Quentin Michaudel

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PROFESSIONAL EXPERIENCE

Assistant Professor
Department of Chemistry, Texas A&M University 2018–present
Department of Materials Science & Engineering, Texas A&M University 2019–present
Interests: Organic Chemistry, Polymer Science, Synthesis, Catalysis, Conjugated Materials, Sustainability

Postdoctoral Associate 2015–2018
Cornell University, *Advisor*: Professor Brett P. Fors
Research projects: Photocontrolled polymerizations, biorenewable monomers

Graduate Research Assistant 2010–2015
The Scripps Research Institute, *Advisor*: Professor Phil S. Baran
Dissertation title: Oxidation of Complex Molecules: From Nature to the Flask

Masters' Research Feb–Aug 2009
The Scripps Research Institute, *Advisor*: Professor Phil S. Baran
Dissertation title: Stereocontrolled Synthesis of Plavix® (Clopidogrel) Metabolites

EDUCATION

The Scripps Research Institute, La Jolla 2010–2015
Ph.D. in Chemistry

École Normale Supérieure de Lyon (France) 2008–2010
M.S. with honors in Chemistry

École Normale Supérieure de Lyon (France) 2007–2008
B.S. with honors in Physics and Chemistry

Lycée Sainte-Geneviève, Versailles (France) 2004–2007
Preparatory classes in science for competitive entrance exam to the École Normale Supérieure

AWARDS

NSF CAREER Award 2022
ACS PMSE Young Investigator Award 2022
Academic Young Investigator's Symposium (ACS, Organic Division) 2022
Montague-Center for Teaching Excellence Scholars Program 2021

Thieme Chemistry Journals Award	2021
NIH MIRA (R35) Award	2020
Selected to participate in the Cottrell Scholars Collaborative New Faculty Workshop	2018
SciFinder Future Leaders Award	2015
Bristol-Myers Squibb Graduate Fellowship in Synthetic Organic Chemistry	2014–2015
TSRI Graduate Student Symposium Outstanding Presentation Award	2013
Laureate of Lions Club/CERN Physics Contest	2004

PUBLICATIONS

(† signifies co-authorship, undergraduate co-authors are underlined)

Under Review and Preprints

23) Wu, J. W.; Kulow, R. W.; Redding, M. J.; Fine, A. J.; Grayson, S. M.; **Michaudel, Q.*** Synthesis of Degradable Polysulfamides via Sulfur(VI) Fluoride Exchange Click Polymerization of AB-type Monomers. *Submitted.*

Independent Career

22) Hsu, T.-W.;† Kempel, S. J.;† Felix Thayne, A. P.; **Michaudel, Q.*** Stereocontrolled Acyclic Diene Metathesis Polymerization. *Nat. Chem.* **2022**, *in press.*

21) Hancock, S.;† Yuntawattana, N.;† Valdez, S.; **Michaudel, Q.*** Expedient Synthesis and Ring-Opening Metathesis Polymerization of Pyridinonorbornenes. *Polym. Chem.* **2022**, *13*, 5530. Invited contribution to "Polymer Chemistry Emerging Investigators Series"

20) **Michaudel, Q.;*** Kempel, S. J.; Hsu, T.-W.; deGruyter, J. N. *E* vs *Z* Selectivity in Olefin Metathesis Through Catalyst Design. In *Comprehensive Organometallic Chemistry IV*, 4th ed.; Parkin, G. F. R.; Meyer, K.; O'Hare, D. Eds; Elsevier, 2022.

19) Hsu, T.-W.; Kempel, S. J.; **Michaudel, Q.*** All-*cis* Poly(*p*-phenylene vinylene)s with High Molar Masses and Fast Photoisomerization Rates Obtained through Stereoretentive Ring-opening Metathesis Polymerization of [2,2]Paracyclophane Dienes with Various Aryl Substituents. *J. Polym. Sci.* **2022**, *60*, 569–578.

18) Sousa e Silva, F. C.;† Doktor, K;† **Michaudel, Q.*** Modular Synthesis of Alkenyl Sulfamates and *β*-Ketosulfonamides via Sulfur(VI) Fluoride Exchange (SuFEx) Click Chemistry and Photomediated 1,3-Rearrangement. *Org. Lett.* **2021**, *23*, 5271–5276.

17) Kempel, S. J.; Hsu, T.-W.; **Michaudel, Q.*** Stereoretentive Olefin Metathesis: A New Avenue for the Synthesis of All-*cis* Poly(*p*-phenylene vinylene)s and Stereodefined Polyalkenamers. *Synlett* **2021**, *32*, 851–857.

16) Kulow, R. W.;† Wu, J. W.;† Kim, C.; **Michaudel, Q.*** Synthesis of Unsymmetrical Sulfamides and Polysulfamides *via* SuFEx Click Chemistry. *Chem. Sci.* **2020**, *11*, 7807–7812.

15) Hsu, T.-W.;† Kim, C.;† **Michaudel, Q.*** Stereoretentive Ring-Opening Metathesis

Polymerization to Access All-*cis* Poly(*p*-phenylenevinylene)s with Living Characteristics. *J. Am. Chem. Soc.* **2020**, *142*, 11983–11987.

Postdoctoral, Graduate, and Master Publications

14) Kottisch, V.; O'Leary, J.; **Michaudel, Q.**; Stache, E. E.; Lambert, T. H.; Fors, B. P. Controlled Cationic Polymerization: Single-Component Initiation Under Ambient Conditions. *J. Am. Chem. Soc.* **2019**, *141*, 10605–10609.

13) **Michaudel, Q.**; Chauviré, T.; Kottisch, V.; Supej, M. J.; Stawiasz, K. J.; Shen, L.; Zipfel, W. R.; Abruña, H. D.; Freed, J. H.; Fors, B. P. Mechanistic Insight into the Photocontrolled Cationic Polymerization of Vinyl Ethers. *J. Am. Chem. Soc.* **2017**, *139*, 15530–15538.

12) Kottisch, V.; **Michaudel, Q.**; Fors, B. P. Photocontrolled Interconversion of Cationic and Radical Polymerizations. *J. Am. Chem. Soc.* **2017**, *139*, 10665–10668.

11) Trotta, J. T.; Jin, M.; Stawiasz, K. J.; **Michaudel, Q.**; Chen, W.-L.; Fors, B. P. Synthesis of Methylene Butyrolactone Polymers from Itaconic Acid. *J. Polym. Sci. Part A: Polym. Chem.* **2017**, *55*, 2730–2737.

10) **Michaudel, Q.**; Kottisch, V.; Fors, B. P. Cationic Polymerization: From Photoinitiation to Photocontrol. *Angew. Chem., Int. Ed.* **2017**, *56*, 9670–9679.

9) Kottisch, V.;† **Michaudel, Q.**;† Fors, B. P. Cationic Polymerization of Vinyl Ethers Controlled by Visible Light. *J. Am. Chem. Soc.* **2016**, *138*, 15535–15538.

8) **Michaudel, Q.**; Fors, B. P. Storing Information at the Molecular Level: Efficient Synthesis of "Barcode" Polymers. *Chem* **2016**, *1*, 23–24.

7) Dao, H.; Li, C.;† **Michaudel, Q.**;† Maxwell, B. D.; Baran, P. S. Direct Hydromethylation of Unactivated Olefins. *J. Am. Chem. Soc.* **2015**, *137*, 8046–8049.

6) Teufel, R.; Stull, F.; Meehan, M. J.; **Michaudel, Q.**; Dorrestein, P. C.; Palfey, B.; Moore, B. S. Biochemical Establishment and Characterization of EncM's Flavin-N5-Oxide Cofactor. *J. Am. Chem. Soc*. **2015**, *137*, 8078–8085.

5) Shaw, S. A.; Balasubramanian, B.; Bonacorsi, S.; Caceres Cortes, J.; Cao, K.; Chen, B-C.; Dai, J.; Decicco, C.; Goswami, A.; Guo, Z.; Hanson, R.; Humphreys, W. G.; Lam, P. Y. S.; Li, W.; Mathur, A.; Maxwell, B. D.; **Michaudel, Q.**; Peng, L.; Pudzianowski, A.; Qiu, F.; Su, S.; Sun, D.; Tymiak, A. A.; Vokits, B. P.; Wang, B.; Wexler, R.; Wu, D-R.; Zhang, Y.; Zhao, R.; Baran, P. S. Synthesis of Biologically Active Piperidine Metabolites of Clopidogrel: Determination of Structure and Analyte Development. *J. Org. Chem.* **2015**, *80*, 7019–7032.

4) **Michaudel, Q.**; Ishihara, Y.; Baran, P.S. Academia−Industry Symbiosis in Organic Chemistry. *Acc. Chem. Res.* **2015**, *48*, 712–721.

3) **Michaudel, Q.**; Journot, G.; Regueiro-Ren, A.; Goswami, A.; Guo, Z.; Tully, T. P.; Zou, L.;

Ramabhadran, R. O.; Houk, K. N.; Baran, P. S. Improving Physical Properties *via* C–H Oxidation: Chemical and Enzymatic Approaches. *Angew. Chem., Int. Ed.* **2014**, *53*, 12091–12096.

2) Teufel, R.;† Miyanaga, A.;† **Michaudel, Q.**;† Stull, F.;† Louie, G.; Noel, J. P.; Baran, P. S.; Palfey, B.; Moore, B. S. Flavin-Mediated Dual Oxidation Controls an Enzymatic Favorskii-Type Rearrangement. *Nature* **2013**, *503*, 552–556.

1) **Michaudel, Q.**;† Thevenet, D.;† Baran, P. S. Intermolecular Ritter-Type C–H Amination of Unactivated sp^3 Carbons. *J. Am. Chem. Soc.* **2012**, *134*, 2547–2550.

SELECTED PRESENTATIONS

- Modern Organic Reactions for Precise (Macro)molecular Synthesis, **University of Southern Mississippi**, School of Polymer Science and Engineering; Hattiesburg, MS, November 2022
- Modern Organic Reactions for Precise (Macro)molecular Synthesis, **The Georgia Institute of Technology,** School of Chemistry and Biochemistry; Atlanta, GA, October 2022
- Modern Organic Reactions for Precise (Macro)molecular Synthesis, **Cornell University**, Department of Chemistry and Chemical Biology; Ithaca, NY, September 2022
- Modern Organic Reactions for Precise (Macro)molecular Synthesis, **University of Rochester**, Department of Chemistry; Rochester, NY, September 2022
- Sulfur(VI) Fluoride Exchange (SuFEx): A Versatile Click Reaction for the Synthesis of Macromolecules and Drug-like Compounds, **ACS National Meeting Fall 2022**, Chicago, IL, August 2022, *Invited oral presentation*
- Stereocontrolled Olefin Metathesis: A Unique Handle to Tune the Properties of Soft Materials, **ACS National Meeting Fall 2022**, Chicago, IL, August 2022, *Invited oral presentation*
- Stereocontrolled Polymerizations Based on Olefin Metathesis, **ACS Mena 2022**, Doha, Qatar, May 2022, *Invited oral presentation*
- Precise Synthesis of Soft Materials with Tailored Properties via SuFEx Click Chemistry and Olefin Metathesis, **Polymer Technology Industrial Consortium Meeting**, Texas A&M University, College Station, TX, April 2022, *Invited oral presentation*
- Stereoretentive Olefin Metathesis Coupled with External Stimuli to Access Stereodefined Conjugated Polymers and Polyalkenamers, **ACS National Meeting Spring 2022**, San Diego, CA, March 2022, *Contributed oral presentation*
- Ring-Opening Metathesis Polymerization of Aryne-derived Monomers for the Preparation of Lewis-Basic Polymers with Unique Properties, **ACS National Meeting Spring 2022**, San Diego, CA, March 2022, *Contributed oral presentation*
- Synthesis of *ß*-Ketosulfonamides via Photochemical 1,3-Rearrangement of Alkenyl Sulfamates Accessed Through SuFEx Click Chemistry, **ACS National Meeting Fall 2021**, Atlanta, GA, August 2021, *Contributed oral presentation (virtual)*.
- Stereodefined Conjugated Polymers via Stereoretentive Olefin Metathesis, **ACS National Meeting Fall 2021**, Atlanta, GA, August 2021, *Contributed oral presentation (virtual)*.
- Modern Organic Reactions as Tools to Access Unique Polymer Architectures, **ACS POLY/PMSE Student Chapter, Macromolecular Summer Seminar Series**, University of Florida, Gainesville, Fl, May, 2021, *Invited oral presentation (virtual)*

- Sulfur(VI) Fluoride Exchange Click Reaction As A Tool To Synthesize Previously Inaccessible Polymers, **ACS National Meeting Spring 2021**, San Antonio, TX, April 2021, *Contributed oral presentation (virtual)*.
- Modern Organic Reactions as Tools to Access Dynamic Networks and Stimuli-Responsive Polymers, **Trinity University**, San Antonio, TX, October 2020, *Invited oral presentation (virtual).*
- Modern Organic Reactions as Tools to Access Dynamic Networks and Stimuli-Responsive Polymers, **ACS National Meeting Fall 2020**, San Francisco, CA, August 2020, *Invited oral presentation (cancelled because of the COVID-19 pandemic).*
- **Gordon Research Conference**, Newport, RI, July 2020, *Research poster (cancelled because of the COVID-19 pandemic)*.
- Synthesis of Dynamic Networks via Click Chemistry, **ACS National Meeting Spring 2020**, Philadelphia, PA, March 2020, *Contributed oral presentation (cancelled because of the COVID-19 pandemic).*
- Modern Organic Reactions as Tools to Access Unique Polymer Architectures, **Polymers for Advanced Technologies (PAT) Conference**, College Station, TX, August 2019, *Contributed oral presentation.*
- Modern Organic Reactions as Tools to Access Unique Polymer Architectures, **GPC Conference**, New Orleans, LA, July 2019, *Invited oral presentation.*
- Modern Organic Reactions as Tools to Access Unique Polymer Architectures, **Gordon Research Conference**, Mount Holyoke, MA, June 2019, *Research poster*.
- Accessing Various Polymer Architectures With the Simple Flip of a Switch, **ACS National Meeting Fall 2018**, Boston, MA, August 2018. *Contributed oral presentation.*
- Photocontrolled Cationic Polymerization, **Gordon Research Conference**, Mount Holyoke, MA, June 2017, *Research poster*.
- Synthesis of New Polymers from Biorenewable Itaconic Acid, **ACS National Meeting Fall 2016**, Philadelphia, PA, August 2016. *Contributed oral presentation.*
- Oxidation of Complex Molecules: From Nature to the Flask, **SciFinder® Future Leaders in Chemistry**, Columbus, OH, August 2015. *Research poster*.
- P. S. C–O, C–N, and C–C Bond Formation in Complex Molecules: From Nature to the Flask, **Bristol-Myers Squibb Chemistry Award Symposium**, Lawrenceville, NJ, April 2015. *Invited oral presentation.*

RESEARCH SUPPORT

External Funding

NSF CAREER (**$713,874**): CAREER: Precise Synthesis of Polymers with Tunable Properties Through Stereocontrolled Olefin Metathesis 2023–2028

Department of Energy, Office of Science **($1,014,866**): Understanding Structure, Phase Behavior, and Physical Properties of Polysulfamides and Polysulfamates using Simulations, Experiments, and Machine Learning (PI: Arthi Jayaraman, 3 investigators) 2022–2025

FACE Foundation **($20,000**): Synthesis of Azo Compounds via 'Electroclick' Chemistry: A Green Approach Toward Therapeutics and Stimuli-Responsive Polymers (PI, with Julien Vantourout) 2022–2024

NIH MIRA R35 for Early Stage Investigators (**$1.813,140**): Primary Amines as Versatile Precursors for the Synthesis of Bioactive Molecules and

Macromolecular Drug Carriers. 2020–2025

American Chemical Society Petroleum Research Fund, Doctoral New Investigator (**$110,000**): Conductive Polymers with a Twist: New Tools for the Synthesis and Study of Distorted Graphene Nanoribbons 2019–2022

Welch Foundation Grant (**$195,000**): C–C Cross Couplings Enabled by SuFEx Click Chemistry 2019–2022

TEACHING EXPERIENCE

CHEM 227: Organic Chemistry I
Texas A&M University, Department of Chemistry
CHEM 231: Techniques of Organic Chemistry
Texas A&M University, Department of Chemistry
CHEM 446: Organic Chemistry III
Texas A&M University, Department of Chemistry
CHEM 610: Organic Reactions
Texas A&M University, Department of Chemistry, graduate level

MENTORING

Graduate Students: Avinash Choudhury (2022–present); Srutashini Das (2022–present); Mary Yenca (2022–present); Jake Nicholson (2021–present); An Tran (2021–present); Deepta Chattapadhyay (2020–present); Katarzyna (Kate) Doktor (2019–present), Samuel Kempel (2019–present), Ting-Wei (Tim) Hsu (2019–present), Sarah Hancock (2018–present), Jiun-Wei (Alec) Wu (2018–present)

Master Students: Alexander Holter (2020–2022); Ryan Kulow (2018–2020)

Undergraduate Students: Caroline Gallo (TAMU ’25, 2022–present), Emma Trussell (TAMU ’23, 2022–present), Rachel Wynn (NSF-REU, Southeastern Oklahoma State University’24, summer 2022), Antoine Gravet (Chimie ParisTech-Université PSL’23, France, 2022), Cate Conway (TAMU ’23, 2022–present), Rene Garcia (TAMU ’24, 2022–present), Spencer Li (TAMU ’22, 2022–present), Leonardo Lizardi-Rodriguez (NSF-REU, University of Puerto Rico Recinto Rio Piedras ’23, summer 2021) Alyssa Felix Thayne (**NSF GRFP 2022**, TAMU ’22, 2021–present), Alexander Fine (TAMU ’23, 2020–present), Alexandria Arboleda (TAMU ’21, 2020–2021), Cortlan Parrish (TAMU ’21, 2020–2021), Patrick Williams (TAMU ’21, 2020–2021), Luma Al-Mahbobi (TAMU ’22, 2019–2020), Sara Valdez (TAMU ’20, 2019–2020), Eric Comstock (TAMU ’22, 2019–2020), Jinquan Suo (Jilin University’20, China, 2019–2020), Crystal Chi (NSF-REU, Texas A&M Kingsville ’20, summer 2019), Guadalupe Florencio (TAMU ’20, 2019), Yali Wu (TAMU ’20, 2019), Randinu Pulukkody (TAMU ’18, 2018–2019), Katie Stawiasz (Cornell University ’18, 2016–2018)

SERVICE ACTIVITIES

Advising

Faculty advisor, Texas A&M University ACS POLY/PMSE student chapter 2018–present
Faculty advisor, Aggie ACHIEVE program 2019–present

Reviewing

Referee: *J. Am. Chem. Soc., Angew. Chem. Int. Ed., Chem. Sci., Nat. Commun., Chem, ACS Macro Lett., Macromolecules, J. Polym. Sci., Polym. Chem., ACS Catal., Org. Lett., J. Org. Chem., ChemPhotoChem, Macromol. Rapid Commun.*	2015–present

Conference service

Judge, Doolittle award, PMSE, ACS San Diego	2022
Session chair, ORGN Photochemistry, ACS Atlanta	2021
Session chair, PMSE Young Investigator Symposium, ACS San Diego	2019
Poster judge, POLY Sci-Mix, ACS Boston	2018
Session chair, POLY General Topics, ACS Boston	2018

AFFILIATIONS

Member, ACS, Division of Organic Chemistry	2016–present
Member, ACS, Division of Polymer Chemistry	2016–present
Member, ACS, Division of Polymeric Materials: Science and Engineering	2019–present