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## KATSU OGAWA, Ph.D.

Department of Chemistry  
St. Bonaventure University  
3261 West State Road, St. Bonaventure, NY 14778  
Phone: (716) 375-2561  
E-mail: kogawa@sbu.edu

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### EDUCATION

Ph.D., Chemistry, North Dakota State University, Fargo, ND, August 2005 (Official Date: May 2006)  
B.S., ACS Chemistry, Minnesota State University, Mankato, MN, May 2000

### PROFESSIONAL EXPERIENCES

2022 – **Assistant Professor**, Department of Chemistry  
St. Bonaventure University, St. Bonaventure, New York

2017 – 2022 **Associate Professor**, Department of Natural Sciences  
Dickinson State University, Dickinson, North Dakota

2016 – 2017 **Visiting Assistant Professor**, Department of Chemistry and Geology  
Minnesota State University, Mankato, Minnesota

2009 – 2016 **Assistant Professor**, Department of Chemistry and Biochemistry  
California State University Northridge, Northridge, California

2005 – 2009 **Postdoctoral Research Associate**, Department of Chemistry  
University of Florida, Gainesville, Florida

Summer 2004 **Part-time Lecturer**, College of Pharmacy, Nursing, and Allied Sciences  
North Dakota State University, Fargo, North Dakota

Spring 2004 **Part-time Lecturer (Graduate Teaching Internship)**, Division of Science & Mathematics  
Mayville State University, Mayville, North Dakota

2000 – 2005 **Graduate Research/Teaching Assistant**, Department of Chemistry & Molecular Biology  
North Dakota State University, Fargo, North Dakota

### COURSES TAUGHT

#### **At St. Bonaventure University:**

CHEM 301           Organic Chemistry I  
CHML 301          Organic Chemistry I Laboratory

#### **At Dickinson State University:**

CHEM 111/111L    Introductory Chemistry Online (Lecture and Laboratory)  
CHEM 115/115L    Introductory Chemistry (Lecture and Laboratory)  
CHEM 341/341L    Organic Chemistry I (Lecture and Laboratory)  
CHEM 342/342L    Organic Chemistry II (Lecture and Laboratory)  
CHEM 300          Environmental Chemistry  
CHEM 420          Inorganic Chemistry  
CHEM 470          Spectroscopy  
SCNC 105/105L    Physical Science (Lecture and Laboratory)  
SCNC 291          Sophomore Science Seminar

**At Minnesota State University Mankato:**

CHEM 104	Introductory Chemistry
CHEM 322	Organic Chemistry I (Lecture and Laboratory)
CHEM 323	Supplemental Organic Functional Group Chemistry
CHEM 324	Organic Chemistry II
CHEM 325	Organic Chemistry II Laboratory

**At California State University Northridge:**

CHEM 235	Introductory Organic Chemistry
CHEM 235L	Introductory Organic Chemistry Laboratory (TA Coordinator)
CHEM 333/D	Organic Chemistry I (with Discussion)
CHEM 333L	Organic Chemistry I Laboratory (TA Coordinator)
CHEM 334	Organic Chemistry II
CHEM 334R	Problem Solving in Organic Chemistry II (Recitation)
CHEM 411/411L	Organic/Inorganic Synthesis
CHEM 433/433L	Organic Analysis

**At Mayville State University:**

CHEM 122	General Chemistry II (Lecture and Laboratory)
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**At North Dakota State University:**

	Organic Chemistry for Native American Pharmacy Program (as a lecturer)
	Inorganic Chemistry Laboratory (as a teaching assistant)
	Organic Chemistry Laboratory (as a teaching assistant)
	General Chemistry Laboratory (as a teaching assistant)

**FUNDING HISTORY****American Chemical Society Petroleum Research Fund - Undergraduate New Investigator (UNI)**

Principal investigator. Award: \$50,000. 09/01/2010 - 08/31/2014. Based on proposal "Controlling Morphology and Electronic Properties of Two-Dimensional Organometallic  $\pi$ -Conjugated Polymers via Orthogonal Polymerization Methods"

**CSUN Probationary Faculty Support Program**

Principal investigator. Award: 3 units of release time. Spring semester 2010. Based on proposal "Two-Dimensional Organometallic Conjugated Polymers via Orthogonal Polymerization Methods"

**HONORS, AWARDS, AND PROFESSIONAL MEMBERSHIPS**

2019 – current	Editorial Board Member: Current Research in Materials Chemistry
2001 – current	Member: American Chemical Society – Polymer Division
2009 – 2012	Member: Council on Undergraduate Research
2008 – 2012	Member: Inter-American Photochemical Society
2005	North Dakota State University Chemistry Graduate Student Scholarship
2004	North Dakota State University Graduate School Teaching Award
2004	North Dakota BRIN Graduate Teaching Internship Award
2000	MSU Mankato, Outstanding International Student Award
1999	MSU Mankato, Global Leadership Excellence Award
1998	MSU Mankato, International Student Office Endowment Scholarship Award
1996	MSU-Akita, Provost's Meritorious Service Award

## PUBLICATIONS

- 1) Ted M. Pappenfus, Daniel T. Seidenkranz, Matthew D. Lovander, Travis L. Beck, Brandon J. Karels, Katsu Ogawa, and Daron E. Janzen, "Synthesis and Electronic Properties of Oxidized Benzo[1,2-*b*:4,5-*b'*]dithiophenes" *Journal of Organic Chemistry*, **2014**, *79*, 9408.
- 2) Hong Mo, Karla R. Radke, Katsu Ogawa, Christopher L. Heth, Brett T. Erpelding and Seth C. Rasmussen, "Solution and solid-state properties of highly fluorescent dithieno[3,2-*b*:2',3'-*d'*]pyrrole-based oligothiophenes" *Physical Chemistry, Chemical Physics* **2010**, *12*, 14585-14595.
- 3) Yan Liu, Katsu Ogawa, and Kirk S. Schanze, "Conjugated Polyelectrolytes as Fluorescent Sensors" *Journal of Photochemistry and Photobiology C* **2009**, *10*, 173-190.
- 4) Katsu Ogawa, Fengqi Guo and Kirk S. Schanze, "Phosphorescence Quenching of a Platinum Acetylide Polymer by Transition Metal Ions" *Journal of Photochemistry and Photobiology A* **2009**, *207*, 79-85.
- 5) Yanli Tang, Zhijun Zhou, Katsu Ogawa, Gabriel P. Lopez, Kirk S. Schanze, and David G. Whitten, "Photophysics and self-assembly of symmetrical and unsymmetrical cationic oligophenylene ethynyls" *Journal of Photochemistry and Photobiology A* **2009**, *207*, 4-6.
- 6) Lianhao Zhang, Katsu Ogawa, Ion Ghiviriga, and William R. Dolbier Jr., "Reactions of Nucleophiles with Perfluoro[2.2]paracyclophane" *Journal of Organic Chemistry* **2009**, *74*, 6831.
- 7) Thomas S. Corbitt, Liping Ding, Eunkyung Ji, Linnea K. Ista, Katsu Ogawa, Gabriel P. Lopez, Kirk S. Schanze, and David G. Whitten, "Light and Dark Biocidal Activity of Cationic Poly(arylene ethynylene) Conjugated Polyelectrolytes" *Photochemical & Photobiological Sciences* **2009**, *8*, 998-1005.
- 8) Thomas S. Corbitt, Jonathan R. Sommer, Sireesha Chemburu, Katsu Ogawa, Linnea K. Ista, Gabriel P. Lopez, David G. Whitten, and Kirk S. Schanze, "Conjugated Polyelectrolyte Capsules: Light-Activated Anti-microbial Micro 'Roach Motels'" *ACS Applied Materials & Interfaces* **2009**, *1*, 48-52.
- 9) Jianguo Mei, Katsu Ogawa, Young-Gi Kim, Nathan C. Heston, Daniel J. Arenas, Zahra Nasrollahi, Tracy D. McCarley, David B. Tanner, John R. Reynolds, and Kirk S. Schanze, "Low-Bandgap Platinum Acetylide Polymers as Active Materials for Organic Solar Cells" *ACS Applied Materials & Interfaces* **2009**, *1*, 150-161.
- 10) Yanli Tang, Zhijun Zhou, Katsu Ogawa, Gabriel P. Lopez, Kirk S. Schanze, and David G. Whitten "Synthesis, Self-Assembly and Photophysical Behavior of Oligo Phenylene Ethynyls: From Molecular to Supramolecular Properties" *Langmuir* **2009**, *25*, 21-25.
- 11) Wei Xu, William R. Dolbier Jr., Jian-Xin Duan, Yian Zhai; Katsu Ogawa, Merle A. Battiste, and Ion Ghiviriga, "Octafluoro[2.2]paracyclophane (AF4) quinine" *Collection of Czechoslovak Chemical Communications* **2008**, *73*, 1764-1776.
- 12) Sireesha Chemburu, Thomas S. Corbitt, Linnea K. Ista, Eunkyung Ji, Julia Fulghum, Gabriel P. Lopez, Katsu Ogawa, Kirk S. Schanze, and David G. Whitten, "Light-Induced Biocidal Action of Conjugated Polyelectrolytes Supported on Colloids" *Langmuir* **2008**, *24*, 11053-11062.
- 13) Katsu Ogawa, Komandoor E. Achyuthan, Sireesha Chemburu, Eunkyung Ji, Yan Liu, Gabriel P. Lopez, Kirk S. Schanze and David G. Whitten, "Polyelectrolyte Based Fluorescent Sensors" In *Organic Semiconductors in Sensor Applications*; Bernards, D. A.; Owens, R. M.; Malliaras, G. G.; Eds. Springer: New York, 2008; Chapter 2.
- 14) Yan Liu, Katsu Ogawa, and Kirk S. Schanze, "A Conjugated Polyelectrolyte Based Real-Time Fluorescence Assay for Phospholipase C" *Analytical Chemistry*, **2008**, *80*, 150-159.
- 15) Seth C. Rasmussen, Katsu Ogawa, and Scott D. Rothstein "Synthetic Approaches to Band Gap Control in

Conjugated Polymeric Materials" In *Handbook of Organic Electronics and Photonics*; Nalwa, H. S., Ed.; American Scientific Publishers: Stevenson Ranch, CA, 2008; Vol.1, Chapter 1.

- 16) Fengqi Guo, Katsu Ogawa, Young-Gi Kim, Evgeny O. Danilov, Felix N. Castellano, John R. Reynolds and Kirk S. Schanze, "A Fulleropyrrolidine End-Capped Platinum-Acetylide Triad: The Mechanism of Photoinduced Charge Transfer in Organometallic Photovoltaic Cells" *Physical Chemistry Chemical Physics*, **2007**, *9*, 2724-2734.
- 17) Katsu Ogawa, Sireesha Chemburu, Gabriel P. Lopez, David G. Whitten and Kirk S. Schanze "Conjugated Polyelectrolyte-Grafted Silica Microspheres" *Langmuir* **2007**, *23*, 4541-4548.
- 18) Katsu Ogawa and Seth C. Rasmussen "N-Functionalized Poly(dithieno[3,2-*b*:2',3'-*d*]pyrrole)s: Highly Fluorescent Materials with Reduced Band Gaps" *Macromolecules* **2006**, *39*, 1771-1778.
- 19) Karla R. Radke, Katsu Ogawa, and Seth C. Rasmussen. "Highly Fluorescent Oligothiophenes through the Incorporation of Central Dithieno[3,2-*b*:2',3'-*d*]pyrrole Units." *Organic Letters* **2005**, *7*, 5253-5256.
- 20) Katsu Ogawa, Jenny A. Stafford, Scott D. Rothstein, Dennis E. Tallman, and Seth C. Rasmussen "Nitrogen-Functionalized Polythiophenes: Potential Routes to New Low Band Gap Materials" *Synthetic Metals* **2005**, *152*, 137-140.
- 21) Katsu Ogawa and Seth C. Rasmussen. "A Simple and Efficient Route to N-Functionalized Dithieno[3,2-*b*:2',3'-*d*]pyrroles: Fused-Ring Building Blocks for New Conjugated Polymeric Systems." *Journal of Organic Chemistry* **2003**, *68*, 2921-2928.
- 22) Katsu Ogawa, Karla R. Radke, Scott D. Rothstein, and Seth C. Rasmussen. "Synthesis of secondary and tertiary aminothiophenes via palladium-catalyzed amination." *Journal of Organic Chemistry* **2001**, *66*, 9067-9070.

## **PRESENTATIONS**

- 1) "Electrochemical and photophysical structure-property relationship investigation for 1,2,5-triarylpyrroles and their synthetic precursor 1,4-diaryl-1,3-butadiynes" Charlie J. Seibert, Roberta G. Garibyan, Susan T. Collins, and Katsu Ogawa. Poster presented at 251<sup>st</sup> ACS National Meeting, San Diego, CA, March 13-17, 2016.
- 2) "Electrochemical and photophysical structure-property relationship investigation for 1,2,5-triarylpyrroles and their synthetic precursor 1,4-diaryl-1,3-butadiynes" Susan T. Collins, Charlie J. Seibert, Roberta G. Garibyan, and Katsu Ogawa. Poster presented at 63<sup>rd</sup> Pacific Conference on Spectroscopy and Dynamics, Pacific Grove, CA, January 28-31, 2016.
- 3) "Syntheses and Photophysical/Electrochemical Characterizations of Phosphole Containing Thiophene Oligomers" Steven R. Ruark, Kenneth F. Cooper and Katsu Ogawa. Poster presented at 243<sup>th</sup> ACS National Meeting, San Diego, CA, March 25-29, 2012.
- 4) "Surface Grafted Conjugated Polyelectrolytes: Singlet Oxygen Generation and Light-Activated Antimicrobial Activity" Kirk S. Schanze, Katsu Ogawa, Eunhyung Ji, David G. Whitten, Linnea K. Ista, Gabriel P. Lopez, Sireesha Chemburu and Thomas S. Corbitt. Poster presented at 19<sup>th</sup> Inter-American Photochemical Society Winter Conference, St. Pete Beach, FL, January 2-5, 2009.
- 5) "Surface Grafted Conjugated Polyelectrolytes: Singlet Oxygen Generation and Light-Activated Antimicrobial Activity" Kirk S. Schanze, Katsu Ogawa, Eunhyung Ji, David G. Whitten, Linnea K. Ista, Gabriel P. Lopez, Sireesha Chemburu and Thomas S. Corbitt. Poster presented at Chemical and Biological Defense Physical Science and Technology Conference (CBD PS&T), New Orleans, LA, November 17-21, 2008.

- 6) "Synthesis and Characterization of Mixed Heterocyclic Acenes of Thiophene and Pyrrole" Katsu Ogawa and Seth C. Rasmussen. Poster presented at 229<sup>th</sup> ACS National Meeting, San Diego, CA, March 13-17, 2005.
- 7) "Preparation and characterization of N-functionalized poly(dithieno[3,2-*b*:2',3'-*d*]pyrrole)s." Katsu Ogawa and Seth C. Rasmussen. Talk given at 227<sup>th</sup> ACS National Meeting, Anaheim, CA, March 28-April 1, 2004.
- 8) "A simple and efficient route to N-functionalized dithieno[3,2-*b*:2',3'-*d*]pyrroles: Fused-ring building blocks for new conjugated polymeric systems." Katsu Ogawa and Seth C. Rasmussen. Poster presented at 225<sup>th</sup> ACS National Meeting, New Orleans, LA, March 23-27, 2003, Selected for Sci-Mix.
- 9) "N-Functionalized Dithieno[3,2-*b*:2',3'-*d*]pyrroles: New Conjugated Polymeric Materials Based on Fused-Ring Systems" Katsu Ogawa, and Seth C. Rasmussen. Talk given at the Midwest Organic Solid-State Chemistry Symposium XIV, Minneapolis, MN, June 7, 2003.
- 10) "A new synthetic pathway to N-functionalized poly(dithieno[3,2-*b*:2',3'-*d*]pyrrole)s." Katsu Ogawa and Seth C. Rasmussen. Poster presented at 223<sup>rd</sup> ACS National Meeting, Orlando, FL, April 7-11, 2002.
- 11) "Synthesis and Characterization of Dithieno[3,2-*b*:2',3'-*d*]pyrroles" Katsu Ogawa and Seth C. Rasmussen. Talk given at the 34<sup>th</sup> Great Lakes Regional ACS Meeting, Minneapolis, MN, June 2, 2002.

#### **PATENTS AND DISCLOSURES**

- 1) "Structure, Synthesis, and Applications for Poly(phenylene ethynylenes)", David Whitten, Kirk S. Schanze, Anand Parthasaray, Eunkyung Ji, Motokatsu Ogawa, Thomas Corbitt, Dimitri Dascier, Ying Wang, Linnea Ista, WO 2012009484 A2, January 19, 2012.
- 2) "Fibrous Materials Incorporating Biocidal Conjugated Polymers", David Whitten, Linnea Ista, Thomas Corbitt, Motokatsu Ogawa, Kirk S. Schanze, Gabriel P. Lopez, Ramanathan Nagarajan, WO 2011044580 A2, April 14, 2011.
- 3) "Conjugated Polyelectrolyte Capsules: Light Activated Antimicrobials", Kirk S. Schanze, Motokatsu Ogawa, Jonathan R. Sommer, David G. Whitten, Thomas S. Corbitt, WO 2010054304 A2, May 14, 2010.
- 4) "Structure, Synthesis, and Applications for Oligomeric Polyphenyleneethynylenes", David Whitten, Yanli Tang, Zhou Zhijun, Linnea Ista, Motokatsu Ogawa, David Keller, Brett Andrezejewski, Gabriel P. Lopez, Kirk S. Schanze, WO 2009158606 A2, EP 2307350 A2, December 30, 2009.
- 5) "Dark and Light Activated Biocidal Activity of Conjugated Polyelectrolyte Formulations", David Whitten, Sireesha Chemburu, Thomas Corbitt, Linnea Ista, Gabriel P. Lopez, Kirk S. Schanze, Motokatsu Ogawa, U.S. Provisional Patent Application Serial No. 60/980,693, Filed October 17, 2007.
- 6) "Surface Grafted Conjugated Polymers", David Whitten, Sireesha Chemburu, Thomas Corbitt, Linnea Ista, Gabriel P. Lopez, Kirk S. Schanze, Motokatsu Ogawa, WO 2008143731 A2, November 27, 2008.

#### **STUDENT THESIS**

- 1) Robert M. Pankow. The Synthesis and Electrochemical Characterization of Phosphole Containing Oligomers and Polymers. M.S. Thesis, California State University, Northridge, May 2015

#### **STUDENT PRESENTATIONS**

- 1) "Microwave assisted synthesis and electrochemical characterization of phosphole containing conjugated oligomers" **Robert M. Pankow**, Kenneth F. Cooper and Katsu Ogawa. Poster presented at 248<sup>th</sup> ACS National Meeting, San Francisco, CA, August 10-14, 2014.

- 2) "Effects of annulations and oxidation on photophysical properties of phosphole containing oligomers and their precursors" **Kenneth F. Cooper**, Robert M. Pankow and Katsu Ogawa. Poster presented at 248th ACS National Meeting, San Francisco, CA, August 10-14, 2014.
- 3) "Photophysical characterization of pyrrole containing  $\pi$ -conjugated oligomers and their precursors for structure property relationships" **Roberta G. Garibyan**, Charlie J. Lewis and Katsu Ogawa. Talk given at The 2014 Sigma Xi Student Symposium, April 25th, 2014. **Selected for Third Place.**
- 4) "Photophysical characterization of pyrrole containing  $\pi$ -conjugated oligomers and their precursors for structure property relationships" **Roberta G. Garibyan**, Charlie J. Lewis and Katsu Ogawa. Talk given at ACS Southern California Undergraduate Research Conference in Chemistry and Biochemistry, Concordia University, Irvine, CA, April 12th, 2014
- 5) "The Electrochemical Characterization of Phosphole Containing Platinum Complexes and  $\pi$ -Conjugated Polymers: Structure-Property Relationships Associated with P-Center Modification" **Robert M. Pankow** and Katsu Ogawa. Talk given at CSUN Student Research & Creative Works Symposium, February 14th, 2014.
- 6) "Photophysical Properties of Phosphole Containing Oligomers" **Kenneth F. Cooper** and Katsu Ogawa. Talk given at CSUN Student Research & Creative Works Symposium, February 14th, 2014.
- 7) "Development of Versatile Two-Step Synthetic Method for Preparation of Pyrrole Containing  $\pi$ -Conjugated Oligomers" **Charlie J. Lewis** and Katsu Ogawa. Poster presented at CSUN Student Research & Creative Works Symposium, February 14th, 2014.
- 8) "Photophysical Characterization of Pyrrole Containing  $\pi$ -Conjugated Oligomers and Their Precursors" **Roberta G. Garibyan** and Katsu Ogawa. Poster presented at CSUN Student Research & Creative Works Symposium, February 14th, 2014.
- 9) "Microwave Assisted Synthesis of Phosphole Containing Oligomers" **Robert M. Pankow**, Kenneth F. Cooper and Katsu Ogawa. Talk given at The 15th Annual Student Symposium Sigma Xi Scientific Research Society-CSUN Chapter on April 26th, 2013. **Selected for First Place.**
- 10) "Photophysical Properties of Phosphole Containing Oligomers" **Kenneth F. Cooper**, Robert M. Pankow, and Katsu Ogawa. Talk given at The 15th Annual Student Symposium Sigma Xi Scientific Research Society-CSUN Chapter, April 26th on 2013. **Selected for Second Place.**
- 11) "Microwave assisted Cycloaddition for Syntheses of Phosphole Containing Oligomers" **Robert M. Pankow**, **Kenneth F. Cooper** and Katsu Ogawa. Poster presented at CSUN Student Research & Creative Works Symposium, February 15th on 2013. **Selected for Second Place.**