

CURRICULUM VITAE GENEVIEVE SAUVE

CURRENT PROFESSIONAL ADDRESS (until July 2009)

Helmholtz-Zentrum Berlin für Materialien und Energie GmbH
Glienicke Str. 100
D-14109, Berlin
Germany
Email: genevieve.sauve@helmholtz-berlin.de

EDUCATION

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

B. Sc. Honours in Chemistry, **Concordia University**, Montreal, Canada, 1994

PROFESSIONAL APPOINTMENTS

August 2009	Assistant Professor <i>Department of Chemistry, Case Western Reserve University, Cleveland, OH</i>
2008-2009	Visiting Scientist <i>Helmholtz-Centre Berlin for Materials and Energy, Berlin, Germany</i>
2008-2009	Visiting Assistant Professor <i>Department of Chemistry, Case Western Reserve University, Cleveland, OH</i>
2005-2008	Research Associate with Professor Richard D. McCullough <i>Department of Chemistry, Carnegie Mellon University, Pittsburgh, PA</i>
2002-2005	Postdoctoral Fellow with Professor Richard D. McCullough <i>Department of Chemistry, Carnegie Mellon University, Pittsburgh, PA</i>
1999-2000	Senior Development Chemist <i>PPG Industries, Pittsburgh, PA</i>

GRANTS

DAAD (German Academic Exchange Service) Faculty Research Visit grant to Germany, 2009

AWARDS , SCHOLARSHIPS AND FELLOWSHIPS

- Max Planck Institute of Colloids and Interfaces Fellowship, 2008
- Masters and Doctoral Research Scholarships, FCAR (Le Fond Québécois de la Recherche sur la Nature et les Technologies), 1994-1999

REVIEWING ACTIVITY

Journal Reviewer for: *Macromolecules*, *Progress in Polymer Science*, and *Journal of Polymer Science Part B: Polymer Physics*.

PUBLICATIONS

1. 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.
2. 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.
3. 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.
4. **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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. **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.
12. **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.
13. Kamat, P. V.; **Sauvé, G.**; Guldi, D. M.; Asmus, K.-D. "Radical Reactions of C₈₄", *Res. Chem. Intermed.*, **1997**, 23, 575-585.
14. **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.

15. 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 ξ_r ", *J. Photochem. Photobiol. A: Chem.*, **1996**, 94(2,3), 191-203.
16. **Sauvé, G.**; Kamat, P. V.; Ruoff, R. S. "Excited Triplet and Reduced Forms of C_{84} ", *J. Phys. Chem.*, **1995**, 99, 2162-2165.
17. **Sauvé, G.**; Dimitrijevic, N. M.; Kamat, P. V. "Singlet and Triplet Excited State Behaviors of C_{60} in Nonreactive and Reactive Polymer Films", *J. Phys. Chem.*, **1995**, 99, 1199-1203.
18. 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.

CONFERENCE PUBLICATIONS

1. **Sauvé, G.**; Liu, J.; Zhang, R.; Jia, S.; Kowalewski, T.; McCullough, R. D. "Record High Mobility for Regioregular Poly(3-octylthiophene)", *Proceedings of SPIE-The International Society for Optical Engineering*, **2007**, 6658 (Organic Field-Effect Transistors VI).
2. Osaka, I.; **Sauvé, G.**; Zhang, R.; McCullough, R. D. "Novel semiconducting polymer bearing thiazolothiazole unit for organic field-effect transistors", *Polymer Preprints (American Chemical Society, Division of Polymer Chemistry)*, **2007**, 48(2), 100.
3. McCullough, R. D.; **Sauvé, G.**; Cooper, J. R.; Iovu, M. C.; Osaka, I.; Javier, A.; Li, B.; Lambeth, D. N.; Weiss, L.; Fedder, G.; Kowalewski, T. "Regioregular polythiophenes: transistor optimization and sensors", *Polymer Preprints (American Chemical Society, Division of Polymer Chemistry)*, **2007**, 48(2), 13.
4. Zhang, R.; Iovu, M. C.; **Sauvé, G.**; Cooper, J. R.; Javier, A.; Smilgies, D. M.; McCullough, R. D.; Kowalewski, T. "Nanoscale organization in thin films of regioregular poly(3-hexylthiophene) block copolymers", *PMSE Preprints*, **2007**, 97, 3-4.
5. **Sauvé, G.**; McCullough, R. D. "High Mobilities for Block Copolymers of Regioregular Poly(3-hexylthiophene)", *PMSE Preprints*, **2007**, 96, 749-750.
6. **Sauvé, G.**; Zhang, R.; Jia, S.; Kowalewski, T.; McCullough, R. D. "Synthesis, mobility, and conductivity of well-defined regioregular poly(3-hexylthiophene) and diblock copolymers of regioregular poly(3-hexylthiophene)", *Proceedings of SPIE-The International Society for Optical Engineering*, **2006**, 6336 (Organic Field-Effect Transistors V), 633614.
7. Cooper, J.; Zhang, R.; Iovu, M. C.; **Sauvé, G.**; Kowalewski, T.; McCullough, R. D. "Detection of Volatile Organic Chemicals by use of Regioregular Poly(3-alkylthiophene) Chemical Sensor Array", *PMSE Preprints*, **2006**, 95, 870-871.
8. Zhang, R.; Bo, L.; Iovu, M. C.; 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", *PMSE Preprints*, **2006**, 95, 862-863.
9. **Sauvé, G.**; Iovu, M. C.; Jeffries-EL, McCullough, R. D. "Well-Defined Poly(3-hexylthiophene)-*b*-Poly(acrylate) Di-block Copolymers", *Polymer Preprints*, **2005**, 46(2) 496.
10. 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", *Proceedings of SPIE-The International Society for Optical Engineering*, **2005**, 5940(Organic Field-Effect Transistors IV), 594005/1-594005/7.

11. Iovu, M. C.; Jeffries-EL, M.; Sheina, E.; Krankowski, A. B.; **Sauvé, G.**; McCullough, R. D. "Synthesis and Characterization of Poly(3-hexylthiophene)-*b*-polystyrene Di-block Copolymers", *Polymer Preprints*, **2004**, 45(2), 645-646.
12. Jeffries-EL, M.; Iovu, M. C.; Sheina, E.; **Sauvé, G.**; McCullough, R. D. "End functionalized Poly(3-alkylthiophenes) as Building blocks for the Synthesis of Diblock Copolymers", *Polymers Preprints*, **2004**, 45(2), 551-552.
13. Iovu, M. C.; Sheina, E. E.; **Sauvé, G.**; Jeffries-EL, M.; Cooper, J.; McCullough, R. D. "Synthesis of Poly(3-hexylthiophene) Di-block Copolymers Using Atom Transfer Radical Polymerization", *Polymer Preprints*, **2004**, 45(1), 278-279.
14. Jeffries-EL, M.; **Sauvé, G.**; Iovu, M.; McCullough, R. D. "In Situ End Group Modification of Regioregular Poly(3-alkylthiophenes) via Grignard Metathesis (GRIM) Polymerization", *Polymer Preprints*, **2004**, 45(1), 183-184.
15. **Sauvé, G.**; Jeffries-EL, M.; McCullough, R. D. "Control of End-groups of Regioregular Poly(3-alkylthiophenes) Using Grignard Metathesis", *Polymer Preprints*, **2003**, 44(2), 432.
16. Kamat, P. V.; **Sauvé, G.** "Photophysical and Charge Transfer Processes of C₈₄", *Proceedings – Electrochemical Society*, **1995**, 95-10, 431-40.

PRESENTATIONS

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., Javier, A.; Stefan, M. C.; Liu, J.; Sydlik, S. A.; Zhang, R.; Kowalewski, T.; McCullough, R. D. "Record High Charge Carrier Mobilities for Well-Defined Regioregular Poly(3-alkylthiophene)s and for Block Copolymers of Poly(3-hexylthiophene)", *Materials Research Society Spring Meeting*, San Francisco, CA, March 24-28, **2008**; Submitted Poster.

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^d 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.; Iovu, M. C.; Jeffries-EL, McCullough, R. D. "Well-Defined Poly(3-hexylthiophene)-*b*-Poly(acrylate) Di-block Copolymers", *Abstracts of Papers, ACS National Meeting*, Washington, DC, August 28-September 1, **2005**. Submitted Poster.

Sauvé, G.; Jeffries-EL, M.; McCullough, R. D. "Control of End-groups of Regioregular Poly(3-alkylthiophenes) Using Grignard Metathesis", *Abstracts of Papers, 35th Central Regional Meeting of the American Chemical Society*, Pittsburgh, PA, October 19-22, **2003**, Submitted Poster.

Sauvé, G.; Jeffries-EL, M.; McCullough, R. D. "Control of End-groups of Regioregular Poly(3-alkylthiophenes) Using Grignard Metathesis", *Abstracts of Papers, 226th ACS National Meeting*, New York, NY, September 7-11, **2003**, POLY-401, Submitted Poster.

Sauvé, G.; Cass, M.; Coia, G.; Doig, S.; Lewis, N. S. "Studies of Ru and Os Bipyridine Complexes as Sensitizers for Polycrystalline TiO₂-Based Photoelectrochemical Cells", *216th ACS national Meeting*, August 23-27, **1998**. Submitted Talk.

PROFESSIONAL MEMBERSHIPS

- American Chemical Society
 - Polymer Division
 - Polymeric Materials: Science and Engineering Division
- Materials Research Society
- European Society for Quantum Solar Energy Conversion (QUANTSOL)

LANGUAGES

Fluent in French and English; Basic knowledge of German.