Gojko Lalic

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EDUCATION

Ph.D., Organic Chemistry, Harvard University 1998–2004
Thesis: *Enantioselective metal-catalyzed thioester aldol and Mannich reactions*
Advisor: Professor Matthew D. Shair

B.S., Chemistry, University of Belgrade 1993–1998
Advisor: Professor Radomir N. Saicic

RESEARCH EXPERIENCE

Assistant Professor 2008–present
Department of Chemistry, University of Washington
Developing new transformations for organic synthesis

Postdoctoral Research Fellow 2006–2008
Department of Chemistry & Chemical Biology, Harvard University
Enantioselective synthesis of platensimycin core
Advisor: Professor E.J. Corey

Postdoctoral Research Fellow 2004–2006
Department of Chemistry, University of California at Berkeley
Substitution reactions of monomeric zirconium imido and zirconium oxo complexes
Advisor: Robert G. Bergman

Graduate Research Assistant 1998–2004
Department of Chemistry & Chemical Biology, Harvard University
Enantioselective metal-catalyzed thioester aldol and Mannich reactions
Advisor: Prof. Matthew D. Shair

Undergraduate Research Assistant Summer 1997
Department of Chemistry, Texas A&M University
Selective functionalization of saturated hydrocarbons
Advisor: Professor Derek H. R. Barton

HONORS AND AWARDS

2013–2018	CAREER Award, National Science Foundation
2002–2003	Eli Lilly Predoctoral Fellowship, Harvard University
2002	Certificate of Distinction in Teaching, Harvard University
1999–2000	Eli Lilly Predoctoral Fellowship, Harvard University

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1998 Vojislav Stojanovic Award for Outstanding Academic Achievement, University of Belgrade, Serbia

1995–1998 Fellowship for Talented Students in Sciences and Arts, Ministry of Science, Serbia

PUBLICATIONS *(all peer-reviewed)*

30. Cox, N.; Whittaker, A. M.; Lalic, G. "Copper-catalyzed semi-reduction of alkynes." *Organic Syntheses* (invited manuscript in review).
29. Dang, H.; Whittaker, A. M.; Lalic, G. "Catalytic Activation of a Single C-F Bond in Trifluoromethyl Arenes." *Chem. Sci.* Advanced Article DOI: 10.1039/C5SC03415A.
28. Suess, A. M.; Uehling, M. R.; Kaminsky, W.; Lalic, G. "Mechanism of Copper-Catalyzed Hydroalkylation of Alkynes: An Unexpected Role of Dinuclear Copper Complexes." *J. Am. Chem. Soc.* **2015**, *137*, 7747–7753. DOI: 10.1021/jacs.5b03086
27. Mailig, M.; Rucker, R. P.; Lalic, G. "Practical Catalytic Method for Synthesis of Sterically Hindered Anilines." *Chem. Comm.* **2015**, *51*, 11048–11051. DOI: 10.1039/c5cc03565a
26. Uehling, M. R.; Suess, A. M.; Lalic, G. "Copper-Catalyzed Hydroalkylation of Terminal Alkynes." *J. Am. Chem. Soc.* **2015**, *137*, 1424–1427. DOI: 10.1021/ja5124368
25. Uehling, M. R.; Rucker, R. P.; Lalic, G. "Catalytic Anti-Markovnikov Hydrobromination of Alkynes." *J. Am. Chem. Soc.* **2014**, *136*, 8799–8803. DOI: 10.1021/ja503944n
24. Dang, H.; Mailig, M.; Lalic, G. "Mild Copper-Catalyzed Fluorination of Alkyl Triflates with Potassium Fluoride." *Angew. Chem., Int. Ed.* **2014**, *53*, 6473–6476. DOI: 10.1002/anie.201402238
23. Cox, N.; Dang, H.; Whittaker, A. M.; Lalic, G. "NHC-copper hydrides as chemoselective reducing agents: catalytic reduction of alkynes, alkyl triflates, and alkyl halides." *Tetrahedron* **2014**, *70* (27-28), 4219–4231. (Invited article) DOI: 10.1016/j.tet.2014.04.004
22. Dang, H.; Cox, N.; Lalic, G. "Copper-Catalyzed Reduction of Alkyl Triflates and Iodides: An Efficient Method for the Deoxygenation of Primary and Secondary Alcohols." *Angew. Chem., Int. Ed.* **2014**, *53*, 752–756. DOI: 10.1002/anie.201307697
21. Cox, N.; Uehling, M. R.; Haelsig, K. T.; Lalic, G. "Catalytic Asymmetric Synthesis of Cyclic Ethers Containing an α-Tetrasubstituted Stereocenter." *Angew. Chem., Int. Ed.* **2013**, *52*, 4878–4882. (Highlighted in SYNFACTS) DOI: 10.1002/anie.201300174
20. Whittaker, A. M.; Lalic, G. "Monophasic Catalytic System for the Selective Semireduction of Alkynes." *Org. Lett.* **2013**, *15*, 1112–1116. (Highlighted in SYNFACTS) DOI: 10.1021/ol4001679
19. Rucker, R. P.; Lalic, G. "Copper-Catalyzed Electrophilic Amination of Organoboron Compounds." *Synlett* **2013**, *24* (3), 269–274. (Invited SYPACTS article). DOI: 10.1055/s-0032-1317744
18. Rucker, R. P.; Whittaker, A. M.; Dang, H.; Lalic, G. "Synthesis of Tertiary Alkyl Amines from Terminal Alkenes: Copper-Catalyzed Amination of Alkyl Boranes." *J. Am. Chem. Soc.* **2012**, *134*, 6571–6574. (Highlighted in SYFACTS) DOI: 10.1021/ja3023829

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17. Rucker, R. P.; Whittaker, A. M.; Dang, H.; Lalic, G. "Synthesis of Hindered Anilines: Copper-Catalyzed Electrophilic Amination of Aryl Boronic Esters." *Angew. Chem., Int. Ed.* **2012**, *51*, 3953–3956. (Highlighted in SYNFACTS) DOI: 10.1002/anie.201200480

16. Uehling, M. R.; Marionni, S. T.; and Lalic, G. "Asymmetric Synthesis of Trisubstituted Allenes: Copper-Catalyzed Alkylation and Arylation of Propargylic Phosphates." *Org. Lett.* **2012**, *14*, 362–365. DOI: 10.1021/ol2031119

15. Whittaker, A. M.; Rucker, R. P.; Lalic, G. "Catalytic S_N2'-Selective Substitution of Allylic Chlorides with Arylboronic Esters." *Org. Lett.* **2010**, *12*, 3216–3218. (Highlighted in SYNFACTS) DOI: 10.1021/ol101171v

Prior to the University of Washington

14. Lalic, G.; Corey, E. J. "Enantioselective Rhodium(I)-Triethylamine Catalyzed Addition of Potassium Isopropenyltrifluoroborate to Enones." *Tetrahedron Lett.* **2008**, *49* (33), 4894-4896. DOI: 10.1016/j.tetlet.2008.05.147

13. Lalic, G.; Krinsky, J. L.; Bergman, R. G. "The Scope and the Mechanism of S_N2' Substitution Reactions of a Monomeric Imidozirconium Complex With Allylic Electrophiles." *J. Am. Chem. Soc.* **2008**, *130*, 4459–4465. DOI: 10.1021/ja7106096

12. Lalic, G.; Corey, E. J. "An Effective Enantioselective Route to the Platensimycin Core." *Org. Lett.* **2007**, *9*, 4921–4923. DOI: 10.1021/ol702323s

11. Fox, R. J.; Lalic, G.; Bergman, R. G. "Regio- and Stereospecific Formation of Protected Allylic Alcohols via Zirconium-Mediated S_N2' Substitution of Allylic Chlorides." *J. Am. Chem. Soc.* **2007**, *129*, 14144–14145. DOI: 10.1021/ja075967i

10. Lalic, G.; Blum, S. A.; Bergman, R. G. "Zirconium-Mediated S_N2' Substitution of Allylic Ethers: Regio- and Stereospecific Formation of Protected Allylic Amines." *J. Am. Chem. Soc.* **2005**, *127*, 16790–16791. DOI: 10.1021/ja056132f

9. Magdziak, D.; Lalic, G.; Lee, H.-M.; Fortner, K. C.; Aloise, A. D.; Shair, M. D. "Catalytic Enantioselective Thioester Aldol Reactions That are Compatible With Protic Functional Groups." *J. Am. Chem. Soc.* **2005**, *127*, 7284–7285. DOI: 10.1021/ja051759j

8. Xu, K.; Lalic, G.; Sheehan, S. M.; Shair, M. D. "Dynamic Kinetic Resolution During a Cascade Reaction on Substrates with Chiral All-Carbon Quaternary Centers." *Angew. Chem., Int. Ed.* **2005**, *44*, 2259–2261. DOI: 10.1002/anie.200462039

7. Lalic, G.; Aloise, A. D.; Shair, M. D. "An Exceptionally Mild Thioester Aldol Reaction Inspired by Polyketide Biosynthesis." *J. Am. Chem. Soc.* **2003**, *125*, 2852–2853. DOI: 10.1021/ja029452x

6. Burke, M. D.; Lalic, G. "Teaching Target-Oriented and Diversity-Oriented Organic Synthesis at Harvard University." *Chem. Biol.* **2002**, *9*, 535–541. DOI: 10.1016/S1074-5521(02)00143-6

5. Korbel, G. A.; Lalic, G.; Shair, M. D. "Reaction Microarrays: A Method for Rapidly Determining the Enantiomeric Excess of Thousands of Samples." *J. Am. Chem. Soc.* **2001**, *123*, 361–362. DOI: 10.1021/ja0034747

4. Lalic, G.; Petrovski, Z.; Galonic, D.; Matovic, R.; Saicic, R. N. "Alkylation of Carbonyl Compounds in the $TiCl_4$-promoted Reaction of Trimethylsilyl Enol Ethers with Epoxides." *Tetrahedron* **2001**, *57* (3), 583–591. DOI: 10.1016/S0040-4020(00)01028-0

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3. Sheehan, S. M.; Lalic, G.; Chen, J. S.; Shair, M. D. "A Highly Efficient and Convergent Reaction for the Synthesis of Bridgehead Enone-Containing Polycyclic Ring Systems." *Angew. Chem., Int. Ed.* **2000**, *39*, 2714-2715. DOI: 10.1002/1521-3773(20000804)39:15<2714::AID-ANIE2714>3.0.CO;2-1

2. Lalic, G.; Petrovski, Z.; Galonic, D.; Matovic, R.; Saicic, R. N. "Alkylation of Carbonyl Compounds in the $TiCl_4$-promoted Reaction of Trimethylsilyl Enol Ethers with Ethylene Oxide." *Tetrahedron Lett.* **2000**, *41* (5), 763–766. DOI: 10.1016/S0040-4039(99)02149-8

1. Barton, D. H. R.; Lalic, G.; Smith, J. A. "The Selective Functionalization of Saturated Hydrocarbons. Part 42. Further Studies in Selective Phenylselenation." *Tetrahedron* **1998**, *54* (9), 1725–1734. DOI: 10.1016/S0040-4020(97)10397-0

PATENTS

1. Method for Analysis of Reaction Products. Matthew D. Shair; Gregory A. Korbel; Gojko Lalic, U.S. Patent Appl. 09/778,708, February 7, 2001.

INVITED LECTURES

24. Heterocycles Compounds Gordon Research Conference, Salve Regina University, Newport, RI, June 2016 (*scheduled).*
23. Johnson & Johnson Pharmaceutical Research & Development, San Diego, CA, June 18, 2015.
22. Gilead Sciences, Foster City, CA, May 12, 2015.
21. AbbVie, Worcester, MA, April 30, 2015.
20. Department of Chemistry, University of Illinois–Urbana-Champaign, IL, November 13, 2014.
19. Organic Reactions & Processes Gordon Research Conference, Bryant University, Smithfield, RI, July 18, 2014.
18. Organometallic Chemistry Gordon Research Conference, Salve Regina University, Newport, RI, July 8, 2014
17. Department of Chemistry, University of California–Berkeley, Berkeley, CA, April 8, 2014.
16. Department of Chemistry, Duke University, Durham, NC, September 20, 2013.
15. Department of Chemistry, University of North Carolina–Chapel Hill, Chapel Hill, NC, September 19, 2013.
15. The Scripps Research Institute, La Jolla, CA, June 5, 2013.
14. Department of Chemistry, University of California–Irvine, Irvine, CA, June 4, 2013.
13. Department of Chemistry, Princeton University, Princeton, NJ, May 28, 2013.
12. Department of Chemistry, Stanford University, Stanford, CA, May 14, 2013.
11. Department of Chemistry, Northwestern University, Evanston, IL, April 12, 2013.
10. Department of Chemistry, University of Illinois–Chicago, Chicago, IL, April 11, 2013.
9. Department of Chemistry & Biochemistry, University of Texas–Austin, Austin, TX, March 27, 2013.

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8. Department of Chemistry, University of Houston, Houston, TX, March 26, 2013.
7. Department of Chemistry, Boston College, Chestnut Hill, MA, February 26, 2013.
6. Department of Chemistry, University of Chicago, Chicago, IL, November 30, 2012.
5. Department of Chemistry, Bowling Green State University, Bowling Green, OH, September 20, 2012.
4. Department of Chemistry, Wayne State University, Detroit, MI, September 19, 2012.
3. Department of Chemistry & Biochemistry, The Ohio State University, Columbus, OH, September 18, 2012.
2. Department of Chemistry & Biochemistry, University of Delaware, Newark, DE, September 5, 2012.
1. Department of Chemistry, Yale University, New Haven, CT, September 4, 2012.

GRANTS

Awarded

National Science Foundation (PI) 05/2013-05/2018 $650,000
CAREER: Catalytic Methods for Hydrofunctionalization of Unsaturated Compounds

University of Washington (PI) 06/2012-06/2013 $37,605
Royalty Research Fund
Catalytic Anti-Markovnikov Hydroamination and Hydrocyanation of Alkenes

Not Awarded

2014 NSF CHE 1464510 *Transition metal catalyzed reactions of organofluorine compounds*

2014 NIH 1R01GM112849-01 *Transition metal catalyzed reactions of organofluorine compounds*

2010 NIH 1R01GM097307-01 *Copper-catalyzed reactions of organoboron compounds*

2011 NIH 1R01GM099816-01 *Copper-Catalyzed Functionalization of Organoboron Compounds*

2011 NIH 1R01GM102421-01 New *Organic Reactions Catalyzed by Late Transition Metal Complexes*

PROFESSIONAL ACTIVITIES

Journal Reviews

Angewandte Chemie
Journal of the American Chemical Society
Nature Chemistry
Organic Letters
Chemical Science
ACS Catalysis
Chemical Communications
Journal of Organic Chemistry

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