Konstantin Bukhryakov

Ph.D., Associate Professor
Department of Chemistry and Biochemistry
Florida International University
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Professional Experience

Florida International University (FIU), Miami, USA **2024 – present**

Associate Professor
Catalysis, organic, organometallic, and polymer chemistry.

Florida International University (FIU), Miami, USA **2018 – 2024**

Assistant Professor
Catalysis, organic, organometallic, and polymer chemistry.

Massachusetts Institute of Technology (MIT), Cambridge, USA **2015 – 2018**

Postdoctoral Associate with Prof. Richard R. Schrock (Nobel Prize 2005)
Organometallic chemistry and catalysis.

King Abdullah University of Science and Technology (KAUST), Thuwal, Saudi Arabia **2012 – 2015**

Postdoctoral Research Fellow with Prof. Valentin Rodionov
Catalysis, organic, and polymer chemistry.

Chemical Diversity Research Institute (CDI), Moscow, Russia **2006 – 2012**

Senior Research Scientist
Contract R&D, synthesis of new compounds for pharma clients (including Merck, Eli Lilly, Novartis, Abbott), hit to lead development, lead optimization, target-based library design, and parallel synthesis.

Education

Lomonosov Moscow State University (MSU), Moscow, Russia **2008 – 2012**

Ph.D. in organic chemistry under the guidance of Prof. Alexander Kurkin
Thesis: Synthesis of enantiomerically pure imidazopyridine and pyridopyrazine derivatives with a chiral substituent at the nitrogen.

Tyumen State University, Tyumen, Russia **2001 – 2006**

B.S. in organic chemistry under the guidance of Prof. Mikhail Belyatsky
Thesis: Intramolecular cyclization in the Meerwein and Wittig reactions.

Funded Research

Total $3,168,237

6. DOE, Office of Environmental Management: Savannah River Nuclear Solutions, Award #663595, Alternating copolymers for simultaneous anion and cation capture for sensing applications, $350,000. PI: **K. Bukhryakov**, Co-PI: K. Kavallieratos, 2024 – 2025.
5. NIH MIRA R35GM150902-01: Vanadium-mediated carbon isotope exchange. $1,783,017. PI: **K. Bukhryakov**, 2023 – 2028.
4. DOE, Office of Environmental Management: Savannah River Nuclear Solutions, Award #603084, Alternating copolymers for simultaneous anion and cation capture for sensing applications, $320,000. PI: **K. Bukhryakov**, Co-PI: K. Kavallieratos, 2023 – 2024.
3. NSF CHE-2212944, LEAPS-MPS: Mechanism of Iron-Catalyzed Olefin Metathesis, $249,567. PI: **K. Bukhryakov**, 2022 – 2024.
2. DOE, Interrogating f-element-ligand Interactions by X-ray Absorption Spectroscopy (Infrastructure Proposal), $355,653. PI: C. Dares, Co-PIs: **K. Bukhryakov**, A. Mebel, R. Raptis, K. Kavallieratos. 2021.
1. ACS PRF# 61343-DNI3: Iron-based catalysts for olefin metathesis, $110,000. PI: **K. V. Bukhryakov**, 2020 – 2022.

Publications

FIU:

37. S. Hernandez, D. S. Belov, V. Krivovicheva, S. Senthil, and **K. V. Bukhryakov**,* Decreasing the Bond Order Between Vanadium and Oxo Ligand to Form 3d Schrock Carbynes, *J. Am. Chem. Soc.*, **2024**, *146*, 18905–18909. DOI: 10.1021/jacs.4c07588
36. C. M. B. Bolding, T. K. Haraniya, G. L. Parker, W. B. Martin, V. G. Desyatkin, L. Heck, **K. V. Bukhryakov**, V. O. Rodionov,* Edge Functionalization of Bulk γ-Graphyne Facilitates Mechanical Exfoliation and Modulates the Mode of Sheet Stacking, *J. Am. Chem. Soc.*, **2024**, *146*, 12889−12894. DOI: 10.1021/jacs.4c02064
35. C. Acosta, D. S. Belov, A. Lamur, C. L. Brantley, X. Solans-Monfort, K. L. Rue, G. Christou and **K. V. Bukhryakov**,* Mononuclear Four-Coordinate Bis-Fluoride Bis-NHC Complexes of Chromium(II), Iron(II), and Cobalt(II), *Inorg. Chem.*, **2023**, *62*, 18108–18115. DOI: 10.1021/acs.inorgchem.3c02442
34. W. S. Farrell, G. Tejeda, X. Solans-Monfort, É. Sá, **K. V. Bukhryakov**, Ring-Opening Metathesis Polymerization with Vanadium(V) Alkylidenes: Survey of Initiators, Density-Functional Theory Calculations, and Functional Group Tolerance, *J. Organomet. Chem.*, **2023**, *996*, 122753. DOI: 10.1016/j.jorganchem.2023.122753
33. D. S. Belov, C. Acosta, M. Garcia-Molina, K. L. Rue, X. Solans-Monfort, and **K. V. Bukhryakov**,* Synthesis and Activity of Vanadium Oxo NHC Alkylidenes. Remarkable Preference for Degenerate Metathesis and Application for Carbon Isotope Exchange, *Organometallics*, **2022**, *41*, 2897-2902. DOI: 10.1021/acs.organomet.2c00465
32. G. Tejeda, D. S. Belov, D. A. Fenoll, K. L. Rue, C. Tsay, X. Solans-Monfort, and **K. V. Bukhryakov**,* Vanadium Imido NHC Complexes for the Ring-Closing Olefin Metathesis Reactions, *Organometallics*, **2022**, *41*, 361-365. DOI: 10.1021/acs.organomet.2c00013
31. O. Alkhamis, J. Canoura, **K. V. Bukhryakov**, A. Tarifa, A. P. DeCaprio, and Y. Xiao,* DNA Aptamer-Cyanine Complexes as Generic Colorimetric Small-Molecule Sensors, *Angew. Chem., Int. Ed.,* **2021**, *60*, 2-12. DOI: 10.1002/anie.202112305
30. D. S. Belov, D. A. Fenoll, I. Chakraborty, X. Solans-Monfort, and **K. V. Bukhryakov**,* Synthesis of Vanadium Oxo Alkylidene Complex and its Reactivity in Ring-Closing Olefin Metathesis Reactions, *Organometallics*, **2021**, *40*, 2939-2944. DOI: 10.1021/acs.organomet.1c00425
29. D. S. Belov, G. Tejeda, and **K. V. Bukhryakov**,* Olefin Metathesis by First-Row Transition Metals, (invited review), *ChemPlusChem*, **2021**, *86*, 924-937. DOI: 10.1002/cplu.202100192
28. D. S. Belov, G. Tejeda, C. Tsay, and **K. V. Bukhryakov**,* Ring-Closing Olefin Metathesis Catalyzed by Well-Defined Vanadium Alkylidene Complexes, *Chem. Eur. J.*, **2021**, *27*, 4578-4582. DOI: 10.1002/chem.202005438
27. D. S. Belov, L. Mathivathanan, M. J. Beazley, W. B. Martin, and **K. V. Bukhryakov**,* Stereospecific Ring-Opening Metathesis Polymerization of Norbornene Catalyzed by Iron Complexes, *Angew. Chem., Int. Ed.*, **2021**, *60*, 2934-2938. DOI: 10.1002/anie.202011150. Highlighted in ChemistryViews.
26. S. Chuprun, C. M. Acosta, L. Mathivathanan, and **K. V. Bukhryakov**,* Molybdenum Benzylidyne Complexes for Olefin Metathesis Reactions, *Organometallics,* **2020**, *39*, 3453-3457. DOI: 10.1021/acs.organomet.0c00491

Postdoctoral research (MIT):

25. F. Zhai, **K. V. Bukhryakov**, R. R. Schrock, A. Hoveyda, C. Tsay, and P. Muller, Syntheses of Molybdenum Oxo Benzylidene Complexes, *J. Am. Chem. Soc.*, **2018**, *140*, 13609-13613. DOI: 10.1021/jacs.8b09616
24. **K. V. Bukhryakov**, R. R. Schrock, A. Hoveyda, C. Tsay, and P. Muller, Syntheses of Molybdenum Oxo Alkylidene Complexes Through Addition of Water to an Alkylidyne Complex, *J. Am. Chem. Soc.*, **2018**, *140*, 2797-2800. DOI: 10.1021/jacs.8b00499
23. **K. V. Bukhryakov**, S. VenkatRamani, C. Tsay, A. Hoveyda, and R. R. Schrock, Syntheses of Molybdenum Adamantylimido and *t*-Butylimido Alkylidene Chloride Complexes Using HCl and Diphenylmethylphosphine, *Organometallics,* **2017**, *36,* 4208-4214. DOI: 10.1021/acs.organomet.7b00647
22. P. E. Sues, **K. V. Bukhryakov**, and R. R. Schrock, Evaluation of Several Molybdenum and Ruthenium Catalysts for the Matathesis Homocoupling of 3-Methyl-1-Butene, *Helv. Chim. Acta,* **2017**, *100*, e1700181. DOI: 10.1002/hlca.201700181
21. **K. V. Bukhryakov**, R. R. Schrock, A. Hoveyda, P. Muller, and J. Becker, Synthesis of 2,6-Hexatertiarybutylterphenyl Derivatives, 2,6-(2,4,6-*t*-$Bu_3C_6H_2)_2C_6H_3X$, where X = I, Li, OH, SH, N_3, or NH_2, *Org. Lett.*, **2017**, *19*, 2607-2609. DOI: 10.1021/acs.orglett.7b01062
20. J. K. Lam, C. Zhu, **K. V. Bukhryakov**, P. Muller, A. Hoveyda, and R. R. Schrock, Synthesis and Evaluation of Molybdenum and Tungsten Monoaryloxide Halide Alkylidene Complexes for Z-Selective Cross-Metathesis of Cyclooctene and *Z*-1,2-Dichloroethylene, *J. Am. Chem. Soc.*, **2016**, *138*, 15774-15783. DOI: 10.1021/jacs.6b10499
19. P. E. Sues, J. M. John, **K. V. Bukhryakov**, R. R. Schrock, and P. Muller, Molybdenum and Tungsten Alkylidene Comlexes That Contain a 2-Pyridyl-substituted Phenoxide Ligand, *Organometallics,* **2016**, *35*, 3587-3593. DOI: 10.1021/acs.organomet.6b00644

Postdoctoral research (KAUST):

18. T. Chen, B. Chen, **K. V. Bukhryakov**, and V. O. Rodionov, Thiols Make for Better Catalyst: Au Nanoparticles Supported on Functional SBA-15 for Catalysis of Ullmann-type Homocouplings, *Chem. Commun.*, **2017**, *53*, 11638-11641. DOI: 10.1039/C7CC06146C
17. K. B. Vu, T. Chen, S. Almahdali, **K. V. Bukhryakov**, and V. O. Rodionov, Hollow Nanospheres with Fluorous Interiors for Transport of Molecular Oxygen in Water, *ChemistrySelect*, **2016**, *1*, 3306-3309. DOI: 10.1002/slct.201600602
16. **K. V. Bukhryakov**, V. G. Desyatkin, and V. O. Rodionov, Cooperative Organocatalysis of Mukaiyama–Type Aldol Reactions by Thioureas and Nitro Compounds, *Chem. Commun.*, **2016**, *52*, 7576-7579. DOI: 10.1039/C6CC01984F
15. C. Mugemana, **K. V. Bukhryakov**, O. Bertrand, K. B. Vu, J.-F. Gohy, N. Hadjichristidis, V. O. Rodionov, Ring opening metathesis polymerization of cyclopentene using a ruthenium catalyst confined by a branched polymer architecture, *Polym. Chem.*, **2016**, *7*, 2923-2928. DOI: 10.1039/C6PY00389C
14. **K. V. Bukhryakov**, C. Mugemana, K. B. Vu, V. O. Rodionov, Palladium-N-Heterocyclic Carbene Pre-Catalyst Site-Isolated in the Core of a Star Polymer, *Org. Lett.*, **2015**, *17*, 4826-4829. DOI: 10.1021/acs.orglett.5b02388
Selected by the Editorial Board of Synfacts for its important insights, *Synfacts*, **2016**, *12*, 99
DOI: 10.1055/s-0035-1561082
13. K. B. Vu, **K. V. Bukhryakov**, D. H. Anjum, V. O. Rodionov, Surface-Bound Ligands Modulate Chemoselectivity and Activity of a Bimetallic Nanoparticle Catalyst, *ACS Catal.*, **2015**, *5*, 2529-2533 (K. B. Vu and **K. V. Bukhryakov** contributed equally). DOI: 10.1021/acscatal.5b00262
12. **K. V. Bukhryakov**, S. Almahdali, and V. O. Rodionov, Amplification of Chirality through Self-Replication of Micellar Aggregates in Water, *Langmuir*, **2015**, *31*, 2931-2935. DOI: 10.1021/la504984j
11. B. Chen, **K. V. Bukhryakov**, R. Sougrat, and V. Rodionov, An Enzyme-Inspired Functional Surfactant for Aerobic Oxidation of Activated Alcohols to Aldehydes in Water, *ACS Catal.*, **2015**, *5*, 1313-1317. DOI: 10.1021/cs5020018
10. **K. V. Bukhryakov**, V. G. Desyatkin, J. P. O'Shea, S. R. Almahdali, V. Solovyeva, and V. Rodionov, Cooperative Catalysis With Block Copolymer Micelles: A Combinatorial Approach, *ACS Comb. Sci.*, **2015**, *17*, 76-80.
DOI: 10.1021/co5001713. (**ACS Editors' Choice** article, Jan. 13, 2015 and **highlighted in *C&EN***, Jan. 19, 2015).
9. C. Mugemana, B. Chen, **K. V. Bukhryakov**, and V. Rodionov, Star Block-Copolymers: Enzyme-Inspired Catalysts for Oxidation of Alcohols in Water, *Chem. Commun.*, **2014**, *50*, 7862-7865. DOI: 10.1039/C4CC03370A

Ph.D. research (MSU and CDI):

8. **K. V. Bukhryakov**, A. V. Kurkin, M. A. Yurovskaya, Synthesis of Imidazo[4,5-b]pyridines with a Chiral Substituent at the Nitrogen Atom and their Conversion to Piperazine Derivatives, *Chem. Heterocycl. Compd. (N.Y.)*, **2012**, *48*, 773-784. DOI: 10.1007/s10593-012-1056-5
7. **K. V. Bukhryakov**, A. V. Kurkin, and M. A. Yurovskaya, Synthetic Approaches to Imidazo[4,5-*b*]pyridine Derivatives (review), *Chem. Heterocycl. Compd. (N.Y.)*, **2011**, *47*, 533-557. DOI: 10.1007/s10593-011-0797-x
6. A. V. Kurkin, **K. V. Bukhryakov**, M. A. Yurovskaya, Synthesis of 1,2,3,4-tetrahydro[2,3-*b*]pyrazindiones with a Chiral Substituent at the Nitrogen, *Chem. Heterocycl. Compd. (N.Y.)*, **2009**, *45*, 188-193. DOI: 10.1007/s10593-009-0249-z
5. I. Konstantinov, **K. Bukhryakov**, Y. Gezentsvey, and M. Krasavin, Practical Method for Parallel Synthesis of Diversely Substituted 1-Phenylpiperazines, *Lett. Org. Chem.*, **2011**, *8*, 628-630. DOI: 10.2174/157017811799304386
4. C. Hulme, **K. Bukhryakov** et al., Multi-Component Reactions in Drug Discovery, *Adv. Exp. Med. Bio*, **2011**, *699*, 88-89. DOI: 10.1007/978-1-4419-7270-5_3
3. M. Krasavin, R. Karapetian, I. Konstantinov, Y. Gezentsvey, **K. Bukhryakov**, E. Godovykh, O. Soldatkina, Y. Lavrovsky, A.V. Sosnov, A.A. Gakh, Discovery and Potency Optimization of 2-Amino-5-arylmethyl-1,3-thiazole Derivatives as Potential Therapeutic Agents for Prostate Cancer, *Arch. Pharm.*, **2009**, *342*, 420-427. DOI: 10.1002/ardp.200800201
2. M. Krasavin, S. Shkavrov, V. Parchinsky, and **K. Bukhryakov**, Imidazo[1,2-*a*]quinoxalines Accessed via Two Sequential Isocyanide-Based Multicomponent Reactions, *J. Org. Chem.*, **2009**, *74*, 2627-2629. DOI: 10.1021/jo900050
1. M. Krasavin, S. Tsirulnikov, M. Nikulnikov, Y. Sandulenko, and **K. Bukhryakov**, *tert*-Butyl Isocyanide Revisited as a Convertible Reagent in the Groebke–Blackburn Reaction, *Tetrahedron Lett.*, **2008**, *49*, 7318–7321.
DOI: 10.1016/j.tetlet.2008.10.046

Patents

3. **K. V. Bukhryakov**, D. S. Belov, Vanadium Alkylidene Complex, Synthesis and use Thereof, **2024**, US. Patent App. 18/584,272.
2. **K. V. Bukhryakov**, Carbon isotope exchange mediated by vanadium complexes, **2024**, U.S. Patent App. 18/199,565.
1. R. R. Schrock, **K. V. Bukhryakov**, A. Hoveyda, Molybdenum Oxo Alkylidene Compounds, Methods of Making the Same and Use Thereof in Metathesis Reactions, **2020**, US Patent App. 16/966,369.

Awards

4. FIU Top Scholar Award, 2024.
3. FIU College of Arts, Sciences & Education (CASE) Faculty Recognition Award for Research, 2023.
2. Vebleo Fellow, 2022.

1. Thieme Chemistry Journals Award, 2022.

Presentations (FIU):

31. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Oral Presentation, 30th International Conference on Organometallic Chemistry, Agra, India, July 2024.
30. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Seminar at University of Texas San Antonio (UTSA), San Antonio TX, November 2023.
29. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Seminar at University of Texas Dallas (UTD), Dallas TX, September 2023.
28. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Short Talk at Organometallics Gordon Research Conference, Newport, RI, July 2023.
27. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Keynote Lecture, International Symposium of Olefin Metathesis and Related Chemistry (ISOM-XXIV), Bergen, Norway, July 2023.
26. K. Bukhryakov, Vanadium Alkylidenes for Olefin Metathesis, Invited speaker at FAME, ACS regional meeting, Palm Harbor FL, June 2022.
25. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Seminar at University of California, Irvine (UCI), Irvine CA, May 2023.
24. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Seminar at University of California, Los Angeles (UCLA), Los Angeles CA, May 2023.
23. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Seminar at University of Southern California (USC), Los Angeles CA, May 2023.
22. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Seminar at Florida State University (FSU), Tallahassee FL, April 2023.
21. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Seminar at University of New Mexico (UNM), Albuquerque NM, March 2023.
20. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Seminar at the Ohio State University (OSU), Columbus OH, March 2023.
19. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Invited speaker at Schrock Symposium at University of California, Riverside (UCR), Riverside, CA, January 2023.
18. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Seminar at University of South Carolina, Columbia SC, November 2022.
17. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Seminar at Kansas State University (KSU), Manhattan KS, October 2022.
16. **K. Bukhryakov**, Vanadium-based Olefin Metathesis, Seminar at University of Florida (UF), Gainesville FL, October 2022.
15. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Seminar at University of Miami (UM), Miami FL, October 2022.
14. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Seminar at North Carolina State University (NCSU), Raleigh NC, October 2022.
13. **K. Bukhryakov**, First-row Transition Metals for Olefin Metathesis, Seminar at University of Texas at El Paso (UTEP), El Paso TX, September 2022.
12. **K. Bukhryakov**, Vanadium Alkylidenes for Olefin Metathesis, Seminar at University of Pennsylvania (UPenn), Philadelphia PA, September 2022.
11. **K. Bukhryakov**, Olefin Metathesis Catalyzed by Vanadium Complexes, 6th International Conference on Catalysis and Chemical Engineering, San Francisco CA, February 2022.
10. **K. Bukhryakov**, Catalysis by Earth-abundant Transition Metals, Vebleo Webinar on Materials Science, Engineering and Technology, January 2022.
9. **K. Bukhryakov**, Well-defined Vanadium Alkylidenes for Olefin Metathesis, Pacifichem-2021, Honolulu HI, December 2021.
8. **K. Bukhryakov**, Catalysis by Earth-abundant Transition Metals, RASA meeting, St. Petersburg FL, November 2021.
7. **K. Bukhryakov**, Toward Iron-Catalyzed Olefin Metathesis, mini-FAME, ACS regional meeting, Gainesville FL, September 2021.
6. **K. Bukhryakov**, Olefin Metathesis Catalyzed by First-Row Metals, ACS meeting Fall 2021, Atlanta GA, August 2021.
5. **K. Bukhryakov**, Homogeneous Catalysis for Olefin Metathesis, Seminar during Summer Internship Program for high school students, Florida International University, Miami FL, August 2021.
4. **K. Bukhryakov**, Alkylidene Complexes: Synthesis and Application, Seminar at Florida Institute of Technology, Melbourne FL, March 2021.
3. **K. Bukhryakov**, Homogeneous Catalysis by Organometallic Complexes, Seminar at Catalysis Webinar Series organized by American Vacuum Society, University of Central Florida Chapter, Orlando FL, June 2020.
2. **K. Bukhryakov**, Alkylidene Complexes: Synthesis and Application, Seminar at University of Central Florida (UCF),

Orlando FL, January 2020.

1. **K. Bukhryakov**, Alkylidene Complexes: Synthesis and Application, Seminar at Florida Memorial University (FMU), Miami FL, October 2019.

Professional Development

DOE EM MSIPP Achievement Workshop **2024**

August 6-7, 2024. Augusta, GA
The workshop is designed to enhance the collaboration between DOE and Minority Serving Institutions (MSI). Besides the discussion about funding opportunities at DOE for MSI, career opportunities at DOE for graduate students were presented.

DOE EM MSIPP Achievement Workshop **2023**

August 1-2, 2023. Augusta, GA
The workshop is designed to enhance the collaboration between DOE and Minority Serving Institutions (MSI). Besides the discussion about funding opportunities at DOE for MSI, career opportunities at DOE for graduate students were presented.

NASA Professional Development Workshop **2022**

June 15-16, 2022. Baltimore, MD
The workshop focuses on assisting and engaging early career faculty in developing effective planning skills to achieve their career goals and pursue academic leadership at their institution.

ACS New Faculty Workshop **2019**

June 28-30, 2019. Pasadena, CA
The workshop primarily focuses on developing and implementing evidence-based teaching practices in the classroom. Additional topics discussed include integrating teaching and research, student mentoring, effective time management, laboratory safety, and grantsmanship/funding.

NSF Early Career workshop **2019**

May 19-21, 2019. Alexandria, VA
The workshop gave participant feedback on research ideas and draft proposals, helped plan educational and outreach activities. Also, it enabled the participant to network with peers, interact with successful NSF awardees, and talk with many NSF CHE staff members and program managers from other federal agencies (DOE and NIH).

MIT Educational Technology Teaching Certificate Program, MIT **2017**

Teaching course designed to learn how to use technology to enhance both student learning experience and assessment. This course is level two of the MIT Kaufman Teaching Certificate Program.

MIT Kaufman Teaching Certificate Program, MIT **2016**

Teaching course designed to educate and provide future career support for individuals who are passionate about teaching and mentoring.

Courses Taught

CHM 5251	Organometallic Chemistry	FIU	Graduate	Fall 2024
CHM 2210	Organic Chemistry I	FIU	Undergraduate	Fall 2023
CHM 2211	Organic Chemistry II	FIU	Undergraduate	Spring 2023
CHM 5251	Organometallic Chemistry	FIU	Graduate	Fall 2022
CHM 2211	Organic Chemistry II	FIU	Undergraduate	Spring 2022
CHM 2210	Organic Chemistry I	FIU	Undergraduate	Fall 2021
CHM 2210	Organic Chemistry I	FIU	Undergraduate	Spring 2021
CHM 5251	Organometallic Chemistry	FIU	Graduate	Fall 2020
CHM 2210	Organic Chemistry I	FIU	Undergraduate	Fall 2019
CHM 2210	Organic Chemistry I	FIU	Undergraduate	Spring 2019