Julian Chan, PhD MRSC

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EDUCATION

Ph.D. Organic Chemistry	Massachusetts Institute of Technology, **2010**. (*Adviser: Prof. Timothy Swager*)	(GPA: 5.0/5.0)
B.S. Chemistry	University of Illinois at Urbana-Champaign, **2005**. *Summa cum laude.*	(GPA: 4.0/4.0)

PROFESSIONAL EXPERIENCE

July 2015 – present	**Adjunct Professor**, University of Ottawa (Sep 2019 – present) **Assistant Professor**, University of Ottawa (July 2015 – Sep 2019)
Feb 2015 – May 2015	**Visiting Research Scholar**, University of California, Berkeley
Aug 2012 – Dec 2014	**Research Scientist**, IBM – Almaden Research Center
Aug 2010 – Aug 2012	**Postdoctoral Fellow**, Lawrence Berkeley National Laboratory & University of California, Berkeley. (*Adviser: Prof. F. Dean Toste*)

PROFILE SUMMARY

- Secured > $1.11 million in external grants between 2015–2019
- Specialties: Functional organic materials, optoelectronics, nanomedicine
- 40 publications. 6 U.S. patents granted (+2 pending)
- H-index: 23; Total citations: 1,906
- 2019 Ontario Early Researcher Award recipient
- Leadership: supervised 13 students and postdocs since 2015

AWARDS AND HONOURS

- *Ontario Early Researcher Award (ERA),* 2019
- *IBM First Plateau Invention Achievement Award,* 2015
- *IBM Patent Invention Achievement Award,* 2014
- *Thieme Chemistry SYNStar Award,* 2006
- *MIT-DuPont Presidential Fellowship,* 2005–2006
- *UIUC Departmental Highest Distinction,* 2005
- *UIUC James Scholar,* 2005
- *Bronze Tablet Award,* 2005
- *Robert H. Doremus Scholarship,* 2004
- *Jean Dreyfus Boissevain Research Award,* 2004
- *Arthur R. Matheson Award,* 2004

- *Worth Rodebush Award,* 2003
- *Hach Scientific Foundation Scholarship (twice),* 2003 & 2004
- *University of Illinois Dean's List*, 2002–2005
- *Golden Key International Honour Society*, 2002–2005
- *National Society of Collegiate Scholars*, 2002–2005
- *Phi Beta Kappa Honour Society*, 2002–2005
- *Dads Association Library Award,* 2002
- *Ralph E. Telford Achievement Award*, 2002
- *The National Dean's List,* 2001–2005
- *Colgate-Palmolive Research Fellowship,* 2001
- *Pittsburgh Plate Glass Research Grant,* 2001
- *9th Singapore Chemistry Olympiad Silver Medal,* 1997

RESEARCH FUNDING AS PRINCIPAL INVESTIGATOR

Year	Source ***Title of project***	Type	Amount (CAD)	Purpose
2019-2024	Early Researcher Award *Novel Organic Materials with Useful Electronic, Magnetic, and Optical Properties*	Gov.	**$150,000**	Research
2019-2021	New Frontiers in Research Fund *Probing Novel Molecular Designs for Organic Excitonic Superconductors*	Gov.	**$228,250**	Research
2016-2022	NSERC Discovery Grant *Design and Synthesis of Novel Conductive Organic Materials*	Gov.	**$180,000**	Research
2016	Ontario Research Fund *Design and Synthesis of Novel Organic Conductors*	Gov.	**$276,151**	Infrastructure
2015	CFI John Evans Leaders Fund *Design and Synthesis of Novel Organic Conductors*	Gov.	**$276,151**	Equipment
2015	New Professors Library Fund *Design and Synthesis of Molecular Conductors*	Uni.	**$2,000**	Research support
2015	University Startup Funds *Design and Synthesis of Molecular Conductors*	Uni.	**$245,000**	Research
		Total funds:	**$1.36 million** since 2015	

PERSONNEL SUPERVISED

	Undergrad	M.Sc.	Ph.D.	Postdoc	Visiting researcher
Total: 13	6	2	1	3	1

Guoxian Zhang – Ph.D. candidate, Yu Scholar 2016–present
Balamurugan Ayyakkalai – Postdoctoral fellow 2019–2019
Ayoung Shin – B.Sc. candidate, volunteer 2018–2019

Kyle Passley – B.Sc. candidate, NSERC USRA	2018–2019
Harold Lu – B.Sc. candidate, Honors	2017–2018
Dillon Dong – B.Sc. candidate, Honors	2017
Victoria Hillier – B.Sc. candidate, UROP	2017–2018
Janire Matas – Visiting researcher	2017
Prabhat Gautam – Postdoctoral fellow	2017–2018
Craig Yu – M.Sc. candidate (graduated)	2016–2018
Thomas Brossier – Visiting M.Sc. candidate	2016
Tarunpreet Singh Virk – Postdoctoral fellow	2015–2016
Étienne Rhéaume – B.Sc. candidate, NSERC USRA	2015–2016

SERVICE, TEACHING, COLLABORATIONS

External service

- ***External reviewer for these grants:***
  - NSERC Discovery Grants and NFRF (Canada)
  *- A*Star AME Individual Research Grants (Singapore)*
  *- A*Star AME Young Individual Research Grants (Singapore)*
  - KAUST Competitive Research Grants Program (Saudi Arabia)
  - Deutsche Forschungsgemeinschaft (Germany) – declined to review

- ***Peer reviewer for these journals:***

- ACS Applied Materials and Interfaces
- ACS Applied Energy Materials
- ACS Applied Bio Materials
- Journal of Materials Chemistry C
- Journal of Organic Chemistry
- ACS Macro Letters
- Polymer Chemistry
- Beilstein Journal of Organic Chemistry
- Materials Today Communications
- Journal of the American Chemical Society
- New Journal of Chemistry
- RSC Advances
- The Chemical Record
- Journal of Physical Chemistry
- Soft Matter
- Journal of Chemical Education
- ChemistryOpen
- Chemistry – A European Journal

- ***Graduate student poster judge***
  100th Canadian Chemistry Conference and Exhibition, Toronto, May 2017
- ***Ph.D. examiner***, Carleton University, Ottawa, May 2017
- ***Ph.D. examiner,*** École Polytechnique de Montréal, Dec 2016
- ***Scientific writer – Thieme Publishers***, 2006-2007
  Contributed 10 articles to SYNFACTS

Institutional service

- ***Departmental Professional Development Committee***. 2016–present
- ***Undergraduate Honors Research Poster Judge***. 2016–present
- ***Chair or Examiner for M.Sc. & Ph.D. defenses***. 2016–present
- ***Reviewer for International Research Acceleration Program (internal grant)***. 2017

International collaborations (as PI)

- *Cormode lab,* ***University of Pennsylvania, USA***. 2017–2018
- *Sun lab,* ***Nanyang Technological University, Singapore***. 2017–2018
- *Xia lab,* ***Institute of Chemistry, Chinese Academy of Sciences, China***. 2017–present
- *Gross lab,* ***IBM Research – Zürich, Switzerland***. 2016–2017
- *Liu lab,* ***National Central University, Taiwan***. 2016–present
- *Wong lab,* ***University of California, Riverside, USA***. 2016

Teaching

- ***CHM 2120B: Organic Chemistry II***. 2015–present. Class size: 420
- ***CHM 4155: Polymer and Applied Chemistry***. 2018–present. Class size: 95
- ***CHM 8256S: Graduate Organic Chemistry Seminar***. 2016–present. Class size: 30
- ***CHM 8304: Special Topics - Functional Organic Materials***. Under development.

PUBLICATIONS

- 1,906 citations across 40 papers. H-index: 23
- Corresponding authorship marked by *
- Entries 30, 33–40 are from independent research

Published papers

40. Zhang, G.; Gautam, P.; **Chan, J. M. W.*** Symmetrical and Unsymmetrical Fluorine-Rich Ullazines via Controlled Cycloaromatizations. *Org. Chem. Front.* **2020**, *7*, 787–795.

39. **Chan, J. M. W.*** Pentafluorosulfanyl Group: An Emerging Tool in Optoelectronic Materials. *J. Mater. Chem.* C **2019**, *7*, 12822–12834. *Invited contribution for the 2019 Emerging Investigators Themed Issue.*

38. Niu, X.; Gautam, P.; Kuang, Z.; Yu, C. P.; Guo, Y.; Song, H.; Guo, Q.; **Chan, J. M. W.***; Xia, A. Intramolecular Charge Transfer and Solvation Dynamics of Push-Pull Dyes with Different π-Conjugated Linkers. *Phys. Chem. Chem. Phys.* **2019**, *21*, 17323–17331.

37. Zhang, G.; Lee, Y.-J.; Gautam, P.; Lin, C.-C.; Liu, C.-L.; **Chan, J. M. W.*** Pentafluorosulfanylated Polymers as Electrets in Nonvolatile Organic Field-Effect Transistor Memory Devices. *J. Mater. Chem. C* **2019**, *7*, 7865–7871. (Inside front cover)

36. Zhang, G.; Naha, P. C.; Gautam, P.; Cormode, D. P.; **Chan, J. M. W.*** Water-Dispersible Bismuth–Organic Materials with Computed Tomography (CT) Contrast Properties. *ACS Appl. Bio Mater.* **2018**, *1*, 1918–1926.

35. Gautam, P.; Wang, Y.; Zhang, G.; Sun, H.; **Chan, J. M. W.*** Using the Negative Hyperconjugation Effect of Pentafluorosulfanyl Acceptors to Enhance Two-Photon Absorption in Push-Pull Chromophores. *Chem. Mater.* **2018**, *30*, 7055–7066.

34. Gautam, P.; Yu, C. P.; Zhang, G.; Hillier, V. E.; **Chan, J. M. W.*** Pulling with the Pentafluorosulfanyl Acceptor in Push-Pull Dyes. *J. Org. Chem.* **2017**, *82*, 11008–11020.

    • Among most downloaded articles of October 2017

33. Zhang, G.; **Chan, J. M. W.*** Reversibly Thermochromic Bismuth-Organic Materials with Tunable Optical Gaps. *J. Mater. Chem. C* **2017**, *5*, 10007–10015.

32. Liu, S.; Ono, R. J.; Wu, H.; Teo, J. Y.; Liang, Z. C.; Xu, K.; Zhang, M.; Zhong, G.; Tan, J. P. K.; Ng, M.; Yang, C.; **Chan, J.**; Ji, Z.; Bao, C.; Kumar, K.; Gao, S.; Lee, A.; Fevre, M.; Dong, H.; Ying, J. Y.; Li, L.; Fan, W.; Hedrick, J. L.; Yang, Y. Y. Highly Potent Antimicrobial Polyionenes with Rapid Killing Kinetics, Skin Biocompatibility and in vivo Bactericidal Activity. *Biomaterials* **2017**, *127*, 36–48.

31. **Chan, J. M. W.**; Wojtecki, R. J.; Sardon, H.; Lee, A. L. Z.; Smith, C. E.; Shkumatov, A.; Gao, S.; Kong, H.; Yang, Y. Y.; Hedrick, J. L. Self-Assembled, Biodegradable Magnetic Resonance Imaging Agents: Organic Radical-Functionalized Diblock Copolymers. *ACS Macro Lett.* **2017**, *6*, 176–180.

30. Virk, T. S.; Ilawe, N. V.; Zhang, G.; Yu, C. P.; Wong, B. M.; **Chan, J. M. W.*** Sultam-based Hetero[5]helicene: Synthesis, Structure, and Crystallization-Induced Emission Enhancement. *ACS Omega* **2016**, *1*, 1336–1342.

    • Second most highly downloaded article of Issue No. 6

29. **Chan, J. M. W.**; Tan, J. P. K.; Engler, A. C.; Ke, X.; Gao, S.; Yang, C.; Sardon, H.; Yang, Y. Y.; Hedrick, J. L. Organocatalytic Anticancer Drug Loading of Degradable Polymeric Mixed Micelles via a Biomimetic Mechanism. *Macromolecules* **2016**, *49*, 2013–2021.

    • Top 20 most downloaded articles of March 2016.

28. Ong, Z. Y.; Coady, D. J.; Tan, J. P. K.; Li, Y.; **Chan, J. M. W.**; Hedrick, J. L.; Yang, Y. Y. Design and Synthesis of Biodegradable Grafted Cationic Polycarbonates as Broad Spectrum Antimicrobial Agents. *J. Polym. Sci., Part A: Polym. Chem.* **2016**, *54*, 1029–1035.

    • Spotlight article

27. Sardon, H.; Tan, J. P. K.; **Chan, J. M. W.**; Mantione, D.; Mecerreyes, D.; Hedrick, J. L.; Yang, Y. Y. Thermoresponsive Random Poly(ether urethanes) with Tailorable LCSTs for Anticancer Drug Delivery. *Macromol. Rapid Commun.* **2015**, *36*, 1761–1767.

26. Pascual, A.; Tan, J. P. K.; **Chan, J. M. W.**; Coady, D. J.; Mecerreyes, D.; Hedrick, J. L.; Yang, Y. Y.; Sardon, H. Broad-Spectrum Antimicrobial Polycarbonate Hydrogels with Fast Degradability. *Biomacromolecules* **2015**, *16*, 1169–1178.

25. Engler, A. C.; Ke, X.; Gao, S.; **Chan, J. M. W.**; Coady, D. J.; Ono, R. J.; Lubbers, R.; Nelson, A.; Yang, Y. Y.; Hedrick, J. L. Hydrophilic Polycarbonates: Promising Degradable Alternatives to Poly(ethyleneglycol)-based Stealth Materials. *Macromolecules* **2015**, *48*, 1673–1678.

24. Xu, Q.; Sardon, H.; **Chan, J. M. W.**; Hedrick, J. L.; Yang, Y. Y. Polyurethane-coated Silica Particles with Broad-Spectrum Antibacterial Properties. *Polym. Chem.* **2015**, *6*, 2011–2022.

23. **Chan, J. M. W.***; Zhang, X.; Sardon, H.; Engler, A. C.; Fox, C. H.; Frank, C. W.; Waymouth, R. M.; Hedrick, J. L. Organocatalytic Ring-Opening Polymerization of Trimethylene Carbonate to Yield a Biodegradable Polycarbonate. *J. Chem. Educ*. **2015**, *92*, 708–713.

22. Ng, V. W. L.; **Chan, J. M. W.**; Sardon, H.; Ono, R. J.; García, J. M.; Yang, Y. Y.; Hedrick, J. L. Antimicrobial Hydrogels: A New Weapon in the Arsenal against Multidrug Resistant Infections. *Adv. Drug Deliv. Rev.* **2014**, *78*, 46–62.

21. Ke, X.; Ng, V. W. L.; Ono, R. J.; **Chan, J. M. W.**; Krishnamurthy, S.; Wang, Y.; Hedrick, J. L.; Yang, Y. Y. Role of Non-Covalent and Covalent Interactions in Cargo Loading Capacity and Stability of Polymeric Micelles. *J. Control. Release* **2014**, *193*, 9–26.

20. Liu, S. Q.; Venkataraman, S.; Ong, Z. Y.; **Chan, J. M. W.**; Yang, C.; Hedrick, J. L.; Yang, Y. Y. Overcoming Multidrug Resistance in Microbials Using Nanostructures Self-assembled from Cationic Bent-core Oligomers. *Small* **2014**, *10*, 4130–4135.

19. **Chan, J. M. W.***; Ke, X.; Engler, A. C.; Sardon, H.; Yang, Y. Y.; Hedrick, J. L. Chemically Modifiable *N*-Heterocycle-functionalized Polycarbonates as a Platform for Diverse Smart Biomimetic Nanomaterials. *Chem*. *Sci.* **2014**, *5*, 3294–3300.

    • Among "Most downloaded articles" of July 2014

18. Sardon, H.; **Chan, J. M. W.**; Ono, R. J.; Mecerreyes, D.; Hedrick, J. L. Highly Tunable Polyurethanes: Organocatalyzed Polyaddition and Subsequent Post-polymerization Modification of Pentafluoro-phenyl Ester Sidechains. *Polym. Chem.* **2014**, *5*, 3547–3550.

17. Sardon, H.; Engler, A. C.; **Chan, J. M. W.**; García, J. M.; Coady, D. J.; Pascual, A.; Mecerreyes, D.; Jones, G. O.; Rice, J. E.; Horn, H. W.; Hedrick, J. L. Organic Acid-Catalyzed Polyurethane Formation via a Dual-Activated Mechanism: Unexpected Preference of *N*-activation over *O*-activation of Isocyanates. *J. Am. Chem. Soc.* **2013**, *135*, 16235–16241.

16. **Chan, J. M. W.***; Sardon, H.; Engler, A. C.; García, J. M.; Hedrick, J. L. Tetra-*n*-butylammonium Fluoride as an Efficient Transesterification Catalyst for Functionalizing Cyclic Carbonates and Aliphatic Polycarbonates. *ACS Macro Lett.* **2013**, *2*, 860–864.

    • Top 20 most read article of the month.

15. Engler, A. C.; **Chan, J. M. W.**; Fukushima, K.; Coady, D. J.; Yang, Y. Y.; Hedrick, J. L. Polycarbonate-based Brush Polymers with Detachable Disulfide-linked Side Chains. *ACS Macro Lett.* **2013**, *2*, 332–336.

14. Sardon, H.; Engler, A. C.; **Chan, J. M. W.**; Coady, D. J.; O'Brien, J. M.; Mecerreyes, D.; Yang, Y. Y.; Hedrick, J. L. Homogeneous Isocyanate- and Catalyst-free Synthesis of Polyurethanes in Aqueous Media. *Green Chem.* **2013**, *15*, 1121–1126.

13. Engler, A. C.; **Chan, J. M. W.**; Coady, D. J.; O'Brien, J. M.; Sardon, H.; Nelson, A.; Sanders, D. P.; Yang, Y. Y.; Hedrick, J. L. Accessing New Materials Through Polymerization and Modification of a Polycarbonate with a Pendant Activated Ester. *Macromolecules* **2013**, *46*, 1283–1290.

12. **Chan, J. M. W.**; Bauer, S.; Sorek, H.; Sreekumar, S.; Wang, K.; Toste, F. D. Studies on the Vanadium-Catalyzed Nonoxidative Depolymerization of *Miscanthus giganteus*-derived Lignin. *ACS Catal.* **2013**, *3*, 1369–1377.

11. **Chan, J. M. W.**; Amarante, G. W.; Toste, F. D. Tandem Cycloisomerization/Suzuki Coupling of Arylethynyl MIDA Boronates. *Tetrahedron* **2011**, *67*, 4306–4312.

    • Front cover article of this issue.

10. **Chan, J. M. W.**; Kooi, S. E.; Swager, T. M. Synthesis of Stair-stepped Polymers Containing Dibenz[*a,h*]anthracene Subunits. *Macromolecules* **2010**, *43*, 2789–2793.

9. **Chan, J. M. W.**; Tischler, J. R.; Kooi, S. E.; Bulović, V., Swager, T. M. Synthesis of J-Aggregating Dibenz[*a,j*]anthracene-Based Macrocycles. *J. Am. Chem. Soc.* **2009**, *131*, 5659–5666.

8. **Chan, J. M. W.**; Swager, T. M. Synthesis of Arylethynylated Cyclohexa-*m*-phenylenes via Sixfold Suzuki Coupling", *Tetrahedron Lett.* **2008**, *49*, 4912–4914.

7. Song, Y.; **Chan, J. M. W.**; Tovian, Z.; Secrest, A.; Nagy, E.; Krysiak, K.; Bergan, K.; Parniak, M. A.; Oldfield, E. Bisphosphonate Inhibitors of ATP-mediated HIV-1 Reverse Transcriptase Catalyzed Excision of Chain-terminating 3'-azido, 3'-deoxythymidine: A QSAR Investigation. *Bioorg. Med. Chem.* **2008**, *16*, 8959–8967.

6. Hudock, M. P.; Sanz-Rodriguez, C. E.; Song, Y.; **Chan, J. M. W.**; Zhang, Y.; Odeh, S.; Kosztowski, T.; Leon-Rossell, A.; Concepcion, J. L.; Yardley, V.; Croft, S. L.; Urbina, J. A.; Oldfield, E. Inhibition of Trypanosoma cruzi Hexokinase by Bisphosphonates. *J. Med. Chem.* **2006**, *49*, 215–223.

5. Kotsikorou, E.; Song, Y.; **Chan, J. M. W.**; Faelens, S.; Tovian, Z.; Broderick, E.; Bakalara, N.; Docampo, R.; Oldfield, E. Bisphosphonate Inhibition of the Exopolyphosphatase Activity of the Trypanosoma brucei Soluble Vacuolar Pyrophosphatase. *J. Med. Chem.* **2005**, *48*, 6128–6139.

4. Sanders, J. M.; Song, Y.; **Chan**, **J. M. W.**; Jennings, S.; Kosztowski, T.; Odeh, S.; Flessner, R.; Kotsikorou, E.; Meints, G.; Gomez, A. O.; Gonzalez-Pacanowska, D.; Raker, A. M.; Wang, H.; Morita, C. T.; Oldfield, E. Pyridinium-1-yl Bisphosphonates are Potent Inhibitors of Farnesyl Diphosphate Synthase. *J. Med. Chem.* **2005**, *48*, 2957–2963.

3. Ling, Y.; Sahota, G.; Odeh, S.; **Chan, J. M. W.**; Araujo, F. G.; Moreno, S. N. J.; Silvia, N. J.; Oldfield, E. Bisphosphonate Inhibitors of Toxoplasma gondi Growth: In Vitro, QSAR and In Vivo Investigations. *J. Med. Chem.* **2005**, *48*, 3130–3140.

2. Sanders, J. M.; Ghosh, S.; **Chan, J. M. W.**; Meints, G. A.; Wang, H.; Raker, A. M.; Song, Y.; Colantino, A.; Burzynska, A.; Kafarski, P.; Morita, C. T.; Oldfield, E. Quantitative Structure-Activity Relationships for γ,δ T-Cell Activation by Bisphosphonates. *J. Med. Chem.* **2004**, *47*, 375–384.

1. Ghosh, S.; **Chan, J. M. W.**; Lea, C. R.; Meints, G. A.; Lewis, J. C.; Tovian, Z. S.; Flessner, R. M.; Loftus, T. C.; Bruchhaus, I.; Kendrick, H.; Croft, S. L.; Kemp, R. G.; Kobayashi, S.; Nozaki, T.; Oldfield, E. Effects of Bisphosphonates on the Growth of Entamoeba histolytica and Plasmodium Species in vitro and in vivo. *J. Med. Chem.* **2004**, *47*, 175–187.

U.S. PATENTS AND INVENTION DISCLOSURES

8. **Chan, J. M. W.**; Wojtecki, R. J.; Hedrick, J. L.; Yang, Y. Y.; Lee, A. L. Z. Biodegradable Organic Radical-Functionalized Polycarbonates for Medical Applications. *U.S. Patent 9,718,951,* **2017**.

7. **Chan, J. M. W.**; Hedrick, J. L.; Ono, R. J.; Teo, J. Y.; Yang, Y. Y.; Zhang, M. S. Antimicrobial Polymers Formed by Bulk Polyaddition. *U.S. Patent 9,642,360*, **2017**.

6. Breyta, G.; **Chan, J. M. W.**; Coady, D. J.; Engler, A. C.; Garcia, J. M.; Han, W.; Hedrick, J. L.; Liu, S.; Nelson, A.; Ono, R. J.; Teo, J. Y.; Yang, Y. Y.; Zhang, M. S. Condensation Polymerization for Antimicrobial Applications. *U.S. Patent 9,580,554,* **2017**.

5. **Chan, J. M. W.**; Engler, A. C.; Sardon, H.; Hedrick, J. L.; Yang, Y. Y. Polycarbonates Bearing Aromatic *N*-Heterocycles for Drug Delivery. *U.S. Patent 9,717,797*, **2017**.

4. **Chan, J. M. W.**; Coady, D. J.; Engler, A. C.; Garcia, J. M.; Hedrick, J. L.; Ong, Z. Y.; Sardon, H.; Yang, Y. Y. Catalyst-free Methods of Forming Polyurethanes from Pentafluorophenyl Carbonates. *U.S. Patent 9,062,160*, **2015**.

3. Lin, B. F.; **Chan, J. M. W.**; Nelson, A.; Engler, A. C.; Hedrick, J. L.; Maune, H. Irreversibly Degradable Polycarbonate-based Complex Coacervate. *IBM Invention Disclosure*, **2014**.

2. Sanders, J. M.; Song, Y.; **Chan, J. M. W.**; Oldfield, E.; Zhang, Y. Bisphosphonate Compounds and Methods for Bone Resorption Diseases, Cancer, Bone Pain, Immune Disorders and Infectious Diseases. *U.S. Patent 8,071,573*, **2011**.

1. Parniak, M.; Mellors, J. W.; Oldfield, E.; Tovian, Z.; **Chan, J. M. W.** Composition and Methods for Use of Antiviral Drugs in the Treatment of Retroviral Diseases Resistant to Nucleoside Reverse Transcriptase Inhibitors. *U.S. Patent App. 10/927683*, **2004**.

CONFERENCES AND INVITED TALKS

14. 102nd Canadian Chemistry Conference and Exhibition, Quebec City, Canada, June 2019. *"Innovative Concepts in Organic Materials"* Symposium. *Invited.*

13. 101st Canadian Chemistry Conference and Exhibition, Edmonton, Canada, 2018. *"Emerging Materials Chemistry Investigator"* Symposium. *Invited*.

12. Molecular Foundry, Lawrence Berkeley National Laboratory, Berkeley, USA, January 2018. *Invited*.

11. 100th Canadian Chemistry Conference and Exhibition, Toronto, ON, Canada, May 2017.

10. University of Ottawa New Professors Lecture Program, Ottawa, ON, Canada, May 2017. *Invited*.

9. 99th Canadian Chemistry Conference and Exhibition, Halifax, NS, Canada, June 2016.

8. National University of Singapore, Singapore, September 2014. *Invited*.

7. University of California, Riverside, California, USA, February 2014. *Invited*.

6. Carnegie Mellon University, Pittsburgh, Pennsylvania, USA, December 2013. *Invited*.

5. IBM Almaden Research Center, San Jose, California, USA, April 2012. *Invited*.
4. MIT Research Symposium in Organic and Bioorganic Chemistry, Cambridge, USA, 2009.
3. 234th ACS National Meeting, Boston, Massachusetts, USA, 2007.
2. 21st International Liquid Crystal Conference, Keystone, Colorado, USA, 2006.
1. Colgate-Palmolive Research Symposium, Urbana, Illinois, USA, 2002. *Invited*.

PROFESSIONAL MEMBERSHIPS

- American Chemical Society (ACS)
- Member of the Royal Society of Chemistry (MRSC)
- International Union of Pure and Applied Chemistry (IUPAC)
- Canadian Society for Chemistry (CSC)
- Chemical Institute of Canada (CIC)
- The Singapore National Institute of Chemistry (SNIC)