

## CURRICULUM VITAE

### GENEVIEVE SAUVE

August, 2019

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Department of Chemistry  
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### Education

1990-1994 Concordia University, Montreal, Canada  
B.S. Chemistry (Honors)

1994-1999 California Institute of Technology, Pasadena, CA  
Ph.D. Chemistry  
Thesis: "Dye Sensitization of Nanocrystalline Titanium Dioxide"  
Advisor: Professor Nathan S. Lewis

2002-2008 Carnegie Mellon University  
Postdoctoral Fellow and Research Associate, Conducting Polymers  
Advisor: Professor Richard D. McCullough

### Professional Appointments

7/15-present Associate Professor of Chemistry  
*Department of Chemistry, Case Western Reserve University, Cleveland, OH*

7/14-6/15 Frank Hovorka Assistant Professor of Chemistry  
*Department of Chemistry, Case Western Reserve University, Cleveland, OH*

7/09-6/14 Assistant Professor of Chemistry  
*Department of Chemistry, Case Western Reserve University, Cleveland, OH*

2008-2009 Visiting Scientist  
*Helmholtz-Centre Berlin for Materials and Energy, Berlin, Germany*

2008-2009 Visiting Assistant Professor  
*Department of Chemistry, Case Western Reserve University, Cleveland, OH*

2005-2008 Research Associate with Professor Richard D. McCullough  
*Department of Chemistry, Carnegie Mellon University, Pittsburgh, PA*

2002-2005 Postdoctoral Fellow with Professor Richard D. McCullough

*Department of Chemistry, Carnegie Mellon University, Pittsburgh, PA*

1999-2000 Senior Development Chemist  
*PPG Industries, Pittsburgh, PA*

### **Membership in Professional Societies**

American Chemical Society since 1994

### **Professional Honors and Awards**

1. Nominated for the 2018 Carl F. Wittke Award for Excellence in Undergraduate Teaching, Case Western Reserve University.
2. Active Learning Mentor, Spring of 2016, Information Technology Services, Case Western Reserve University.  
*Awarded to mentor new Active Learning Fellows*
3. Active Learning Fellowship, Class of 2014-2015, Information Technology Services, Case Western Reserve University.  
*Awarded for dedication to education and to redesign a course using active learning methodologies.*
4. Professional Mentor of the Year 2014 and 2017, Women in Science and Engineering Roundtable (WISER), Case Western Reserve University.
5. Glennan Fellowship, UCITE, Case Western Reserve University, 07/01/2011-06/30/2012.  
*Awarded to develop inquiry-based laboratories for a new course entitled "Solar Energy Conversion", and to integrate solar energy conversion undergraduate laboratory courses.*
4. Mentor Fellowship, UCITE, Case Western Reserve University, 07/01/2011-06/30/2012.  
*Awarded for improving graduate student mentoring.*
5. Max Planck Institute of Colloids and Interfaces Fellowship, 2008.
6. Masters and Doctoral Research Scholarships, FCAR (Le Fond Québécois de la Recherche sur la Nature et les Technologies), 1994-1999  
*Scholarship with full tuition awarded to best candidates in continuing graduate work in natural science, mathematics or engineering research.*
6. Chemistry Award, Celanese Canada LTD, 1994.  
*Awarded to outstanding students in the chemistry department (one of two).*
7. Merit Award, Society of Chemical Industry, Canadian section, 1994.  
*Award in recognition of outstanding academic achievement*
8. Canada Scholarship, 1990-1993.  
*Awarded in recognition of sustained academic excellence in science, engineering and technology. Competed nationally.*
9. Entrance Scholarship, Concordia University, 1990-1993.  
*Awarded to the best incoming undergraduate student in chemistry*

### **Professional Service**

*Grant Reviewing:* National Science Foundation (NSF); National Sciences and Engineering Research Council of Canada (NSERC); Office of Basic Energy Sciences (DOE); ACS Petroleum Research Fund; Research Grants Council (RGC) of Hong Kong; King Abdullah University of Science and Technology (KAUST) Office of Sponsored Research.

*Journal Reviewing:* ACS Applied Materials and Interfaces; ACS Energy Letters; ACS Macro Letters; Advanced Materials; Advances; Chemical Communication; Chemical Science; Chemistry – A European Journal; Chemistry of Materials; Dalton Transactions; European Journal of Organic Chemistry; Inorganic Chemistry; Journal of Applied Polymer Science; Journal of Molecular Structure; Journal of Polymer Science Part B: Polymer Physics; Journal of the Electrochemical Society; JoVE; Langmuir; Macromolecules; Materials; Nanoscale; Optical Materials; Organic Electronics; Organic Letters; Organometallics; Progress in Polymer Science; Polymer Chemistry; RSC Advances; The Chemical Record; The Journal of Materials Chemistry A; The Journal of Materials Chemistry C; The Journal of Organic Chemistry; The Journal of Physical Chemistry Letters.

*Professional Societies and Others:*

- Chair-elect, Cleveland Section of the American Chemical Society, 2019.
- Scientific Advisory Committee Member, Natural Sciences and Engineering Research Council of Canada (NSERC) Green Electronics Network, 2018-present.
- Editor for Isotopics, the monthly newsletter for Cleveland ACS, 2016- present
- Participated in the Cleveland ACS Strategic Plan Retreat, Oct. 2015. Named communication plan officer.
- Director, Cleveland Section of the American Chemical Society, 2012-2018.

*Community Service and Outreach:*

- Presented at Sigma XI's Science Café Cleveland and was guest at 'The Sound of Ideas' show on National Public Radio, April 11 2016.
- Coordinator for ACS Special Awards, 2015 - 2018, and Judge for ACS Special Awards, 2013-2014, North East Ohio Science and Engineering Fair (NEOSEF), Cleveland, OH :
- Judge for Meeting in Miniature (MIM), Cleveland, OH, Judge, March 2014, 2016 and 2018.
- Guest speaker at Lota Sigma Pi initiation meeting, Cleveland, OH, April 24, 2014. Presentation: "My Career Path"
- Professional mentor, Woman in Science and Engineering Roundtable (WISER), Case Western Reserve University, Cleveland, OH, 2010-2017.
- Gave a seminar to third graders as part of their "Meet the expert", Fernway Elementary School, Shaker Heights, OH, May 2013 and May 2014

*Symposium Organizer/Co-Organizer*

Process Chemistry & Development, 50<sup>th</sup> ACS Central Regional Meeting 2019, Midland MI, June 4-5, 2019, Co-Organizer.

*Symposium Session Chairs/Presiders:*

Process Chemistry & Development, Development of Advanced Materials for Industrial Solutions, 50<sup>th</sup> ACS Central Regional Meeting 2019, Midland, MI, June 4, 2019, Morning session.

256<sup>th</sup> ACS National Meeting and Exposition, Boston, MA, INORG: Chemistry of Materials: Materials for Energy & Catalytic Applications, August 19, 2018 Morning Session; PMSE: Synthesis, Processing & Device Engineering of Polymeric Electronic Materials, August 21, 2018, Morning Session.

254<sup>th</sup> ACS National Meeting and Exposition, POLY: Non-conventional Building Blocks in Conjugated Materials: Innovative Designs & New Applications, Washington, D.C., August 22, 2017, Afternoon Session.

252<sup>nd</sup> ACS National Meeting and Exposition, INORG: Chemistry of Materials: Materials for Energy & Catalytic Applications”, Philadelphia, PA, August 21, 2016, Morning Session; ORGN: Materials, Devices & Switches, Philadelphia, PA, August 24, 2016, Morning Session.

252<sup>nd</sup> ACS National Meeting and Exposition, 12<sup>th</sup> International Symposium on Functional  $\pi$ -Electron Systems (Fpi12), Materials, Seattle, USA, June 23rd, 2015, Afternoon Session.

11th International Symposium of Functional  $\pi$ -Electron Systems (Fpi11), Materials, Arcachon, France, June 4th, 2013, Afternoon Session.

**Service on Institutional Committees**

- Chair, Graduate Admissions Committee, Chemistry, CWRU, 2016-present.
- Member, Thought leader, Committee for Howard Hughes Medical Institute (HHMI) Inclusive Excellence Funding Competition 2019-2020.
- Member, Dean Review Committee, College of Arts and Science Faculty Senate, CWRU, 2016.
- Member, Graduate Affairs Committee, Chemistry, CWRU, 2015-present.
- Member, Faculty Compensation Committee, Faculty Senate, CWRU, 2014-2018.
- Member, Graduate Admissions Committee, Chemistry, CWRU, 2009-2016.
- Member, Chairman Search Committee, Mechanical & Aerospace Eng., CWRU, 2013-2014.
- Member, Faculty Search Committee, Chemistry, CWRU, 2012-2013.
- Member, Resource Committee, Chemistry, CWRU, 2010-2015.
- Member, Energy and Materials Faculty Search Committee, Chemistry, CWRU, 2009-2010.
- Member, Chemistry Executive Committee, CWRU, 2009-2010; 2012-2013.
- Co-founder of the Materials for Opto/electronic Research and Education (MORE) center, CWRU, a multi-user facility, 2009-2011.

**Teaching Activities**

Fall 2019	CHEM 447: Modern Topics in Physical Chemistry, co-taught (teach 2 weeks)
Fall 2009-19	CHEM 335: Physical Chemistry I
Spring 2010	CHEM 504: Special topics in organic chemistry – Solar Energy Conversion

Spring 2012-16 CHEM 340/440: Solar Energy Conversion  
Summer 2015 Invited lecture, “Organic Photovoltaics” for the Organic Electronics Summer School held at CWRU and Kent U., July 27-28, 2015.  
Spring 2018 CHEM 340/440: Solar Energy Conversion  
Summer 2018 Invited lecture, “Organic Photovoltaics” for the Organic Electronics Summer School held at CWRU and Kent U., June 6-7, 2018.  
Spring 2019 CHEM 336: Physical Chemistry II

### **Research Support**

National Science Foundation, Chemistry Division, “Azadipyromethene Complexes as a Versatile Platform for Next Generation of Solution-Processable Organic/Inorganic Hybrid Semiconductors” July 2019 – June 2022, \$500,000, Role: PI – 100%

### **PhD. Graduate Students**

1. Fernando, Juwanmandadige Roshan (12/2009-8/2014)
2. Mao, Zhenghao (12/2009-5/2014)
3. Senevirathna, Wasana (12/2010-8/2014)
4. Daddario, Cassie (12/2010-08/2015)
5. Forrest Etheridge (12/2011-05/2016)
6. Sandra Pejic (12/2013-05/2018)
7. Chunlai Wang (12/2015-08/30/2019)
8. Jayvic C. Jimerez (12/2016-present)
9. Muyan Zhao (12/2017-present)
10. Quynh Tran (5/2019-present)

### **Master Students**

Fei Ruan (5/2012-12/2012), Jie Li (7/2012-6/2013), Qi Han (5/2013-5/2014), Jia-yu Liao (6/2013-2014), Jun Gu (6/2013-6/2014), Chunlai Wang (1/2014-12/2015), Mya Porche (12/2015-5/2018)

### **Undergraduate Students**

Cassie Daddario (8/2009-5/2010), Quinn M. Gleisner (5/2010-8/2010), Joshua Young (9/2010-6/2011), Margeret Oti (9/2010-6/2011), Xin Hao (01/2011-05/2012), Grace Eder (09/2011-5/2013), Evan Muller (1/2012-5/2013), Matthew Porter (9/2013-5/2014), Brendan Graziano (REU student, summer 2015), Carson Britt (9/2014-5/2018), Justin Smith (SURP student, summer 2016), AnnaThomsen (09/2016-05/2018), Madeline V. Strnad (1/2017-12/2017), Daphney Bonner (REU student, summer 2017), Charlie Lu (01/2019-present), Adam Wade (summer 2019)

**Postdoctoral Fellows:** Dr. Juwanmandadige Roshan Fernando (9/2014-6/2015), Dr. Lei Gao (7/2010-6/2012)

**High School Students :** Hilary Vogelbaum (summer 2014 and 2015), Alison Kennedy (Mentor, summer 2015), Yondez Webb (SEED student, summer 2016 and 2017), John Victor Pan (summer 2017), Jing-Jing Shen (summer 2018, Spring 2019), Manal Faleh (SEED student, summer 2018, summer 2019).

**Peer Reviewed Publications - Independent contributions at CWRU (underlined are UG):**

1. Fernando, R.; Pejić, S.; Thomsen, A. M.; Wang, C.; Sauvé, G. “Azadipyrrromethene-based near-IR dyes with styryl substituents at the pyrrolic positions for organic photovoltaic applications” *Dyes Pigm.*, **2019**, 168, 257-263.
2. Sauvé, G. “Designing alternative non-fullerene molecular electron acceptors for solution-processable organic photovoltaics” *Chem. Rec.* (Special Edition: New Directions in Organic Solar Cells), **2019**, 19, 1-16.
3. Wang, C.; Zhang, Z.; Pejić, S.; Li, R.; Fukuto, M.; Zhu, L.; Sauvé, G. “High dielectric constant semiconducting poly(3-alkylthiophene)s from side chain modification with polar sulfinyl and sulfonyl groups” *Macromolecule*, **2018**, 51, 9368-9381.
4. Dai, Y.; Wang, C.; Chiu, L.-Y.; Abbasi, K.; Tolbert, B.; Sauvé, G.; Yen, Y.; Liu, C.C. “Application of bioconjugation chemistry on biosensor fabrication for detection of TAR-DNA binding protein 43” *Biosens. Bioelectron.* **2018**, 117, 60-67.
5. DiScipio, R.; Sauvé, G.; Crespo-Hernandez, C. E. “Photodynamics in metal-chelating tetraphenylazadipyrrromethene complexes: Implications for their potential use as photovoltaic materials” *J. Phys. Chem. C* **2018**, 122, 13579-13589.
6. Pejić, S.; Thomsen, A. M.; Etheridge, F. S.; Fernando, R.; Wang, C.; Sauvé, G. “Fluorination increases the electron mobility of zinc azadipyrrromethene-based electron acceptors and enhances the performance of fullerene-free organic solar cells” *J. Mater. Chem. C* **2018**, 6, 3990-3998.
7. Saini, A.; Etheridge, F. S.; Peters, K. C.; Pejić, S.; Gao, L.; Hellring, S. D.; Schuele, D. E.; Sauvé, G.; Singer, K. D. “Aqueous deposition of a semiconducting polymer by electrocoating” *Org. Electron.* **2018**, 53, 332-338.
8. Zhao, Z.; Zhang, Z.; Pejić, S.; Zhang, G.; Zhu, Y.; Liu, H.\*; Litt, M.; **Sauve, G.\***; Zhu, L.\* “Synergistic dielectric and semiconducting properties in fluorescein monopotassium salt random copolymers” *Polymer* **2017**, 114, 189-198.
9. Vogelbaum, H. S.; **Sauvé, G.\*** “Recently developed high-efficiency organic photoactive materials for printable photovoltaic cells: a mini review” *Synth. Met.* **2017**, 223, 107-121.
10. Smith, Z. C.; Wright, Z. M.; Arnold, A. M.; **Sauvé, G.**; McCullough, R. D.; Sydlik, S. A.\* “Increased Toughness and Excellent Electronic Properties in Regioregular Random Copolymers of 3-Alkylthiophenes and Thiophene” *Adv. Electron. Mater.* **2016**, 3, 1600316.
11. Etheridge, F. S.; Fernando, R. J.; Pejić, S.; Zeller, M.; **Sauvé, G.\*** “Synthesis and Characterization of Fluorinated Azadipyrrromethene Complexes as Acceptors for Organic Photovoltaics” *Beilstein J. Org. Chem.* **2016**, 12, 1925-1938
12. **Sauvé, G.\***, Fernando, R. “Beyond Fullerenes: Designing alternative molecular electron acceptors for solution-processable bulk heterojunction organic photovoltaics”, *J. Phys. Chem. Lett.* **2015**, 6, 3770-3780.
13. Daddario, C. M.; Han, Q.; Zeller, M.; **Sauvé, G.\*** “Azadipyrrromethene-based near-infrared dyes: Effect of thienylethynyl substitution at the distal and proximal phenyls”, *Eur. J. Inorg. Chem.* **2015**, 22, 3649-3657.

14. Etheridge, F. S.; Fernando, R.; Golen, J. A.; Rheingold, A. L.; **Sauvé, G.\*** “Tuning optoelectronic properties of core-substituted naphthalene diimides by the selective conversion of imides to monothioimides”, *RSC Adv.* **2015**, 5, 46534-46539.
15. Fernando, R.; Etheridge, F.; Muller, E.; **Sauvé, G.\*** “Tuning the optical and electrochemical properties of core-substituted naphthalenediimides with styryl imide substituent”, *New J. Chem.* **2015**, 39, 2506-2514.
16. Senevirathna, W.; Liao, J.-Y.; Gu, J.; Porter, M.; Wang, C.; Fernando, R.; **Sauvé, G.\*** “Synthesis, characterization and photovoltaic properties of electron accepting azadipyrromethene-based dyes: effect of pyrrolic substituents”, *J. Mater. Chem. A.*, **2015**, 3, 4203-4214.
17. Mao, Z.; Le, T.; Vakhshouri, K.; Fernando, R.; Ruan, F.; Muller, E.; Gomez, E. D.; **Sauvé, G.\*** “Processing additive suppresses phase separation in the active layer of organic photovoltaics based on naphthalene diimide”, *Org. Electron*, **2014**, 15, 3384-3391.
18. Mao Z.; Senevirathna, W.; Liao, J.-Y.; Gu, J.; Vajjala Kesava, S.; Guo, C.; Gomez, E. D.; **Sauvé, G.\*** “Three-dimensional non-fullerene acceptors for high performance organic photovoltaics”, *Adv. Mater.*, **2014**, 26, 6290-6294.
19. Senevirathna, W.; Daddario, C. M.; **Sauvé, G.** “Density functional theory study predicts low reorganization energies for azadipyrromethene-based metal complexes”, *J. Phys. Chem. Lett.*, **2014**, 5, 935-941.
20. Fernando, R.; Mao, Z.; Muller, E.; Ruan, F.; **Sauvé, G.** “Tuning the organic solar cell performance of acceptor 2,6-dialkylaminonaphthalene diimides by varying a linker between the imide nitrogen and a thiophene group”, *J. Phys. Chem. C.*, **2014**, 118, 3433-3442.
21. Senevirathna, W.; **Sauvé, G.** "Introducing 3D conjugated acceptors with intense red absorption: homoleptic metal (II) complexes of di(phenylacetylene) azadipyrromethene", *J. Mater. Chem. C*, **2013**, 1, 6684-6694.
22. Fernando, R.; Mao, Z.; **Sauvé, G.** "Rod-like oligomers incorporating 2,6-dialkylamino core-substituted naphthalene diimide as acceptors for organic photovoltaic" *Org. Electron.*, **2013**, 14, 1683-1692.
23. Mao, Z.; Vakhshouri, K.; Jaye, C.; Fischer, D. A.; Fernando, R.; DeLongchamp, D. M.; Gomez, E. D.; **Sauvé, G.** “Synthesis of perfluoroalkyl end-functionalized poly(3-hexylthiophene) and the effect of fluorinated end-groups on solar cell performance” *Macromolecules*, **2013**, 46, 103-112.
24. Gao, L.; Tang, S.; Zhu, L.; **Sauvé, G.** “Synthesis and characterization of azadipyrromethene-*alt*-*p*-phenylene ethynylene conjugated polymers and their chelates” *Macromolecules* **2012**, 45, 7404-7412.
25. Gao, L.; Senevirathna, W.; **Sauvé, G.** “Azadipyrromethene-based conjugated oligomers with near-IR absorption and high electron affinity” *Org. Lett.* **2011**, 13, 5354-5357.

#### Peer Reviewed Publications prior to CWRU :

26. **Sauvé, G.**; Javier, A. E.; Zhang, R.; Liu, J.; Sydlik, S. A.; Kowalewski, T.; McCullough, R. D. “Well-defined, high molecular weight poly(3-alkylthiophene)s in thin-film transistors:

- side chain invariance in field-effect mobility” *J. Mater. Chem.*, **2010**, 20, 3195-3201.
27. Osaka, I.; Zhang, R.; **Sauvé, G.**; Smilgies, D.-M.; Kowalewski, T.; McCullough, R. D. “High-lamellar ordering and amorphous-like p-network in short-chain thiazolothiazole-thiophene copolymers lead to high mobilities”, *J. Am. Chem. Soc.*, **2009**, 131(7), 2521-2529.
  28. Liu, J.; Zhang, R.; **Sauvé, G.**; Kowalewski, T.; McCullough, R. D. “Highly disordered polymer field effect transistors: n-alkyl dithieno[3,2-*b*:2',3'-*d*]pyrroles-based copolymers with surprisingly high charge carrier mobilities”, *J. Am. Chem. Soc.*, **2008**, 130(39), 13167-13176.
  29. Singh, K. A.; **Sauvé, G.**; Zhang, R.; Kowalewski, T.; McCullough, R. D.; Porter, L. M. “Dependence of field-effect mobility and contact resistance on nanostructure in regioregular poly(3-hexylthiophene) thin film transistors”, *Appl. Phys. Lett.*, **2008**, 92, 263303.
  30. Osaka, I.; **Sauvé, G.**; Zhang, R.; Kowalewski, T.; McCullough, R. D. “Novel thiophene-thiazolothiazole copolymers for organic field-effect transistors”, *Adv. Mater.*, **2007**, 19(23) 4160-4165.
  31. **Sauvé, G.**; McCullough, R. D. “High Field-Effect Mobilities for diblock copolymers of poly(3-hexylthiophene) and poly(methyl acrylate)”, *Adv. Mater.*, **2007**, 19(14) 1822-1825.
  32. Li, B.; Santhanam, S.; Schultz, L.; Jeffries-EL, M.; Iovu, M. C.; **Sauvé, G.**; Cooper, J.; Zhang, R.; Revelli, J. C.; Kusne, A. G.; Snyder, J. L.; Kowalewski, T.; Weiss, L. E.; McCullough, R. D.; Fedder, G. K.; Lambeth, D. N.; “Inkjet printed chemical sensor array based on polythiophene conductive polymers”, *Sensors and Actuators, B: Chemical*, **2007**, B123, 651-660.
  33. Li, B.; **Sauvé, G.**; Iovu, M. C.; Zhang, R.; Cooper, J.; Santhanam, S.; Schultz, L.; Revelli, J. C.; Kusne, A. G.; Kowalewski, T.; Snyder, J. L.; Weiss, L. E.; Fedder, G. K.; McCullough, R. D.; Lambeth, D. N.; “Volatile organic compound detection using nanostructured copolymers”, *Nano Lett.*, **2006**, 6 (8) 1598-1602.
  34. Zhang, R.; Li, B.; Iovu, M.; Jeffries-EL, M.; **Sauvé, G.**; Cooper, J.; Jia, S.; Tristram-Nagle, S.; Smilgies, D. M.; Lambeth, D. N.; McCullough, R. D.; Kowalewski, T. “Nanostructure dependence of field-effect mobility in regioregular poly(3-hexylthiophene) thin film field effect transistors”, *J. Am. Chem. Soc.*, **2006**, 128(11), 3480-3481.
  35. Jeffries-EL, M.; **Sauvé, G.**; McCullough, R. D. “Facile Synthesis of end-functionalized regioregular poly(3-alkylthiophene)s via modified grignard metathesis reaction”, *Macromolecules*, **2005**, 38(25), 10346-10352.
  36. Ewbank, P. C.; Loewe, R. S.; Zhai, L.; Reddinger, J.; **Sauvé, G.**; McCullough, R. D. “Regioregular Poly(thiophene-3-alkanoic acid)s: Water soluble conducting polymers suitable for chromatic chemosensing in solution and solid State”, *Tetrahedron*, **2004**, 60(49), 11269-11275.
  37. Jeffries-EL, M.; **Sauvé, G.**; McCullough, R. D. “In-situ end-group functionalization of regioregular poly(3-alkylthiophene) using the Grignard Metathesis polymerization method”, *Adv. Mater.*, **2004**, 16(12), 1017-1019.



38. **Sauvé, G.**; Cass, M. E.; Coia, G.; Doig, S. J.; Lauermann, I.; Pomykal, K. E.; Lewis, N. S. “Dye sensitization of nanocrystalline titanium dioxide with osmium and ruthenium polypyridyl complexes”, *J. Phys. Chem. B*, **2000**, 104, 6821-6836.
39. **Sauvé, G.**; Cass, M. E.; Doig, S. J.; Lauermann, I.; Pomykal, K. E.; Lewis, N. S. “High quantum yield sensitization of nanocrystalline titanium dioxide photoelectrodes with cis-dicyanobis(4,4'-dicarboxy-2,2'-bipyridine)osmium(ii) or tris(4,4'-dicarboxy-2,2'-bipyridine)osmium(ii) complexes”, *J. Phys. Chem. B*, **2000**, 104, 3488-3491.
40. Kamat, P. V.; **Sauvé, G.**; Guldi, D. M.; Asmus, K.-D. “Radical reactions of C<sub>84</sub>”, *Res. Chem. Intermed.*, **1997**, 23, 575-585.
41. **Sauvé G.**; Kamat, P. V.; Thomas, K. G.; Thomas, K. J.; Das, S.; George, M. V. “Photochemistry of Squaraine Dyes: Excited triplet state and redox properties of crown ether squaraines”, *J. Phys. Chem.*, **1996**, 100(6), 2117-2123.
42. Serpone, N.; **Sauvé, G.**; Koch, R.; Tahiri, H.; Pichat, P.; Piccinini, P.; Pelizzetti, E.; Hidaka, H. “Standardization protocols of process efficiencies and activation parameters in heterogeneous photocatalysis: relative photonic efficiencies  $\xi_r$ ”, *J. Photochem. Photobiol. A: Chem.*, **1996**, 94(2,3), 191-203.
43. **Sauvé, G.**; Kamat, P. V.; Ruoff, R. S. “Excited triplet and reduced forms of C<sub>84</sub>”, *J. Phys. Chem*, **1995**, 99, 2162-2165.
44. **Sauvé, G.**; Dimitrijevic, N. M.; Kamat, P. V. “Singlet and triplet excited state behaviors of C<sub>60</sub> in nonreactive and reactive polymer films”, *J. Phys. Chem.*, **1995**, 99, 1199-1203.
45. Serpone, N.; Terzian, R.; Lawless, D.; Kennepohl, P.; **Sauvé, G.** “On the usage of turnover numbers and quantum yields in heterogeneous photocatalysis”, *J. Photochem. Photobiol., A: Chem.*, **1993**, 73(1), 11-16.

### Multimedia: Videos and Slide Shows

1. **Sauvé, G.** “Beyond Fullerenes: Designing Alternative Molecular Electron Acceptors” *J. Phys. Chem. Lett. Perspective Video*, Published Sept. 21, 2015. URL: <https://www.youtube.com/watch?v=CuBpcHppcd8&list=PLDEE0898E6A1CE852&index=6>
2. Senevirathna, W.; Daddario, C. M.; **Sauvé, G.** “Density functional theory study predicts low reorganization energies for azadipyrromethene-based metal complexes”, *J. Phys. Chem. Lett., ACS LiveSlides*. URL: [https://figshare.com/articles/Density\\_Functional\\_Theory\\_Study\\_Predicts\\_Low\\_Reorganization\\_Energies\\_for\\_Azadipyrromethene\\_Based\\_Metal\\_Complexes/2029668](https://figshare.com/articles/Density_Functional_Theory_Study_Predicts_Low_Reorganization_Energies_for_Azadipyrromethene_Based_Metal_Complexes/2029668)

### Book chapters

**Sauve, G.** “Non-Fullerene Acceptors” in “World Scientific Handbook of Organic Optoelectronic Devices”, Editor-in-chief: Franky So, Volume 2: “Organic Photovoltaics (OPVs)” Editor: Barry C Thompson. World Scientific, Aug 2018, p. 31-87.

Ewbank, P. C.; Stefan, Mihaela C.; **Sauve, G.**; McCullough R. D., “Synthesis, characterization and properties of regioregular polythiophene-based materials, in Handbook of Thiophene-based Materials: Applications in Organic Electronics and Photonics”, Wiley, **2009**, 157-203.

## **Presentations**

Sauve, G. “Zinc Complexes of Azadipyromethenes as Non-Fullerene Acceptors for Organic Photovoltaics”, Process Chemistry & Development, Development of Advanced Materials for Sustainability Applications, 50<sup>th</sup> ACS Central Regional Meeting 2019, June 4-8, Midland, MI. Invited Talk.

Sauve, G. “ Novel Conjugated Materials for Solution-Processable Organic Solar Cells”, Natural Sciences and Engineering Research Council of Canada (NSERC) Green Electronics Network, 1<sup>st</sup> Annual General Meeting, Montréal, Canada, May 30-31, 2019. Invited Talk.

Sauve, G. “Plastic Solar Cells for a Greener Future” CWRU Electrochemical Society (ECS) Student Chapter Seminar Series, CWRU, December 6, 2018, Invited Talk.

Sauve, G. “High Relative Dielectric Constants Poly(3-Alkylthiophene)s from Side Chain Modification with Sulfoxide and Sulfonyl Groups” 256<sup>th</sup> ACS National Meeting and Exposition, PMSE: Synthesis, Processing & Device Engineering of Polymeric Electronic Materials”, Boston, MA, August 21, 2018, Contributed Talk.

Sauve, G. “Fluorination Increases the Electron Mobility of Zinc Azadipyromethene-Based Electron Acceptors and Enhances Performance of Organic Solar Cells” 256<sup>th</sup> ACS National Meeting and Exposition, INORG: “Chemistry of Materials: Materials for Energy & Catalytic Applications”, Boston, MA, August 19, 2018, Contributed Talk.

Sauve, G. “Design, Synthesis and Structure-Property Studies of Novel Conjugated Materials for Organic Electronic Applications”, Promerus LLC, Brecksville, OH, March 1, 2018; Invited seminar.

Sauve, G. “Plastic Solar Cells for a Greener Future”, *School of Science*, Penn State Behrend, Erie, PA, November 14, 2017; Invited recruiting seminar.

Sauve, G. “Azadipyromethene-Based Complexes as Electron Acceptor in Bulk Heterojunction Organic Solar Cells” 254<sup>th</sup> ACS National Meeting and Exposition, POLY: Non-conventional Building Blocks in Conjugated Materials: Innovative Designs & New Applications, Washington, D.C., August 23, 2017, Invited talk.

Sauve, G. “Alternative Molecular Acceptors for Bulk Heterojunction Solar Cells” Air Force Research Laboratory (AFRL), Materials and Manufacturing Directorate, Dayton OH, May 19, 2017. Invited seminar.

Sauve, G. “Alternative Molecular Acceptors for Bulk Heterojunction Solar Cells” Division of Materials Science and Engineering, Boston University, MA, March 31, 2017. Invited seminar.

Sauve, G. “Alternative Molecular Acceptors for Bulk Heterojunction Solar Cells” Dept. of Chemistry, Carnegie Mellon University, February 7, 2017. Invited seminar.

Sauve, G.; Etheridge, F.; Fernando, R. “Tuning the Properties of Core-Substituted Naphthalene Diimides for Opto-Electronic Applications” 252<sup>nd</sup> ACS National Meeting and Exposition,

ORGN: Materials, Devices & Switches, Philadelphia, PA, August 21-25, 2016, ORGN-546. Contributed talk.

Sauve, G. “Alternative Electron Acceptors Based on Azadipyrrromethenes Complexes for Bulk Heterojunction Organic Solar Cells” *252<sup>nd</sup> ACS National Meeting & Exposition*, INORG: Chemistry of Materials: Materials for Energy & Catalytic Applications, Philadelphia, PA, August 21-25, 2016, INOR-45. Contributed talk.

Sauve, G., Etheridge, F., Pejic, S., Fernando, R. “Alternative Molecular Electron Acceptors for Bulk Heterojunction Organic Solar Cell Based on Fluorinated Azadipyrrromethene Zinc Complexes” *Electronic Processes in Organic Materials Gordon Research Conference*, Renaissance Tuscany II Ciocco, Italy, June 5-10, 2016. Contributed poster.

Sauve, G. “Alternative Electron Acceptors for bulk Heterojunction Organic Solar Cells” *Materials Chemistry & Application: Environment, Energy & Biology*, 2016 Central Regional Meeting (CERM), Covington, KY, May 18-21, 2016. Contributed talk.

Sauve, G. “Plastic Solar Cells for a Greener Future” Science Café Cleveland, SIGMA XI, Cleveland, OH, April 11, 2016. Invited presentation.

Sauve, G. “Alternative Molecular Electron Acceptors for Bulk Heterojunction Organic Solar Cells” Dept. of Chemistry, Rutgers University, Newark NJ, Feb. 4, 2016. Invited seminar.

Sauve, G. “Alternative Molecular Electron Acceptors for Bulk Heterojunction Organic Solar Cells” Dept. of Chemistry and Biochemistry, Notre Dame University, Notre Dame IN, Nov. 19, 2015. Invited seminar.

Sauve, G. “Alternative Electron Accepting  $\pi$ -conjugated Molecules for Organic Photovoltaics” *12<sup>th</sup> International Symposium on Functional  $\pi$ -Electron Systems*, Materials, Seattle, USA, July 19-24, 2015. Invited talk.

Sauve, G. “Alternative Electron Accepting  $\pi$ -conjugated Molecules for Organic Photovoltaics”, *New Advances in Energy Production and Storage Symposium*, University of Montreal, June 18-19, 2015. Invited lecture.

Sauve, G. “Alternative electron accepting pi-conjugated molecules for organic photovoltaics”, *98<sup>th</sup> Canadian Chemistry Conference and Exhibition*, Pi-functional Materials: From Design to Applications Symposium, Ottawa, Canada, June 13-17, 2015. Invited talk.

Sauve, G. “Homoleptic zn(II) complexes of azadipyrrromethene as alternative electron acceptors for organic photovoltaic applications” *98<sup>th</sup> Canadian Chemistry Conference and Exhibition*, Inorganic and Supramolecular Chemistry in Energy and Materials Applications Symposium, Ottawa, Canada, June 13-17, 2015. Invited talk.

Kenney, M. J. and Sauve, G. “Active Learning in Chemistry at CWRU: Flipping the Chemistry Classroom.”, ACS Cleveland Local Section, Cleveland, OH, February 18, 2015. Invited talk.

Sauve, G. “Azadipyrrromethene-based conjugated materials with near-IR absorption as acceptors for organic solar cell”, Excitonic Photovoltaic (XPV) 2014, Telluride Science Research Center, CO, August 12-15, 2014. Invited talk.

Sauve, G. “My Career Path”, Lota Sigma Pi initiation meeting, Cleveland, OH, April 24, 2014; Guest speaker.

Sauve, G. “Azadipyromethene-based conjugated materials with near-IR absorption as acceptors for organic solar cell”, 247<sup>th</sup> *ACS National Meeting, Conjugated Polymers for Optoelectronics, Electronics and Biosensors*, Dallas, TX, March 16-20, 2014. Invited talk.

Sauve, G. “Towards Novel Electron Acceptors for Organic Photovoltaics”, *Department of Chemistry and Biochemistry*, Kent State University, Kent OH, January 23, 2014; Invited seminar.

Sauve, G. “Towards Novel Electron Acceptors for Organic Photovoltaics”, *Chemistry Department*, University of Akron, Akron, OH, December 3, 2013; Invited seminar.

Sauve, G. “Towards Novel Electron Acceptors for Organic Photovoltaics”, *Chemistry Department*, Indiana University of Pennsylvania, Indiana, PA, November 8, 2013; Invited recruiting seminar.

Sauve, G. “Towards Novel Electron Acceptors for Organic Photovoltaics”, *Chemistry Department*, Otterbein University, Westerville, OH, September 25, 2013; Invited recruiting seminar.

Sauve, G. “Synthesis and Characterization of Azadipyromethene-based Conjugated Compounds and their Chelates” 11<sup>th</sup> *International Symposium on Functional  $\pi$ -Electron Systems*, Arcachon, France, June 2-7, 2013; Submitted talk.

Sauve, G. “Towards Novel Electron Acceptors For Organic Photovoltaics”, *Workshop on Advanced Materials and Devices for Energy-Related Applications*, Institut national de la recherche scientifique, Varennes, Canada, May 31<sup>st</sup>, 2013; Invited talk.

Sauve, G. “Synthesis and Characterization of Azadipyromethene-based Conjugated Compounds and their Chelates”, 96<sup>th</sup> *Canadian Chemistry Conference and Exhibition*, Division of Materials Chemistry, Québec, Canada, May 26 - 30, 2013; Invited talk.

Sauve, G. “Rod-Like Oligomers Incorporating 2,6-Dialkylamino Core-Substituted Naphthalene Diimide As Acceptors For Organic Photovoltaics” 96<sup>th</sup> *Canadian Chemistry Conference and Exhibition*, Division of Materials Chemistry, Québec, Canada, May 26 - 30, 2013; Submitted talk.

Sauve, G. “Got energy? How about Solar? How the quest to use solar energy influences my work”, Fernway Elementary School, Shaker Heights, OH, May 22, 2013; Invited talk to all third graders at Fernway.

Sauve, G. “Conjugated Materials for Organic Photovoltaics”, *School of Science*, Penn State Behrend, Erie, PA, November 1<sup>st</sup>, 2012; Invited recruiting seminar.

Sauve, G. “Electron Accepting Conjugated Materials for Organic Photovoltaics Applications”, *Department of Chemistry*, John Carroll University, University Heights, OH, October 10<sup>th</sup>, 2012; Invited Talk.

Sauve, G. “Electron Accepting Low Bandgap Conjugated Polymers Based on Aza-borondipyromethene Dyes” 244<sup>th</sup> *ACS National Meeting, Main Group Chemistry Meets Polymer and Materials Science*, Philadelphia, PA, August 19-23, 2012; Invited talk.

Sauve, G. “N-Type Low Bandgap Conjugated Polymer Based on Aza-Dipyromethene Dyes” *International Conference on Science and Technology of Synthetic Metals*, Atlanta, GA, July 8-13, 2012; Invited short talk.

Sauve, G. “Functional Conjugated Polymers for Organic Photovoltaics” *Workshop on Polymers for Optics and Electronics*, Case Western Reserve University, Cleveland, May 15-16, **2012**; Invited talk.

Sauve, G.; Gao, L.; Daddario, C.; Mao, Z.; Singer, K.; Zhu, L.; Tang, S. “Harvesting near-IR Irradiation Using Electron-Accepting Conjugated Polymers Based on Aza-Dipyrrromethene Dyes” *Materials Research Society Fall Meeting*, Boston, MA, Nov. 28-Dec 2, 2011; Submitted talk.

Sauvé, G. “Electron Accepting Low Bandgap Conjugated Polymers Based On Azadipyrrromethene” *42<sup>nd</sup> ACS Central Regional Meeting*, Division of the Colloid and Surface Chemistry, Indianapolis, June 10, 2011; Invited Talk.

Sauvé, G.; Gao, L.; Senerivathna W.; “Azadipyrrromethene (Azadipy) As Building Blocks For Low Bandgap Conjugated Polymers” *94<sup>th</sup> Canadian Chemistry Conference and Exhibition*, Opto-electronic Materials, June 8, 2011; Submitted talk.

Sauvé, G. “Functional Polymers For Printable Electronic Applications”, *Department of Chemistry and Biochemistry*, Denison University, Granville, OH, March 24, 2011; Invited Talk.

Sauvé, G. “Functional Polymers For Printable Electronic Applications”, *Department of Chemistry and Biochemistry*, Miami University, Oxford, OH, March 3, 2011; Invited Talk.

Sauvé, G. “Polymeric Materials For Printable Electronic Applications: From Synthesis To Device Characterization”, *Physics Department*, Case Western Reserve University, Cleveland, OH, October 25, 2010; Invited Talk.

Sauvé, G. “Polymeric Materials For Printable Electronic Applications: From Synthesis To Device Characterization”, *Department of Macromolecular Science and Engineering*, Case Western Reserve University, Cleveland, OH, April 23, 2010; Invited Talk.

Sauvé, G. “Polymeric Materials For Printable Electronic Applications: From Synthesis To Device Characterization”, *Department of Materials Science and Engineering*, Case Western Reserve University, Cleveland, OH, March 2, 2010; Invited Talk.

Sauvé, G., “Block Copolymers Of Poly(3-Hexylthiophene): Towards Better Control Of Nanostructures”, *Workshop on Quantum Solar Energy Conversion*, Rauris, Austria, March 12, 2009; Submitted talk.

Sauvé, G., “Printable Electronics: From Synthesis of Conducting Polymers to High Mobility Transistors”, *Nano-Science Center*, University of Copenhagen, Denmark, October 30, 2008; Invited Talk.

Sauvé, G., “Regioregular Poly(3-Alkylthiophene)s For Use In Printable Electronic Applications: Transistors And Sensors”, *ACS local polymer section*, Pittsburgh, PA, April 22, 2008; Invited Talk.

Sauvé, G., “Regioregular Poly(3-Alkylthiophene)s For Use In Printable Electronic Applications: Transistors And Sensors”, *PPG Coatings Innovation Center*, Allison Park, PA, Feb. 26, 2008; Invited Talk.

Sauvé, G.; McCullough, R. D. “High Mobilities for Block Copolymers of Regioregular Poly(3-hexylthiophene)”, *Materials Research Society Spring Meeting*, San Francisco, CA, April 9-13, 2007; Submitted talk.

Sauvé, G.; McCullough, R. D. “High Mobilities for Block Copolymers of Regioregular Poly(3-hexylthiophene)”, *233<sup>rd</sup> ACS National Meeting*, Chicago, IL, March 25-29, 2007; Submitted talk.

Sauvé, G.; Zhang, R.; Li, B.; Iovu, M. C.; Craley, C.; Jeffries-EL, M.; Cooper, J.; Jia, S.; Tristram-Nagle, S.; Smilgies, D. M.; Lambeth, D. N.; Kowalewski, T. A.; McCullough, R. D. “Synthesis, mobility, and Conductivity of Well-defined Regioregular Poly(3-hexylthiophene) and Diblock Copolymers of Regioregular Poly(3-hexylthiophene)”, *SPIE-Optics and Photonics, Conference 6336 (Organic Field-Effect Transistors V)*, San Diego, CA, August 13-17, 2006. Submitted Talk.

McCullough, R. D.; Sauvé, G.; Li, B.; Jeffries-EL, M.; Santhanam, S.; Schultz, L.; Zhang, R.; Iovu, M. C.; Cooper, J.; Sreedharan, P.; Revelli, J. C.; Kusner, A. G.; Kowalewski, T.; Snyder, J. L.; Weiss, L. E.; Lambeth, D. N.; Fedder, G. K. “Regioregular Polythiophene Nanowires and Sensors”, *SPIE-Optics and Photonics, Conference 5940 (Organic Field-Effect Transistors IV)*, San Diego, CA, July 31-August 4, 2005; Gave Rick McCullough’s invited talk.

Sauvé, G.; Cass, M.; Coia, G.; Doig, S.; Lewis, N. S. “Studies of Ru and Os Bipyridine Complexes as Sensitizers for Polycrystalline TiO<sub>2</sub>-Based Photoelectrochemical Cells”, *216<sup>th</sup> ACS national Meeting*, August 23-27, 1998. Submitted Talk.