024**, in press. Invited review.
- Das Gupta, M.; Patrick, B. O.; Reid, J. P.; MacLachlan, M. J. "Benzene-1,3,5-Tricarboxamide Metal Complexes Self-Assembled in Nanofibers: Implications for Bimetallic Catalytic Nanomaterials" *ACS Appl. Nano Mater.* **2024**, *7*, 15005–15011.
- Cho, K.; Li, Z.; MacLachlan, M. J. "Growth of Metal Organic Frameworks on the Surface of Individual Cellulose Nanocrystals" *Cryst. Growth Des.* **2024**, *24*, 1792–1797.
- Xu, Y.-T.; Ackroyd, A. J.; Momeni, A.; Oudah, M.; MacLachlan, M. J. "Magnetic Field-responsive Graphene Oxide Photonic Liquids" *Nanoscale Horiz.* **2024**, *9*, 317-323.
- Gao, H.; Soto, M. A.; Li, Z.; Andrew, L. J.; MacLachlan, M. J. "Cellulose nanocrystal/halloysite nanotube composite aerogels for water purification" *Dalton Trans*. **2023**, *52*, 12968-12977.
- Ackroyd, A. J.; De Paolis, A.; Xu, Y.-T.; Momeni, A.; Hamad, W. Y.; MacLachlan, M. J. "Self-assembly of cellulose nanocrystals confined to square capillaries" *Nanoscale* **2023**, *15*, 14388-14398.
- Li, Z.; Tsang, K.; Xu, Y.-T.; Drummond, J. G.; Martinez, D. M.; MacLachlan, M. J. "Exploring anisotropic properties of chiral nematic cellulose nanocrystal aerogels: Outstanding directional mechanical strength and unexpected surface-dependent thermal conductivity" *J. Mat. Chem. C* **2023**, *11*, 18291-18301.
- Gao, H.; Soto, M. A.; Szymkowiak, J. K.; Andrew, L. J.; Hamad, W. Y.; MacLachlan, M. J. "Halloysite Nanotubes Enhance the Mechanical Properties and Thermal Stability of Iridescent Cellulose Nanocrystal Films" *Dalton Trans*. **2023**, *52*, 7136-7142.
- D'Acierno, F.; Michal, C. A.; MacLachlan, M. J. "Thermal Stability of Cellulose Nanomaterials" *Chem. Rev.* **2023**, *123*, 7295–7325.
- Andrew, L. J.; Gillman, E. R.; Walters, C. M.; Lizundia, E.; MacLachlan, M. J. "Multi-Responsive Supercapacitors from Chiral Nematic Cellulose Nanocrystal-Based Activated Carbon Aerogels" *Small* **2023**, *19*, 2301947.
- Boott, C. E.; Shi, L.; Li, Z.; Hamad, W. Y.; MacLachlan, M. J. "A Facile Photoinitiated Polymerization Route for the Preparation of Photonic Elastomers with Chiral Nematic Order" *Liq. Cryst.* **2023**, *50*, 1143-1150.

- Xu, M; Xu, Z.; Soto, M. A.; Xu, Y.-T.; Hamad, W. Y.; MacLachlan, M. J. "Mechanically Responsive Circularly Polarized Luminescence from Cellulose Nanocrystal-based Shape-Memory Polymers" *Adv. Mater*. **2023**, *35*, 2301060.
- Cho, K.; Andrew, L. J.; MacLachlan, M. J. "Uniform Growth of Nanocrystalline ZIF-8 on Cellulose Nanocrystals: Useful Template for Microporous Organic Polymers" *Angew. Chem. Int. Ed.* **2023**, *62*, e202300960.
- Das Gupta, M.; Boott, C. E.; Goon, J. E.; Patrick, B. O.; Reid, J. P.; MacLachlan, M. J. "Controlled Supramolecular Self-Assembly of Uniform Nanostructures from Trimetallic Complexes" *ACS Appl. Nano Mater.* **2023**, 6, 4672–4680.
- Andrew, L. J.; Walters, C. M.; Hamad, W. Y.; MacLachlan, M. J. "Co-assembly of Cellulose Nanocrystals and Neutral Polymers in Iridescent Chiral Nematic Films" *Biomacromolecules* **2023**, *24*, 896–908.
- Li, Z.; Soto, M. A.; Drummond, J. G.; Martinez, D. M.; Hamad, W. Y.; MacLachlan, M. J. "Cellulose Nanocrystal Gels with Tunable Mechanical Properties from Hybrid Thermal Strategies" *ACS Appl. Mater. Interfaces* **2023**, *15*, 8406–8414.
- Fan, J.; Xu, M.; Xu, Y.-T.; Hamad, W. Y.; Meng, Z.; MacLachlan, M. J. "A Visible Multi-response Electrochemical Sensor Based on Cellulose Nanocrystals" *Chem. Eng. J.* **2023**, *457*, 141175.
- Shi, Y.; Soto, M. A.; MacLachlan, M. J. "Self-Assembled Gels of Cellulose Nanocrystals for Diffusion-Controlled Color Switching" *ACS Appl. Nano Mater.* **2022**, *5*, 17819–17827.
- Washino, G.; Soto, M. A.; Wolff, S.; MacLachlan, M. J. "Preprogrammed Supramolecular Polymer Networks: Self-assembly Built-to-Order" *Commun. Chem*. **2022**, *5*, 155.
- D'Acierno, F.; Liu, L.; Nguyen, T.-D.; Michal, C. A.; Palma-Dibb, R. G.; Carvalho, R. M.; MacLachlan, M. J. "Physical and Mechanical Properties of a Dental Resin Adhesive Containing Hydrophobic Chitin Nanocrystals" *Dental Mater.* **2022**, *38*, 1855-1865.
- Vanderfleet, O. M.; D'Acierno, F.; Isogai, A.; MacLachlan, M. J.; Michal, C. A.; Cranston, E. D. "Effects of Surface Chemistry and Counterion Selection on the Thermal Behavior of Carboxylated Cellulose Nanocrystals" *Chem. Mater.* **2022**, *34*, 8248-2861.
- Yurtsever, A.; Wang, P.-X.; Priante, F.; Jaques, Y. M.; Miyazawa, K.; MacLachlan, M. J.; Foster, A. S.; Fukuma, T. "Molecular insights at the crystalline cellulose-water interfaces by three-dimensional atomic force microscopy" *Sci. Adv*. **2022**, *8*, eabq0160.
- D'Acierno, F.; Bakrani, K.; Hamad, W. Y.; Michal, C. A.; MacLachlan, M. J. "Tuning the Optical and Thermal Properties of Both Iridescent and Colorless Cellulose Nanocrystal Films" *ACS Sustain. Chem. Eng*. **2022**, *10*, 8715-8724.
- Yurtsever, A.; Wang, P.-X.; Priante, F.; Jaques, Y. M.; Miyata, K.; MacLachlan, M. J.; Foster, A. S.; Fukuma, T. "Probing the Structural Details of Chitin Nanocrystal–Water Interfaces by Three-Dimensional Atomic Force Microscopy" *Small Methods* **2022**, *6*, 2200320.

- Szymkowiak, J. K.; Walters, C. M.; Hamad, W. Y.; MacLachlan, M. J. "Tuning the Properties of Chiral Nematic Mesoporous (Organo)silica Through Thiol-Ene Click Chemistry" *Eur. J. Inorg. Chem.* **2022**, *2022*, e202200218.
- Momeni, A.; Hamad, W. Y.; MacLachlan, M. J. "Using Rotation to Organize Cellulose Nanocrystals Inside a Fibre" *Nanoscale* **2022**, *14*, 7613-7620.
- Xu, Y.-T.; Walters, C. M.; D'Acierno, F.; Hamad, W. Y.; Michal, C. A.; MacLachlan, M. J. "Cellulose Nanocrystal Chiral Nematic Composites with Wet Mechanical Adaptability" *Chem. Mater.* **2022**, *34*, 4311–4319.
- Xu, Y.-T.; Li, J.; MacLachlan, M. J. "Stable Graphene Oxide Hydrophobic Photonic Liquids" *Nanoscale Horizons* **2022**, *7*, 185-191.
- Momeni, A.; Walters, C. M.; Xu, Y.-T.; Hamad, W. Y.; MacLachlan, M. J. "Concentric chiral nematic polymeric fibers from cellulose nanocrystals" *Nanoscale Adv.* **2021**, *3*, 5111-5121.
- Boott, C. E.; Soto, M. A.; Hamad, W. Y.; MacLachlan, M. J. "Shape-Memory Photonic Thermoplastics from Cellulose Nanocrystals" *Adv. Funct. Mater*. **2021**, *31*, 2103268.
- Walters, C. M.; Matharu, G. K.; Hamad, W. Y.; Lizundia, E.; MacLachlan, M. J. "Chiral Nematic Cellulose Nanocrystal/Germania and Carbon/Germania Composite Aerogels as Supercapacitor Materials" *Chem. Mater.* **2021**, *33*, 5197-5209.
- Xu, Y.-T.; Vijay Mody, U.; MacLachlan, M. J. "Tuning the Photonic Properties of Graphene Oxide Suspensions with Nanostructured Additives" *Nanoscale* **2021**, *13*, 7558-7565.
- Soto, M. A.; Zhang, D.; Xu, Y.; Shi, Y.; Patrick, B. O.; Hamad, W. Y.; MacLachlan, M. J. "Guest-conditioned Multicolor Writing on Cellulose Nanocrystal Canvases" *Mater. Adv.* **2020**, *1*, 2536-2541.
- D'Acierno, F.; Hamad, W. Y.; Michal, C. A.; MacLachlan, M. J. "Thermal Degradation of Cellulose Filaments and Nanocrystals" *Biomacromolecules* **2020**, *21*, 3374-3386.
- Dai, Y.; Wang, H.; Liu, S.; MacLachlan, M. J.; Wolf, M. O.; Smith, K. J. "PdO Nanoparticles Supported on MnO_2 Nanowire Aerogels as Catalysts for Low-Temperature Methane Combustion" *ACS Appl. Nano Mater.* **2020**, *3*, 6972-6978.
- Dai, Y.; Wang, H.; Liu, S.; Smith, K. J.; Wolf, M. O.; MacLachlan, M. J. "$CoCr_2O_4$ Nanospheres for Low Temperature Methane Oxidation" *CrystEngComm* **2020**, *22*, 4404-4415.
- Cao, Y.; Wang, P.-X.; D'Acierno, F.; Hamad, W. Y.; Michal, C. A.; MacLachlan, M. J. "Tunable Diffraction Gratings from Biosourced Lyotropic Liquid Crystals" *Adv. Mater.* **2020**, *32*, 1907376.
- Frka-Petesic, B.; Kelly, J. A.; Jacucci, G.; Guidetti, G.; Kamita, G.; Crossette, N. P.; Hamad, W. Y.; MacLachlan, M. J.; Vignolini, S. "Retrieving the co-assembly pathway of composite cellulose nanocrystal photonic films from their angular optical response" *Adv. Mater.* **2020**, *32*, 1906889.
- Zhang, D.; Soto, M. A.; Lewis, L.; Hamad, W. Y.; MacLachlan, M. J. "Host–Guest Chemistry Within Cellulose Nanocrystal Gel Receptors" *Angew. Chem. Int. Ed.* **2020**, *59*, 4705-4710.

- Tran, A.; Boott, C. E.; MacLachlan, M. J. "Understanding the Self-Assembly of Cellulose Nanocrystals – Towards Chiral Photonic Materials" *Adv. Mater.* **2020**, *32*, 1905876.
- Boott, C. E.; Tran, A.; Hamad, W. Y.; MacLachlan, M. J. "Cellulose Nanocrystal Elastomers with Reversible Visible Color" *Angew. Chem. Int. Ed.* **2020**, *59*, 226-231.
- Nguyen, T.-D.; Li, J.; Lizundia, E.; Niederberger, M.; Hamad, W. Y.; MacLachlan, M. J. "Black Titania with Nanoscale Helicity" *Adv. Funct. Mater.* **2019**, *29*, 1904639.
- Kose, O.; Boott, C. E.; Hamad, W. Y.; MacLachlan, M. J. "Stimuli-responsive Anisotropic Materials Based on Unidirectional Organization of Cellulose Nanocrystals in an Elastomer" *Macromolecules* **2019**, *52*, 5317-5324.
- Aalbers, G. J. W.; Boott, C. E.; D'Acierno, F.; Lewis, L.; Ho, J.; Michal, C. A.; Hamad, W. Y.; MacLachlan, M. J. "Post-Modification of Cellulose Nanocrystal Aerogels with Thiol-Ene Click Chemistry" *Biomacromolecules* **2019**, *20*, 2779-2785.
- Lewis, L.; Hatzikiriakos, S. G.; Hamad, W. Y.; MacLachlan, M. J. "Freeze-thaw gelation of cellulose nanocrystals" *ACS Macro Lett.* **2019**, *8*, 486-491.
- Cao, Y.; Lewis, L.; Hamad, W. Y.; MacLachlan, M. J. "Pressure-Responsive Hierarchical Chiral Photonic Aerogels" *Adv. Mater*. **2019**, *31*, 1808186.
- Nguyen, T.-D.; Lizundia, E.; Niederberger, M.; Hamad, W. Y.; MacLachlan, M. J. "A Self-Assembly Route to TiO_2 and TiC with Liquid Crystalline Order" *Chem. Mater*. **2019**, *31*, 2174-2181.
- Nguyen, T.-D.; MacLachlan, M. J. "Double Twisted Photonic Honeycomb Frameworks with Mesoporous Structures" *Adv. Opt. Mater.* **2019**, *7*, 1801275.
- Dai, Y.; Vanama, P.; Zhu, C.; Wang, H.; Smith, K. J.; Wolf, M. O.; MacLachlan, M. J. "Bowtie-shaped $NiCo_2O_4$ Catalysts for Low-Temperature Methane Combustion" *Adv. Funct. Mater.* **2019**, *29*, 1807519.
- Kose, O.; Tran, A.; Lewis, L.; Hamad, W. Y.; MacLachlan, M. J. "Unwinding a Spiral of Cellulose Nanocrystals for Stimuli-Responsive Stretchable Optics" *Nature Commun.* **2019**, *10*, 510.
- Wang, P.-X.; Hamad, W. Y.; MacLachlan, M. J. "Liquid Crystalline Tactoidal Microphases in Ferrofluids: Spatial Positioning and Orientation by Magnetic Field Gradients" *Chem* **2019**, *5*, 681-692.

Select publications prior to 2019:

- Hiratani, T.; Kose, O.; Hamad, W. Y.; MacLachlan, M. J. "Stable and sensitive stimuli-responsive anisotropic hydrogels for sensing ionic strength and pressure" *Mater. Horizons* **2018**, *5*, 1076-1081.
- Spengler, M.; Dong, R. Y.; Michal, C. A.; MacLachlan, M. J.; Giese, M. "Hydrogen-bonded Liquid Crystals in Confined Spaces - Towards Photonic Hybrid Materials" *Adv. Funct. Mater.* **2018**, *28*, 1800207.
- Wang, P.-X.; Hamad, W. Y.; MacLachlan, M. J. "Size-Selective Exclusion Effects of Liquid Crystalline Tactoids on Nanoparticles: A Separation Method" *Angew. Chem. Int. Ed.* **2018**, *130*, 3418-3423.

- Oechsle, A.-L.; Lewis, L.; Hamad, W. Y.; Hatzikiriakos, S. G.; MacLachlan, M. J. "CO_2-Switchable Cellulose Nanocrystal Hydrogels" *Chem. Mater.* **2018**, *30*, 376-385.
- Hiratani, T.; Hamad, W. Y.; MacLachlan, M. J. "Transparent Depolarizing Organic and Inorganic Films for Optics and Sensors" *Adv. Mater.* **2017**, *29*, 1606083.
- Nguyen, T.-D.; Hamad, W. Y.; MacLachlan, M. J. "Near IR-Sensitive Upconverting Nanostructured Photonic Cellulose Films" *Adv. Opt. Mater.* **2017**, *5*, 1600514.
- Wang, P.-X.; Hamad, W. Y.; MacLachlan, M. J. "Polymer and Mesoporous Silica Microspheres with Chiral Nematic Order from Cellulose Nanocrystals" *Angew. Chem. Int. Ed.* **2016**, *55*, 12460-12464.
- Wang, P.-X.; Hamad, W. Y.; MacLachlan, M. J. "Structure and Transformation of Tactoids in Cellulose Nanocrystal Suspensions" *Nature Comm.* **2016**, *7*, 11515.
- Nguyen, T. D.; Hamad, W. Y.; MacLachlan, M. J. "Hard Photonic Glasses and Corundum Nanostructured Films from Aluminothermic Reduction of Helicoidal Mesoporous Silicas" *Chem. Mater.* **2016**, *28*, 2581-2588.
- Nguyen, T. D.; Peres, B. U.; Carvalho, R. M.; MacLachlan, M. J. "Photonic Hydrogels from Chiral Nematic Mesoporous Chitosan Nanofibril Assemblies" *Adv. Funct. Mater.* **2016**, *26*, 2875–2881.
- Nguyen, T.-D.; Kelly, J. A.; Hamad, W. Y.; MacLachlan, M. J. "Magnesiothermic Reduction of Thin Films: Towards Semiconducting Chiral Nematic Mesoporous Silicon Carbide and Silicon Structures" *Adv. Funct. Mater.* **2015**, *25*, 2175-2181.
- Khan, M. K.; Bsoul, A.; Walus, K.; Hamad, W. Y.; MacLachlan, M. J. "Photonic Patterns Printed in Chiral Nematic Mesoporous Resins" *Angew. Chem. Int. Ed.* **2015**, *54*, 4304-4308.
- Giese, M.; Blusch, L. K.; Khan, M. K.; MacLachlan, M. J. "Functional Materials from Cellulose-Derived Liquid Crystal Templates" *Angew. Chem. Int. Ed.* **2015**, *54*, 2888-2910.
- Giese, M.; Blusch, L. K.; Khan, M. K.; Hamad, W. Y.; MacLachlan, M. J. "Responsive Mesoporous Photonic Cellulose Films by Supramolecular Co Templating" *Angew. Chem. Int. Ed.* **2014**, *53*, 8880-8884.
- Nguyen, T.-D.; Hamad, W. Y.; MacLachlan, M. J. "CdS Quantum Dots Encapsulated in Chiral Nematic Mesoporous Silica: New Iridescent and Luminescent Materials" *Adv. Funct. Mater*. **2014**, *24*, 777-783.
- Kelly, J. A.; Shukaliak, A. M.; Cheung, C. C. Y.; Shopsowitz, K. E.; Hamad, W. Y.; MacLachlan, M. J. "Responsive Photonic Hydrogels with Chiral Nematic Structures" *Angew. Chem. Int. Ed*. **2013**, *52*, 8912-8916.
- Khan, M.K.; Giese, M.; Yu, M.; Kelly, J.A.; Hamad, W.Y.; MacLachlan, M.J. "Flexible Mesoporous Photonic Resins with Tunable Chiral Nematic Structures" *Angew. Chem. Int. Ed.* **2013**, *52*, 8921-8924.
- Shopsowitz, K.E.; Stahl, A.; Hamad, W.Y.; MacLachlan, M.J. "Hard Templating of Nanocrystalline Titanium Dioxide with Chiral Nematic Ordering" *Angew. Chem. Int. Ed.* **2012**, *51*, 6886-6890.
- Shopsowitz, K.E.; Hamad, W.Y.; MacLachlan, M.J. "Flexible and Iridescent Chiral Nematic Mesoporous Organosilica Films" *J. Am. Chem. Soc.* **2012**, *134*, 867-870.

- Shopsowitz, K.E.; Hamad, W.Y.; MacLachlan, M.J. "Chiral Nematic Mesoporous Carbon Derived from Nanocrystalline Cellulose" *Angew. Chem. Int. Ed.* **2011**, *50*, 10991-10995.
- Roy, X.; Hui, J.K.-H.; Rabnawaz, M.; Liu, G.; MacLachlan, M.J. "Prussian Blue Nanocontainers: Selectively Permeable Hollow Metal-Organic Capsules from Block Ionomer Emulsion-Induced Assembly" *J. Am. Chem. Soc.* **2011**, *133*, 8420-8423.
- Qi, H.; Shopsowitz, K.E.; Hamad, W.Y.; MacLachlan, M.J. "Chiral Nematic Assemblies of Silver Nanoparticles in Mesoporous Silica Thin Films" *J. Am. Chem. Soc.* **2011**, *133*, 3728-3731.
- Shopsowitz, K.E.; Qi, H.; Hamad, W.Y.; MacLachlan, M.J. "Free-Standing Mesoporous Silica Films with Tunable Chiral Nematic Structures" *Nature* **2010**, *468*, 422-425.
- Qi, H.; Roy, X.; Shopsowitz, K.E.; Hui, J.K.-H.; MacLachlan, M.J. "Liquid Crystal Templating in Ammonia: A Novel and Facile Route to Micro- and Mesoporous Metal Nitride/Carbon Composites" *Angew. Chem. Int. Ed.* **2010**, *49*, 9740-9743.

Awards

• Tier 1 Canada Research Chair in Supramolecular Materials	Canada Research Chairs	2015-2029
• Fellow of the Royal Society of Chemistry	RSC (UK)	2016
• Award for Excellence in Materials Chemistry	CSC (National Award)	2016
• Steacie Prize	E.W.R. Steacie Memorial Fund (National Award)	2014
• Fellow of the Royal Society of Canada	Royal Society of Canada	2014
• Killam Award for Excellence in Mentoring	UBC Killam	2013
• Rutherford Memorial Medal in Chemistry	Royal Society of Canada	2013
• JSPS Invitational Fellowship for Research In Japan	Japan Society for the Promotion of Science	2013
• Strem Award for Pure or Applied Inorganic Chemistry	CSC (National award)	2013
• E.W.R. Steacie Memorial Fellowship	NSERC (National award)	2012-2014
• Killam Research Prize	UBC	2012
• Alexander von Humboldt Fellowship for Experienced Researchers	A. v. H. Foundation	2009-2010
• Killam Teaching Prize	UBC Killam	2008

Other

- 6 US patents awarded; several other patents and patent applications filed
- Scientific Editor, *Nanoscale Horizons* (Nov. 1, 2024 – Oct. 31, 2027), RSC
- Editorial Board Member, *Responsive Materials* (2022 – present), Wiley-VCH
- Advisory Board Member, *Materials Chemistry Frontiers* (2016 – present), RSC
- Editorial Board Member, *Aggregate* (2020 – 2023), Wiley-VCH