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## Zachary M. Hudson

Department of Chemistry, The University of British Columbia

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Institution	Position/Degree	Advisor	Dates
University of California, Santa Barbara, USA	Postdoctoral Fellow	C. J. Hawker	09/2014 – 07/2015
University of Bristol, UK	Postdoctoral Fellow	I. Manners	09/2012 – 08/2014
Queen's University, Canada	Ph.D.	S. Wang	09/2008 – 08/2012
Nagoya University, Japan	Graduate Fellow	S. Yamaguchi	06/2011 – 08/2011
Jilin University, China	Graduate Fellow	Y. Wang	05/2009 – 06/2009
Queen's University, Canada	B.Sc.	S. Wang	09/2004 – 04/2008

**Appointments**

Institution	Position	Dates
The University of British Columbia, Department of Chemistry	Associate Professor and Canada Research Chair	07/2021 – Present
	Assistant Professor and Canada Research Chair	07/2015 – 06/2021
NEXE Innovations	Chief Scientific Officer	12/2019 – 09/2021
NSERC	Council Member	05/2018 – 02/2021

**Awards and Distinctions****At UBC:**

- 2020 ACS PMSE Young Investigator Award
- 2020 CSC Emerging Materials Investigator Award
- 2019 CNC-IUPAC Travel Award
- 2016 Tier II Canada Research Chair

**Prior to UBC (selected):**

- 2014 UCSB Elings Prize Fellowship in Experimental Science
- 2014 NSERC Postdoctoral Fellowship
- 2013 EU Marie Curie International Incoming Fellowship
- 2013 Canadian Council of University Chemistry Chairs Doctoral Award
  - Awarded for the top Ph.D. thesis in chemistry in Canada.
- 2012 Governor General's Academic Gold Medal
  - Awarded for the top Ph.D. thesis at each university in Canada.
- 2012 Chemical Institute of Canada Award for Graduate Work in Inorganic Chemistry
  - Awarded for the top Ph.D. thesis in inorganic chemistry in Canada.
- 2011 Japan Society for the Promotion of Science (JSPS) Graduate Fellowship
- 2011 Queen's University Department of Chemistry Teaching Assistant of the Year
- 2009 NSERC Canada Graduate Scholarship (CGS-D)
- 2009 Sun Microsystems Graduate Scholarship
- 2008 NSERC Canada Graduate Scholarship (CGS-M)
- 2008 Governor General's Academic Silver Medal
- 2008 Department of Chemistry Medal
- 2007 Canadian Society for Chemistry Medal

## Graduate and Postdoctoral Supervision

Student Name	Position	Dates	Role
Feng Shao	Postdoctoral Fellow	04/2018 – 03/2020	Supervisor
Chris Tonge	Ph.D. student	09/2015 – 07/2020	Supervisor
Kyle Thompson	M.Sc. student	09/2015 – 03/2019	Supervisor
Ethan Sauv�	Ph.D. student	09/2016 – 03/2021	Supervisor
Nathan Paisley	Ph.D. student	09/2016 – Present	Supervisor
Yonghui Wang	M.Sc. student	09/2016 – 02/2019	Supervisor
Don Mayder	Ph.D. student	09/2017 – Present	Supervisor
Cheyenne Christopherson	Ph.D. student	09/2017 – Present	Supervisor
Alex Polgar	Ph.D. student	09/2018 – Present	Supervisor
Jade Poisson	Ph.D. student	09/2018 – Present	Supervisor
Ryoga Hojo	Ph.D. student	09/2020 – Present	Supervisor
Pengfei Xu	Ph.D. student	09/2020 – Present	Supervisor
William Primrose	Ph.D. student	09/2020 – Present	Supervisor
Katrina Bergmann	Ph.D. Student	09/2021 – Present	Supervisor
Seja Elgadi	Ph.D. Student	09/2021 – Present	Supervisor
Lemin Li	Ph.D. Student	09/2021 – Present	Supervisor
Angelica Pym	Ph.D. Student	09/2021 – Present	Supervisor

## Undergraduate Supervision

Student Name	Position	Dates	Role
Susan Cheng	Summer student & CHEM 449	09/2015 – 08/2016	Supervisor
Daniel Bajj	Summer student & CHEM 449	05/2016 – 08/2017	Co-Supervisor
Ethan Sauv�	Summer student	05/2016 – 02/2016	Supervisor
Jordan Heyes	Summer student & CHEM 449	09/2016 – 08/2017	Supervisor
Teresa Howard	Summer student	09/2016 – 08/2017	Supervisor
Lasya Vankayala	Volunteer	01/2017 – 04/2017	Supervisor
Sarah Halldorson	Summer student & CHEM449	05/2017 – 08/2019	Supervisor
Luigi Alde	Volunteer	01/2018 – 04/2018	Supervisor
Brandon Kato	Summer student	01/2018 – 08/2018	Supervisor
Harrison Lefeaux	CHEM 445	09/2017 – 04/2018	Supervisor
Hayley Macmillan	CHEM 449	09/2017 – 04/2018	Supervisor
Faith Park	Summer student	05/2018 – 08/2018	Supervisor
Angela Lin	Summer student	05/2018 – 08/2019	Supervisor
Lingzi Gao	CHEM 445	09/2018 – 05/2019	Supervisor
Jaesuk Park	CHEM 445	09/2018 – 05/2019	Supervisor
Shine Huang	Volunteer	05/2019 – 08/2019	Supervisor
Annelie Reyes	CHEM 445	09/2019 – 04/2020	Supervisor

Brendan Liaw	CHEM 445	09/2019 – 04/2020	Supervisor
Dania Samara	Volunteer	01/2020 – 04/2020	Supervisor
Anoop Sangha	Volunteer	01/2020 – 04/2020	Supervisor
Connor Dalton	CHEM 449	09/2020 – 04/2021	Supervisor
Shine Huang	Summer student	05/2021 – 08/2021	Supervisor

## Teaching

Course	Students	Class Hours	Term	Rating <sup>a</sup>
CHEM 427 – Applications of Materials Chemistry <sup>a</sup>	26	36	2020	4.9/5
CHEM 121 – Structure and Bonding in Chemistry	256	36	2020	4.9/5
CHEM 427 – Applications of Materials Chemistry	18	36	2019	4.7/5
CHEM 121 – Structure and Bonding in Chemistry	220	36	2019	4.9/5
CHEM 427 – Applications of Materials Chemistry	20	36	2018	4.9/5
CHEM 121 – Structure and Bonding in Chemistry	220	36	2018	4.8/5
CHEM 427 – Applications of Materials Chemistry	20	36	2017	4.9/5
CHEM 121 – Structure and Bonding in Chemistry	234	36	2017	4.8/5
CHEM 121 – Structure and Bonding in Chemistry	240	36	2016	4.9/5
CHEM 121 – Structure and Bonding in Chemistry	222	36	2015	4.7/5

<sup>a</sup>Based on answer to teaching evaluation question: "Overall, the instructor was an effective teacher."

## Service

### Government Relations

- NSERC Council, Member (2018-2021)
- NSERC-Chemistry Liason Committee, Founding Member (2016-2018)
- Canadian Society for Chemistry Advocacy Committee, Founding Member (2013-2015)

### UBC Committees

- Chemists for Diversity and Inclusion, Faculty Liason (2020-Present)
- Space Committee, Member (2019-Present)
- Graduate Recruiting Committee, Chair (2017-Present)
- Fundraising and Development Committee, Member (2017-2019)
- Research Benchmarking Committee, Member (2017)
- Inorganic Discussion Group Coordinator (2016)
- Undergraduate Recruiting Committee, Member (2016)
- Graduate Recruiting Committee, Member (2015, 2016)
- Graduate Student Symposium Committee, Member (2015)

### Conferences & Outreach

- Materials Division Chair, Canadian Chemistry Conference and Exhibition, Vancouver, 2023
- Co-organizer, 24<sup>th</sup> International Symposium on the Photochemistry and Photophysics of Coordination Compounds, Vancouver, BC (2022)
- Volunteer, Verna J. Kirkness Indigenous Outreach Program (2021 – Present)
- Co-Organizer, "Celebrating the Life of Suning Wang." Symposium, Canadian Chemistry Conference and Exhibition, Montreal, QC (2021)
- Presenter, First-Year Open House Lab Tours (2016, 2018, 2019)
- Co-Organizer, International Conference on Heteroatom Chemistry (with D. Gates, Vancouver, BC, 2016)
- Demonstrator, "Imagine Day" UBC Welcome Event (2016)

## Publications

### At UBC

#### 2021

73. **Polymer Dots with Enhanced Photostability, Quantum Yield, and Two-Photon Cross-Section Using Structurally Constrained Deep-Blue Fluorophores**  
C. M. Tonge, D. M. Mayder, G. D. Nguyen, M. V. Tran, G. Tom, G. H. Darwish, R. Gupta, K. Lix, S. Kamal, W. R. Algar, S. A. Burke and Z. M. Hudson  
*J. Am. Chem. Soc.* **2021**, accepted.
72. **Donor-Acceptor Materials Exhibiting Deep Blue Emission and Thermally Activated Delayed Fluorescence with Tris(triazolo)triazine**  
R. Hojo, D. M. Mayder and Z. M. Hudson  
*J. Mater. Chem. C* **2021**, accepted.
71. **Near-Infrared Emitting Boron Difluoride Curcuminoid-Based Polymers Exhibiting Thermally Activated Delayed Fluorescence as Biological Imaging Probes**  
N. R. Paisley, S. V. Halldorson, M. V. Tran, R. Gupta, S. Kamal, W. R. Algar and Z. M. Hudson  
*Angew. Chem. Int. Ed.* **2021**, 60, 18630–18638.
70. **Enhancement of Red Thermally Assisted Fluorescence in Bottlebrush Block Copolymers**  
A. M. Polgar, J. Poisson, C. J. Christopherson and Z. M. Hudson  
*Macromolecules* **2021**, in press.
69. **Red-Emissive Cell-Penetrating Polymer Dots Exhibiting Thermally Activated Delayed Fluorescence for Time-Gated Cellular Imaging**  
C. J. Christopherson, N. R. Paisley, Z. Xiao, W. R. Algar and Z. M. Hudson  
*J. Am. Chem. Soc.* **2021**, in press.
68. **Preparation of Patterned and Multilayer Thin Films for Organic Electronics via Oxygen-Tolerant SI-PET-RAFT**  
J. Poisson, A. M. Polgar, M. Fromel, C. W. Pester and Z. M. Hudson  
*Angew. Chem. Int. Ed.* **2021**, in press.
67. **Yield Stress and Wall Slip of Kaolinite Networks**  
A. Abbasi Moud, J. Poisson, Z. M. Hudson and S. G. Hatzikiriakos  
*Phys. Fluids* **2021**, 33, 053105.
66. **Deep-Blue Fluorophores with Imidazoacridine Acceptors: Enhancing Photostability and Two-Photon Fluorescence using Structural Constraint**  
E. R. Sauvé, C. M. Tonge and Z. M. Hudson  
*J. Mater. Chem. C* **2021**, 9, 4164-4172.
65. **Exploring the Scope of Through-Space Charge Transfer Thermally Activated Delayed Fluorescence in Acrylic Donor-Acceptor Copolymers**  
J. Poisson, C. M. Tonge, N. R. Paisley, E. R. Sauvé, H. McMillan, S. V. Halldorson and Z. M. Hudson  
*Macromolecules* **2021**, 54, 2466–2476.

#### 2020

64. **Towards Biodegradable Electronics: Ionic Diode Based on a Cellulose Nanocrystals-Agarose Hydrogel**  
K. Nyamayaro, P. Keyvani, F. D'Acerno, J. Poisson, Z.M. Hudson, C. Michal, J. Madden, S. Hatzikiriakos, P. Mehrkhodavandi  
*ACS Appl. Mater. Interfaces* **2020**, 12, 52182–52191.
63. **Organization of Chromophores into Multiblock Bottlebrush Nanofibers Allows for Regulation of Energy Transfer Processes**  
E.R. Sauvé, C.M. Tonge and Z.M. Hudson  
*Chem. Mater.* **2020**, 32, 2208-2219.

62. **Polymer Crystallization by Photochemical Dimerization of a PDMS Copolymer**  
T. Wright, Y. Petel, C. Zellman, E.R. Sauvé, [Z.M. Hudson](#), C. Michal and M.O. Wolf  
*Chem. Sci.* **2020**, *11*, 3081-3088.
61. **Thermally Assisted Fluorescent Polymers: Polycyclic Aromatic Materials for High Color Purity and White Light Emission**  
A.M. Polgar, C.M. Tonge, C.J. Christopherson, N.R. Paisley, A.C. Reyes and [Z.M. Hudson](#)  
*ACS Appl. Mater. Interfaces* **2020**, *12*, 38602-38613.
60. **Color-Tunable Thermally-Activated Delayed Fluorescence in Oxadiazole-Based Acrylic Copolymers: Photophysical Properties and Applications in Ratiometric Oxygen Sensing**  
C.M. Tonge, N.R. Paisley, A.M. Polgar, K. Lix, W.R. Algar and [Z.M. Hudson](#)  
*ACS Appl. Mater. Interfaces* **2020**, *12*, 6525-6535.
59. **1,8-Naphthalimide-Based Polymers Exhibiting Deep-Red Thermally Activated Delayed Fluorescence and their Application in Ratiometric Temperature Sensing**  
C.J. Christopherson, D.M. Mayder, J. Poisson, N.R. Paisley, C.M. Tonge and [Z.M. Hudson](#)  
*ACS Appl. Mater. Interfaces* **2020**, *12*, 20000-20011.
58. **Dextran-Functionalization of Semiconducting Polymer Dots and Conjugation with Tetrameric Antibody Complexes for Bioanalysis and Imaging**  
K. Lix, M.V. Tran, M. Massey, K. Rees, E.R. Sauvé, [Z.M. Hudson](#) and W.R. Algar  
*ACS Appl. Bio. Mater.* **2020**, *3*, 432-440.
57. **Bis(hexamethylazatriangulene)sulfone: A High-Stability Deep Blue-Violet Fluorophore with 100% Quantum Yield and CIEy < 0.07**  
C.M. Tonge, J. Zeng, Z. Zhao, B.Z. Tang and [Z.M. Hudson](#)  
*J. Mater. Chem. C* **2020**, *8*, 5150-5155.
56. **Blue to Yellow Thermally Activated Delayed Fluorescence with Quantum Yields Near Unity in Acrylic Polymers Based on D- $\pi$ -A Pyrimidines**  
A.M. Polgar, J. Poisson, N.R. Paisley, C.J. Christopherson, A.C. Reyes and [Z.M. Hudson](#)  
*Macromolecules* **2020**, *53*, 2039-2050.
55. **Tunable Benzothiadiazole-Based Donor-Acceptor Materials for Two-Photon Excited Fluorescence**  
N.R. Paisley, C.M. Tonge, D.M. Mayder, K.A. Thompson and [Z.M. Hudson](#)  
*Mater. Chem. Front.* **2020**, *4*, 555 - 566.
54. **Thermally Activated Delayed Fluorescence in 1,3,4-Oxadiazoles with  $\pi$ -Extended Donors**  
D.M. Mayder, C.M. Tonge and [Z.M. Hudson](#)  
*J. Org. Chem.* **2020**, *85*, 11094–11103.
53. **Donor-Acceptor Materials Exhibiting Thermally Activated Delayed Fluorescence using a Planarized N-phenylbenzimidazole Acceptor**  
E.R. Sauvé, J. Paeng, S. Yamaguchi and [Z.M. Hudson](#)  
*J. Org. Chem.* **2020**, *85*, 108-117.
52. **Hierarchical Self-Assembly of Luminescent Triblock Bottlebrush Copolymers**  
F. Shao, Y. Wang, C.M. Tonge, E.R. Sauvé and [Z.M. Hudson](#)  
*Polym. Chem.* **2020**, *11*, 1062 - 1071.
51. **Stimuli-Responsive Thermally Activated Delayed Fluorescence in Polymer Nanoparticles and Thin Films: Applications in Chemical Sensing and Imaging**  
N.R. Paisley, C.M. Tonge and [Z.M. Hudson](#)  
*Front. Chem.* **2020**, *8*, 229.

50. **Aggregation-Induced Energy Transfer in Colour-Tunable Multiblock Bottlebrush Nanofibers**  
E.R. Sauv , C.M. Tonge and [Z.M. Hudson](#)  
*J. Am. Chem. Soc.* **2019**, *141*, 16422-16431.
49. **Interface-Dependent Aggregation-Induced Delayed Fluorescence in Bottlebrush Polymer Nanofibers**  
C.M. Tonge and [Z.M. Hudson](#)  
*J. Am. Chem. Soc.* **2019**, *141*, 13970-13976.
48. **Self-Assembly of Giant Bottlebrush Block Copolymer Surfactants from Luminescent Organic Electronic Materials**  
Y. Wang, F. Shao, E.R. Sauv , C.M. Tonge and [Z.M. Hudson](#)  
*Soft Matter* **2019**, *15*, 5421 - 5430.
47. **Cu(0)-RDRP as an Efficient and Low-Cost Synthetic Route to Blue-Emissive Polymers for OLEDs**  
C.M. Tonge, F. Yuan, Z.-H. Lu and [Z.M. Hudson](#)  
*Polym. Chem.* **2019**, *10*, 3288-3297.
46. **Fluorescent Heterotelechelic Single-Chain Polymer Nanoparticles: Synthesis, Spectroscopy and Cellular Imaging**  
D.N.F. Bajj, M.V. Tran, H.-Y. Tsai, H. Kim, N.R. Paisley, W.R. Algar and [Z.M. Hudson](#)  
*ACS Appl. Nano Mater.* **2019**, *2*, 898-909.

## **2018**

45. **Multiblock Bottlebrush Nanofibers from Organic Electronic Materials**  
C.M. Tonge, E.R. Sauv , S. Cheng, T.A. Howard and [Z.M. Hudson](#)  
*J. Am. Chem. Soc.* **2018**, *140*, 11599-11603.
44. **An Efficient Room-Temperature Synthesis of Highly Phosphorescent Styrenic Pt(II) Complexes and their Polymerization by ATRP**  
D.M. Mayder, K.A. Thompson, C.J. Christopherson, N.R. Paisley and [Z.M. Hudson](#)  
*Polym. Chem.* **2018**, *9*, 5418 - 5425.
43. **Synthesis of Phosphorescent Iridium-Containing Acrylic Monomers and their Room-Temperature Polymerization by Cu(0)-RDRP**  
C.J. Christopherson, Z.S. Hackett, E.R. Sauv , N.R. Paisley, C.M. Tonge, D.M. Mayder and [Z.M. Hudson](#)  
*J. Polym. Sci. A: Polym. Chem.* **2018**, *56*, 2539-2546.
42. **Synthesis of Polymeric Organic Semiconductors Using Semifluorinated Polymer Precursors**  
N.R. Paisley, C.M. Tonge, E.R. Sauv , S.V. Halldorson and [Z.M. Hudson](#)  
*J. Polym. Sci. A: Polym. Chem.* **2018**, *56*, 2183-2191.
41. **Polymerization of Acrylates Based on n-Type Organic Semiconductors using Cu(0)-RDRP**  
C.M. Tonge, E.R. Sauv , N.R. Paisley, J. E. Heyes and [Z.M. Hudson](#)  
*Polym. Chem.* **2018**, *9*, 3359-3367.
40. **Cu(0)-RDRP of Acrylates based on p-Type Organic Semiconductors**  
E.R. Sauv , C.M. Tonge, N.R. Paisley, S. Cheng and [Z.M. Hudson](#)  
*Polym. Chem.* **2018**, *9*, 1397-1403.
39. **Ti-Catalyzed Hydroamination for the Synthesis of Amine-Containing  $\pi$ -Conjugated Materials**  
H. Hao, K.A. Thompson, [Z.M. Hudson](#) and L.L. Schafer  
*Chem. Eur. J.* **2018**, *24*, 5562-5568.

## **Prior to UBC**

## **2017**

38. **Highly Photoluminescent Nonconjugated Polymers for Single-Layer Light Emitting Diodes**

Z.A. Page, C.-Y. Chiu, B. Narupai, D.S. Laitar, S. Mukhopadhyay, A. Sokolov, Z.M. Hudson, R. Bou Zerdan, A.J. McGrath, J.W. Kramer, B.E. Barton and C. J. Hawker  
*ACS Photonics*, **2017**, *4*, 631-641.

## **2016**

37. **Chemoselective Radical Dehalogenation and C–C Bond Formation on Aryl Halide Substrates Using Organic Photoredox Catalysts**  
S.O. Poelma, G.L. Burnett, E.H. Discekici, K.M Mattson, N.J Treat, Y. Luo, Z.M. Hudson, S.L. Shankel, P.G. Clark, J.W. Kramer, C.J. Hawker and J. Read de Alaniz  
*J. Org. Chem.* **2016**, *81*, 7155-7160.

## **2015**

36. **Transformation and Patterning of Supramicelles using Dynamic Holographic Assembly**  
O.E.C. Gould, H. Qiu, D.J. Lunn, J. Rowden, R.L Harniman, Z.M. Hudson, M.A Winnik, M.J. Miles and I. Manners  
*Nature Commun.* **2015**, *6*, 10009.
35. **Multidimensional Hierarchical Self-Assembly of Amphiphilic Cylindrical Block Comicelles**  
H. Qiu, Z.M. Hudson, M.A. Winnik and I. Manners  
*Science*, **2015**, *347*, 1329-1332.
34. **A Highly Reducing Metal-Free Photoredox Catalyst: Design and Application in Radical Dehalogenations**  
E.H. Discekici, N.J. Treat, S.O. Poelma, K.M. Mattson, Z.M. Hudson, Y. Luo, C.J. Hawker, J. Read de Alaniz  
*Chem. Commun.* **2015**, *51*, 11705-11708.
33. **Fluorous Cylindrical Micelles of Controlled Length by Crystallization-Driven Self-Assembly of Block Copolymers in Fluorinated Media**  
Z.M. Hudson, J. Qian, C.E. Boott, M.A. Winnik and I. Manners  
*ACS Macro Lett.*, **2015**, *4*, 187-191.
32. **A Facile Synthesis of Catechol-Functionalized Poly(Ethylene Oxide) Block and Random Copolymers** K.M Mattson, A.A. Latimer, A.J. McGrath, N.A. Lynd, P. Lundberg, Z.M. Hudson and C.J. Hawker  
*J. Polym. Sci. A: Polym. Chem.* **2015**, *53*, 2685-2692.
31. **Triarylboron-Functionalized Metal Complexes for OLEDs**  
Z.M. Hudson, X. Wang and S. Wang  
Chapter 8 in "Organometallics and Related Molecules for Energy Conversion." Wong, W.-Y., Ed. Springer-Verlag: Heidelberg, **2015**, pp 207-239.

## **2014**

30. **Gradient Crystallization-Driven Self-Assembly: Cylindrical Micelles with "Patchy" Coronal Nanosegregation via the Coassembly of Linear and Brush Block Copolymers**  
J.R. Finnegan, D.J. Lunn, O.E.C. Gould, Z.M. Hudson G.R. Whittell, M.A. Winnik and I. Manners  
*J. Am. Chem. Soc.* **2014**, *136*, 13835-13844.
29. **Tailored Hierarchical Micelle Architectures using Living Crystallization-Driven Self-Assembly in Two Dimensions**  
Z.M. Hudson, C.E. Boott, M.E. Robinson, P.A. Rugar, M.A. Winnik and I. Manners  
*Nature Chem.* **2014**, *6*, 893-898.  
\* Highlighted in *Nature Chem*: "Self-Assembly: Served on a Nanoplate," C. Cai and J. Lin, **2014**, *6*, 857.
28. **Colour-Tunable Fluorescent Multiblock Micelles**  
Z.M. Hudson, D.J. Lunn, M.A. Winnik and I. Manners  
*Nature Commun.*, **2014**, *5*:3372.  
\* Highlighted in *Chemical and Engineering News*: L.K. Wolf, "Nanopixels of Any Color," **2014**, *92*, 30.
27. **Assembly and Disassembly of Ferrocene-Based Nanotubes**  
Z.M. Hudson and I. Manners  
*Science* **2014**, *422*, 482-483. (Invited Perspective)

26. **Uniform, High Aspect Ratio Fiber-like Micelles and Block Co-Micelles with a Crystalline  $\pi$ -Conjugated Polythiophene Core by Self-Seeding**  
J. Qian, X. Li, D.J. Lunn, J. Gwyther, Z.M. Hudson, E. Kynaston, P.A. Rupar, M.A. Winnik and I. Manners  
*J. Am. Chem. Soc.* **2014**, *136*, 4121-4124.
25. **Impact of Constitutional Isomerism on Phosphorescence and Anion-Sensing Properties of Donor-Acceptor Organoboron Pt (II) Complexes**  
M.-N. Belzile, X. Wang, Z.M. Hudson and S. Wang  
*Dalton Trans.* **2014**, *43*, 13696-13703.

## **2012**

24. **Modulating the Photoisomerization of N,C-Chelate Organoboranes with Triplet Acceptors**  
Z.M. Hudson, S.-B. Ko, S. Yamaguchi and S. Wang  
*Org. Lett.* **2012**, *14*, 5610-5613.
23. **Highly Efficient Blue Phosphorescence from Triarylboron-Functionalized Platinum(II) Complexes of N-Heterocyclic Carbenes**  
Z.M. Hudson, C. Sun, M.G. Helander, Y.-L. Chang, Z.-H. Lu and S. Wang  
*J. Am. Chem. Soc.* **2012**, *134*, 13930-13933.
22. **N-Heterocyclic Carbazole-Based Hosts for Simplified Single-Layer Phosphorescent OLEDs with High Efficiency**  
Z.M. Hudson, Z.-B. Wang, M.G. Helander, Z.-H. Lu and S. Wang  
*Adv. Mater.* **2012**, *24*, 2922-2928.
21. **Organoboron and Diarylplatinum-Enabled Double Cyclization/Aryl Migration across an Alkyne Bond**  
C. Sun, Z.M. Hudson, L. D. Chen and S. Wang  
*Angew. Chem. Int. Ed.* **2012**, *51*, 5671-5674.
20. **Efficient and High Yield One-Pot Synthesis of Cyclometalated Platinum(II)  $\beta$ -Diketonates at Ambient Temperature**  
Z.M. Hudson, B.A. Blight and S. Wang  
*Org. Lett.* **2012**, *14*, 1700-1703.

## **2011**

19. **Unlocking the Full Potential of Organic Light-Emitting Diodes on Flexible Plastic**  
Z.-B. Wang, M.G. Helander, D.P. Puzzo, Z.M. Hudson, S. Wang and Z.-H. Lu  
*Nature Photonics* **2011**, *5*, 737-757.
18. **A Polyboryl-Functionalized Triazine as an Electron-Transport Material for OLEDs**  
C. Sun, Z.M. Hudson, M.G. Helander Z.-H. Lu and S. Wang  
*Organometallics* **2011**, *30*, 5552-5555.
17. **Nonconjugated Dimesitylboryl-Functionalized Phenylpyridines and Their Cyclometalated Platinum(II) Complexes**  
Z.M. Hudson and S. Wang  
*Organometallics* **2011**, *30*, 4695-4701.
16. **Pt(II) Complex Based Phosphorescent Organic Light Emitting Diodes with External Quantum Efficiencies Above 20%**  
Z.-B. Wang, M.G. Helander, Z.M. Hudson, J. Qiu, S. Wang and Z.-H. Lu  
*Appl. Phys. Lett* **2011**, *98*, 213301.
15. **Metal-Containing Triarylboranes: Photophysical Properties and Applications**  
Z.M. Hudson and S. Wang  
*Dalton Trans.* **2011**, *40*, 7805-7816.



14. **Probing the Structural Origins of Vapochromism of a Triarylboron-Functionalized Pt(II) Acetylide by Optical and Multinuclear Solid-State NMR Spectroscopy**  
Z.M. Hudson, C. Sun, K.J. Harris, B.E.G. Lucier, R.W. Schurko and S. Wang  
*Inorg. Chem.* **2011**, *50*, 3447-3457.
13. **Tuning and Switching MLCT Phosphorescence of [Ru(bpy)<sub>3</sub>]<sup>2+</sup> Complexes with Triarylboranes and Anions**  
Y. Sun, Z.M. Hudson, Y.-L. Rao and S. Wang  
*Inorg. Chem.* **2011**, *50*, 3373-3378.
12. **Triarylboron-functionalized 8-Hydroxyquinolines and their Aluminum(III) Complexes**  
V. Zlojutro, Y. Sun, Z.M. Hudson and S. Wang  
*Chem. Commun.* **2011**, 3837-3839.
11. **Switchable Three-State Fluorescence of a Nonconjugated Donor-Acceptor Triarylborane**  
Z.M. Hudson, X.-Y. Liu and S. Wang  
*Org. Lett.* **2011**, *13*, 300-303.
10. **Highly Efficient Orange Electrophosphorescence from a Trifunctional Organoboron-Pt(II) Complex**  
Z.M. Hudson, M.G. Helander, Z.-H. Lu and S. Wang  
*Chem. Commun.* **2011**, *47*, 755-757.

## **2010**

9. **Reactivity of Aryldimesitylboranes under Suzuki-Miyaura Coupling Conditions**  
N. Wang, Z.M. Hudson and S. Wang  
*Organometallics*, **2010**, *29*, 4007-4011.
8. **Enhancing Phosphorescence and Electrophosphorescence Efficiency of Cyclometalated Pt(II) Compounds with Triarylboron**  
Z.M. Hudson, C. Sun, M.G. Helander, H. Amarne, Z.-H. Lu and S. Wang  
*Adv. Funct. Mater.*, **2010**, *20*, 3426-3439.
7. **Linear and Star-Shaped Benzimidazolyl Derivatives: Syntheses, Photophysical Properties and Use as Highly Efficient Electron Transport Materials in OLEDs**  
W. White, Z.M. Hudson, X. Feng, S. Han, Z.-H. Lu and S. Wang  
*Dalton Trans.*, **2010**, *39*, 892-899.

## **2009**

6. **Enhancing the Photochemical Stability of *N,C*-Chelate Boryl Compounds: C-C Bond Formation versus C=C Bond *cis, trans*-Isomerization**  
C. Baik, Z.M. Hudson, H. Amarne and S. Wang  
*J. Am. Chem. Soc.*, **2009**, *131*, 14549-14559.
5. **The Structure of an Anionic Coordination Polymer {K<sub>2</sub>[Pt<sup>II</sup><sub>2</sub> Ag<sup>I</sup><sub>8</sub>(2,2'-bipy)<sub>2</sub>(O<sub>2</sub>CCF<sub>3</sub>)<sub>14</sub>]<sub>n</sub>}**  
Z.M. Hudson, Y. Sun, B. Ross, R.Y. Wang and S. Wang.  
*Acta Cryst. C*, **2009**, *65*, m328-m330.
4. **Impact of Donor-Acceptor Geometry and Metal Chelation on Photophysical Properties and Applications of Triarylboranes**  
Z.M. Hudson and S. Wang  
*Acc. Chem. Res.*, **2009**, *42*, 1584-1596.
3. **Switchable Ambient-Temperature Singlet-Triplet Dual Emission in Triarylboron-Pt(II) Complexes**  
Z.M. Hudson, S.-B. Zhao and S. Wang  
*Chem. Eur. J.*, **2009**, *15*, 6131-6137.

## **2008**

2. **Impact of the Linker on the Electronic and Luminescent Properties of Diboryl Compounds: Molecules with Two BMe<sub>2</sub> Groups and The Peculiar Behavior of 1,6-(BMe<sub>2</sub>)<sub>2</sub>pyrene**

S.-B. Zhao, P. Wücher, Z.M. Hudson, T.M. McCormick, X.-Y. Liu, S. Wang, X.-D. Feng and Z.-H. Lu  
*Organometallics*, **2008**, *27*, 6446–6456.

1. **The Influence of Alkoxy Chain Length on the Ferroelectric Properties of Chiral Fluorene Liquid Crystals**  
J.C. Roberts, Z.M. Hudson and R.P. Lemieux  
*J. Mater. Chem.*, **2008**, *18*, 3361–3365.

## Patents

6. **Article Comprising Multiple Material Layers with Reduced Thickness**  
D.J. Footz, Z.M. Hudson, K.K.P. Kerman  
U.S. Provisional Patent Application No. 63/190,652, filed May 19, 2021
5. **Beverage Cartridge Comprising at Least Two Sealed Chambers**  
D.J. Footz, K.K.P. Kerman and Z.M. Hudson  
U.S. Provisional Patent Application No. 63/022,163, filed May 18, 2020.
4. **A Method of Manufacturing of a Compostable Packaging Article Comprising at Least Two Compostable Materials**  
D.J. Footz and Z.M. Hudson  
U.S. Provisional Patent Application No. 63/026,576, filed May 18, 2020.
3. **Host Materials for Single-Layer Phosphorescent OLEDs**  
Z.M. Hudson, S. Wang, M.G. Helander, Z.-B. Wang and Z.H. Lu.  
U.S. Patent Application No. 61/819,231 and Canadian Patent Application No. 2,814,679. Filed May 3, 2013.
2. **Luminescent Compounds and Methods of Using Same**  
Z.M. Hudson, X. Wang and S. Wang.  
U.S. Patent Application No. 61/780,123 and Canadian Patent Application No. 2,809,478, filed March 13, 2013.  
PCT International Application No. 2012-025-03PCT, filed March 13, 2014.
1. **Methods of Making Luminescent Compounds**  
Z.M. Hudson and S. Wang.  
U.S. Patent Application No. 61/780,156 and Canadian Patent Application No. 2,809,518, filed March 13, 2013.

## Invited Lectures

\* = Rescheduled due to COVID-19

### Award Lectures:

1. \*Interface-Dependent Aggregation-Induced Delayed Fluorescence in Bottlebrush Polymer Nanofibers.  
103<sup>rd</sup> Canadian Chemistry Conference and Exhibition, Winnipeg, Manitoba, Canada (May 2020)  
CSC Emerging Materials Investigator Lecture
2. Multiblock Nanofibers from Organic Electronic Materials  
ACS National Meeting, San Francisco, California, USA (Aug. 2020 – Virtual Lecture)  
ACS PMSE Early Investigator Lecture
3. \*Multiblock Nanofibers from Organic Electronic Materials  
IUPAC-MACRO2020 – the 48<sup>th</sup> World Polymer Congress, Jeju, Republic of Korea (Jun. 2020)  
CNC-IUPAC Travel Award Lecture

### Invited Lectures at Conferences:

1. “Nanosegregation of Luminescence in Hierarchically Assembled Soft Materials.” The Optical Society Advanced Photonics Meeting, Vancouver, British Columbia, Canada (Jun. 2016).
2. “Multiblock Bottlebrush Nanofibers from Organic Electronic Materials.” 102<sup>nd</sup> Canadian Chemistry Conference and Exhibition, Québec City, Québec, Canada (May 2019).
3. \*\*\*“Thermally Activated Delayed Fluorescence Materials as Ratiometric Luminescent Sensors.” 103<sup>rd</sup> Canadian Chemistry Conference and Exhibition, Winnipeg, Manitoba, Canada (May 2020).

4. \*"Multiblock Nanofibers from Organic Electronic Materials." 103<sup>rd</sup> Canadian Chemistry Conference and Exhibition, Winnipeg, Manitoba, Canada (May 2020).
5. \*"Multiblock Bottlebrush Nanofibers from Organic Electronic Materials." ACS Northwest Regional Meeting, Bellingham, Washington, USA (Jun. 2020).
6. "Interface-Dependent Aggregation-Induced Delayed Fluorescence in Bottlebrush Polymer Nanofibers." AIE20, Guangzhou, China (July 2021).
7. "Organization of Chromophores into Multiblock Bottlebrush Nanofibers Allows for Regulation of Energy Transfer Processes." 104<sup>th</sup> Canadian Chemistry Conference and Exhibition, Virtual Meeting (August 2021).
8. "Beyond OLEDs: Emerging Applications of Thermally Activated Delayed Fluorescence." 104<sup>th</sup> Canadian Chemistry Conference and Exhibition, Virtual Meeting (August 2021).
9. "Multiblock Nanofibers from Organic Electronic Materials." The International Chemical Congress of Pacific Basin Societies. Honolulu, USA (December 2021)
10. "Energy Transfer Processes in Multiblock Bottlebrush Nanofibers from Organic Semiconductors." The International Chemical Congress of Pacific Basin Societies. Honolulu, USA (December 2021)

#### **Invited Lectures at Universities:**

1. Nanosegregation of Luminescence in Hierarchically Assembled Soft Materials  
Tsinghua University, Beijing, PR China (May 2017)
2. Nanosegregation of Luminescence in Hierarchically Assembled Soft Materials  
Peking University, Beijing, PR China (May 2017)
3. Simple Approaches to Complex Polymers for Optoelectronics: from Nanomaterials to Devices  
Université de Montréal, Québec, Canada (Feb. 2019)
4. Simple Approaches to Complex Polymers for Optoelectronics: from Nanomaterials to Devices  
Université du Québec à Montréal, Québec, Canada (Feb. 2019)
5. Multiblock Bottlebrush Nanofibers from Organic Electronic Materials  
Beijing University of Chemical Technology, Beijing, PR China (Jun. 2019).
6. Multiblock Bottlebrush Nanofibers from Organic Electronic Materials  
Beijing Institute of Technology, Beijing, PR China (Jun. 2019)
7. Multiblock Bottlebrush Nanofibers from Organic Electronic Materials  
Tsinghua University, Beijing, PR China (Jun. 2019)
8. Multiblock Bottlebrush Nanofibers from Organic Electronic Materials  
McMaster University, Hamilton, Ontario, Canada (Nov. 2019)
9. Multiblock Bottlebrush Nanofibers from Organic Electronic Materials  
University of Waterloo, Waterloo, Ontario, Canada (Nov. 2019)
10. Multiblock Bottlebrush Nanofibers from Organic Electronic Materials  
University of Ottawa, Ottawa, Ontario, Canada (Feb. 2020)
11. Multiblock Bottlebrush Nanofibers from Organic Electronic Materials  
Carleton University, Ottawa, Ontario, Canada (Feb. 2020)
12. Conjugated polymers for Optoelectronics (CHM 2128 Guest Lecture)  
University of Ottawa, Ontario, Canada (Feb. 2020)

13. Multiblock Bottlebrush Nanofibers from Organic Electronic Materials  
Queen's University, Kingston, Ontario, Canada (Feb. 2020)
14. Multiblock Bottlebrush Nanofibers from Organic Electronic Materials  
Simon Fraser University, Burnaby, British Columbia, Canada (Feb. 2020)
15. \*Multiblock Bottlebrush Nanofibers from Organic Electronic Materials  
Western University, London, Ontario, Canada (Mar. 2020)
16. \*Multiblock Bottlebrush Nanofibers from Organic Electronic Materials  
York University, Toronto, Ontario, Canada (Apr. 2020)
17. Beyond OLEDs: Emerging Applications of Thermally Activated Delayed Fluorescence  
University of Toronto, Toronto, Ontario, Canada (May 2020 – Virtual Lecture)
18. "Beyond OLEDs: Emerging Applications of Thermally Activated Delayed Fluorescence." McGill University,  
Montreal, Quebec, Canada (Rescheduled to Dec 2020 as Virtual Lecture)

#### **Selected Media Coverage:**

**Chemistry can change the world. One UBC prof is inspiring students to make it happen.** *The Ubyyssey*, 8 Dec 2020. [Link](#)

**CTK Bio Canada develops bioplastic resin designed to break down in soil and seawater.** *The Scientist*, 19 Feb 2021. [Link](#)

**CTK Bio Canada develops bioplastic resins designed to decompose in soil and seawater.** *Jioforme*, 19 Feb 2021. [Link](#)

**UBC chemist helps create new compostable coffee pod.** *UBC News*, 22 Feb 2021. [Link](#)

**UBC scientist invents improved compostable coffee pod.** *Global BC*, 22 Feb 2021. [Link](#). Also featured on Global News 6PM PST.

**New coffee pods promise a great cup without the plastic waste.** *CTV News* 22 Feb 2021. [Link](#). Also featured on CTV News 6PM PST.

**Bamboo the secret ingredient in sustainable coffee pods.** *BeanPoet*, 22 Feb 2021. [Link](#)

**Why ALL non-stick pans will wear out: I spoke with a Polymer Chemist.** *Cook Culture (Youtube)*, 22 Feb 2021. [Link](#)

**UBC researcher develops a better compostable coffee pod.** *Vancouver Sun & The Province*, 23 Feb 2021. [Link](#)

**Helping reduce plastic pollution with just a cup of coffee.** *News 1130, 660 News Calgary, City News Winnipeg & CityNews Montreal*, 23 Feb 2021. [Link](#)

**UBC scientist develops new compostable coffee pod that aims to keep java fresher.** *MSN & CFOX*, 23 Feb 2021. [Link](#)

**A new way to make coffee, keeping clothes out of the landfill & VSB gets a raise behind closed doors.** *Omny FM* 24 Feb 2021. [Link](#)

**Scientist at University of British Columbia helps create a new fully compostable coffee pod.** *Communicaffe*, Feb 24, 2021. [Link](#)

**Du café à saveur écologique en capsules compostables.** *CBC Radio-Canada*, 25 Feb 2021. [Link](#)

**British Columbia scientists use new bioplastic to make fully compostable coffee pod.** Canadian Plastics, 1 Mar 2021. [Link](#)

**All taste, no waste in your morning cup.** *Research2Reality*, 16 Mar 2021. [Link](#)

**Inside NEXE's compostable plant-based coffee pod.** *Waste 360*, 25 Mar 2021. [Link](#)

**UBC chemist helps create new compostable coffee pod.** *NSERC*, Mar 2021. [Link](#)

**North x Northwest with Sheryl MacKay.** *CBC*, 21 Mar 2021. [Link](#)

**Western Canadian startups for social good.** *New Business Review*, May 2021. [Link](#)