

Curriculum Vitae

Liming Zhang

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Education

- 1998-2003 Ph. D. in Medicinal Chemistry/Organic Chemistry, University of Michigan
(Professor Masato Koreeda)
- 1996-1998 M. S. in Organic Chemistry, University of Alabama (Professor Michael P. Cava)
- 1993-1996 M. S. in Organic/Organometallic Chemistry, Nankai University, PRC
(Professor Zhengzhi Zhang)
- 1989-1993 B. S. in Organic Chemistry, Nanchang University, PRC (Professor Xingsheng Li)

Professional Experience

- 2005- Assistant Professor, Department of Chemistry, University of Nevada, Reno
- 2003-2005 Postdoctoral Fellow with Professor Sergey A. Kozmin, University of Chicago

Awards and Honors

- 2008 Mousel-Feltner Award for Excellence in Research and/or Creative Activity (UNR)
- 2008 NSF CAREER Award
- 2008 Amgen Young Investigator's Award
- 2007 Thieme Journal Award
- 2007 Unrestricted gift by Merck & Co, Inc.
- 2007 Ralph E. Powe Junior Faculty Enhancement Award
- 2002 Eli Lilly Fellowship, University of Michigan
- 2001 Pfizer Fellowship, University of Michigan
- 1996 Dean's Merit Scholarship, University of Alabama
- 1996 "Excellent Thesis" Award, Nankai University, PRC

Teaching Experience

- 2007 Instructor, Chem342 and Chem740, University of Nevada, Reno
- 2006 Instructor, Chem740, University of Nevada, Reno
- 2005 Instructor, Chem743, University of Nevada, Reno
- 1998-2002 Graduate Instructor, Chem216, Chem211 and Chem312, University of Michigan
- 1998-1996 Teaching Assistant, Chem237 and Chem338, University of Alabama

Departmental Committee

- 2005 member, Safety and Services, Graduate Recruiting and Admission
- 2006 member, Scholarship, Building Committee; Chem Club Advisor
- 2007 member, Safety and Services, Scholarship, Publicity and Alumni Relationship; Chem Club Advisor; Library Coordinator

Current and Past Students/Postdocs

- | | | |
|--------------------|---------------|---|
| Guozhu Zhang | 09/06-present | 3 rd year graduate |
| Sansan Cao | 09/07-present | undergraduate |
| Dr. Yu Peng | 07/08-present | postdoc |
| Dr. Li Cui | 09/08-present | postdoc |
| Dr. Shaozhong Wang | 09/05-08/06 | potdoc, currently an Assoc. Prof. at Nanjing Univ., China |

Dr. Guotao Li	08/06-03/08	postdoc
Dr. Xiaogen Huang	10/06-10/07	postdoc
Meng Yu	09/05-08/08	graduated with a M. S. degree
James Markus Bradley	06/06-08/06	REU student
Kathryn Galloway	06/07-08/07	REU student

Publications

-- Independent Work (2005-)

- 33 Peng, Yu; Yu, Meng; Zhang, L. "Au-Catalyzed Synthesis of 5,6-Dihydro-8*H*-indolizin-7-ones from *N*-(Pent-2-en-4-ynyl)- β -Lactams" *Org. Lett.* **2008**, ASAP.
- 32 Yu, Meng; Wang, S.; Zhang, G.; Zhang, L. "Gold-catalyzed efficient preparation of linear α -haloenones from propargylic acetates" *Tetrahedron* to be accepted.
- 31 Huang, X.; Zhang, L. "Unusual Au(III)-Catalyzed Dimerization of Benzoxazol-2-yloxy Enynes: Formation of Substituted 1,5-Cyclooctadienes" *J. Organometallic Chem.* **2008**, ASAP.
- 30 Zhang, L.; Li, G. "Dichloro(pyridine-2-carboxylato)-gold(III)" *The Electronic Encyclopedia of Reagents for Organic Synthesis (e-EROS)* (invited review) <http://mrw.interscience.wiley.com/eros/>. Accepted.
- 29 Zhang, G.; Zhang, L. "Au-Containing All-Carbon 1,3-Dipoles: Generation and [3+2] Annulation" *J. Am. Chem. Soc.* **2008**, *130*, 12598-12599.
- 28 Li, G.; Zhang, L. "Au(I)-Catalyzed Efficient Synthesis of Functionalized Bicyclo[3.2.0]heptanes" *J. Am. Chem. Soc.* **2008**, *130*, 6944-6945.
- 27 Li, G.; Zhang, G.; Zhang, L. "Au-Catalyzed Synthesis of (1*Z*, 3*E*)-2-Pivaloxy-1,3-Dienes from Propargylic Pivalates" *J. Am. Chem. Soc.* **2008**, *130*, 3740-3741.
- 26 Zhang, G.; Huang, X.; Li, G.; Zhang, L. "Au-Containing All-Carbon 1,4-Dipoles: Generation and [4+2] Annulation in the Formation of Carbo-/Heterocycles" *J. Am. Chem. Soc.* **2008**, *130*, 1814-1815.
- 25 Li, G.; Huang, X.; Zhang, L. "Pt-Catalyzed Reaction of *N*-(2-Alkynylphenyl)lactams: Formation of Cyclic Ketone-Fused Substituted Indoles" *Angew. Chem. Int. Ed.* **2008**, *47*, 346-349.
- 24 Zhang, L.; Li, G. "Cu(II) Bromide" *The Electronic Encyclopedia of Reagents for Organic Synthesis (e-EROS)* (review, first update) <http://mrw.interscience.wiley.com/eros/>.
- 23 Huang, X.; Zhang, L. "AuCl-Catalyzed Synthesis of Benzyl-Protected Substituted Phenols: A Formal [3+3] Approach" *Org. Lett.* **2007**, *9*, 4627-4630.
- 22 Shi, F.-Q.; Li, X.; Xia, Y.; Zhang, L. Yu, Z.-X.* "A DFT Study of the Mechanisms of "In Water" Au(I)-Catalyzed Tandem [3,3] Rearrangement/Nazarov Reaction/[1,2]-Hydrogen Shift of Enynyl Acetates: A Proton-Transport Catalysis Strategy in the Water-Catalyzed [1,2]-Hydrogen Shift" *J. Am. Chem. Soc.* **2007**, 15503-15512.
- 21 Zhang, G.; Catalano, V. J.; Zhang, L. "PtCl₂-Catalyzed Rapid Access to Tetracyclic 2,3-Indoline-fused Cyclopentenes: Reactivity Divergent from Cationic Au(I) Catalysis and Synthetic Potential" *J. Am. Chem. Soc.* **2007**, *129*, 11358-11359.
- 20 Li, G.; Zhang, L. "Gold-Catalyzed Intramolecular Redox Reaction of Sulfinyl Alkynes: Efficient Generation of α -Oxo Gold Carbenoids and Application in Insertion into R-CO Bonds" *Angew. Chem. Int. Ed.* **2007**, *46*, 5156-5159.
- 19 Huang, X.; Zhang, L. "Two-Step Formal [3+2] Cycloaddition of Enones/Enals and Allenyl MOM Ether: Gold-Catalyzed Highly Diastereoselective Synthesis of Cyclopentanone Enol Ether Containing an All-Carbon Quaternary Center" *J. Am. Chem. Soc.* **2007**, *129*, 6398-6399.
- 18 Yu, M.; Zhang, G.; Zhang, L. "Gold-Catalyzed Efficient Preparation of Linear α -Iodoenones from Propargylic Acetates" *Org. Lett.* **2007**, 2147-2150.
- 17 Yu, M.; Li, G.; Wang, S.; Zhang, L. "Gold-Catalyzed Efficient Formation of α , β -Unsaturated Ketones from Propargylic Acetates" *Adv. Synth & Catal.* **2007**, *349*, 871-875.

- 16 Wang, S.; Zhang, L. "A Gold-Catalyzed Unique Cycloisomerization of 1,5-Enynes: Efficient Formation of 1-Carboxycyclohexa-1,4-dienes and Carboxyarenes" *J. Am. Chem. Soc.* **2006**, *128*, 14274-14275.
- 15 Wang, S.; Zhang, L. "Gold-Catalyzed Efficient Formation of Alkenyl Enol Esters/Carbonates from Trimethylsilylmethyl-Substituted Propargyl Esters/Carbonates" *Org. Lett.* **2006**, *8*, 4585-4587.
- 14 Wang, S.; Zhang, L.; "A Highly Efficient Preparative Method of α -Ylidene- β -Diketones via Au^{III}-Catalyzed Acyl Migration of Propargylic Esters" *J. Am. Chem. Soc.* **2006**, *128*, 8414-8415.
- 13 Zhang, L.; Wang, S. "Efficient Synthesis of Cyclopentenones from Enynyl Acetates via Tandem Au(I)-Catalyzed 3,3-Rearrangement and the Nazarov Reaction" *J. Am. Chem. Soc.* **2006**, *128*, 1442-1443.
- * This communication was the #13 most-cited article published in 2006 in the Journal of the American Chemical Society as reported by Thomson ISI's Web of Science (by 07/027/2008) (http://pubs.acs.org/journals/jacsat/promo/most/most_cited/2006.html).*
- 12 Zhang, L. "Tandem Au-catalyzed 3,3-Rearrangement-[2+2] Cycloadditions of Propargylic Esters: Expeditious Access to Highly Functionalized 2,3-Indoline-fused Cyclobutanes" *J. Am. Chem. Soc.* **2005**, *127*, 16804-16805.
- Postdoctoral Work (University of Chicago, 2003-2005)**
- 11 Zhang, L.; Sun, J.; Kozmin, S. A. "Gold and Platinum Catalysis of Enyne Cycloisomerization" *Adv. Synth. Cat.* **2006**, *348*, 2271-2296.
- 10 Zhang, L.; Sun, J.; Kozmin, S. A. "Bronsted Acid-Promoted Cyclizations of Siloxy Alkynes with Unactivated Arenes, Alkenes and Alkynes" *Tetrahedron* **2006**, *62*, 11371-11380.
- 9 Sun, J.; Conley, M. P.; Zhang, L.; Kozmin, S. A. "Au- and Pt-Catalyzed Cycloisomerizations of 1,5-Enynes to Cyclohexadienes with a Broad Alkyne Scope" *J. Am. Chem. Soc.* **2006**, *128*, 9705-9710.
- 8 Zhang, L.; Kozmin, S. A. "Gold-Catalyzed Assembly of Heterobicyclic Systems" *J. Am. Chem. Soc.* **2005**, *127*, 6962-6963.
- * This communication was the #8 most-cited article in 2005 published in the Journal of the American Chemical Society as reported by Thomson ISI's Web of Science (by 09/03/2008) (http://pubs.acs.org/journals/jacsat/promo/most/most_cited/2005.html).*
- 7 Zhang, L.; Kozmin, S. A. "Gold-Catalyzed Cycloisomerizations of Siloxy Enynes to Cyclohexadienes" *J. Am. Chem. Soc.* **2004**, *126*, 11806-11807.
- 6 Zhang, L.; Kozmin, S. A. "Brønsted Acid-Promoted Cyclizations of Siloxyalkynes with Arenes and Alkenes" *J. Am. Chem. Soc.* **2004**, *126*, 10204-10205.
- Graduate Work (Ph. D., University of Michigan, 1998-2003)**
- 5 Zhang, L.; Koreeda, M. "Radical Deoxygenation of Hydroxyl Groups via Phosphites" *J. Am. Chem. Soc.* **2004**, *126*, 13190-13191.
- 4 Zhang, L.; Koreeda, M. "Total Synthesis of (+)-Acanthodoral by the Use of a Pd-Catalyzed Metal-ene Reaction and a Nonreductive 5-exo-Acyl Radical Cyclization" *Org. Lett.* **2004**, *6*, 537-540.
- 3 Zhang, L.; Koreeda, M. "Stereo-controlled Synthesis of Kelsoene by the Use of a Homo-Favorskii Rearrangement Reaction" *Org. Lett.* **2002**, *4*, 3755-3758.
- 2 Koreeda, M.; Wang, Y.; Zhang, L. "6-exo-Spiro (Alkoxy-carbonylamino)methyl Radical Cyclization: Highly Regio- and Stereo- Selective Synthesis of (-)-Sibirine" *Org. Lett.* **2002**, *4*, 3329-3332.
- Graduate Work (M. S., University of Alabama, 1996-1998)**
- 1 Zhang, L.; Cava, M. P.; Rogers, R. D.; Rogers, L. M. "Synthesis of a Wakayin Model Compound: Oxidative Formation of a New Pyrrole Ring in the Indol-3-yl-Indoloquinone System" *Tetrahedron Lett.* **1998**, *39*, 7677-7678.

Invited Talks

- 15 "Opening a 'Golden Gate' for Organic Synthesis" *Washington University, St. Louis, Nov. 20, 2008.*
- 14 'Au/Pt-Catalyzed Organic Reactions' *University of Arkansas, Fayetteville, AS, Nov. 10, 2008*

- 13 "Au-Catalyzed Reactions of Propargylic Esters" *International Symposium on Organic Synthesis and Drug Development 2008 (ISOSDD08), Nanjing, China, Oct. 15, 2008.*
- 12 "Au/Pt Catalysis: New Reactivities and Efficient Synthetic methods" *Shanghai Institute of Organic Chemistry, Shanghai, China, Oct. 14, 2008.*
- 11 "Au-Catalyzed Cycloaddition Reactions" 3rd *International Forum on Homogeneous Catalysis and First China-Spain Bilateral Symposium on Catalysis, Shanghai, China, Sept. 25, 2008*
- 10 "Au/Pt Catalysis: New Reactivities and Efficient Synthetic methods" *Bristol-Myers Squibb at Wallingford, Aug. 27, 2008.*
- 9 "Au/Pt Catalysis: New Reactivities and Efficient Synthetic methods" *University of Connecticut, Aug. 26, 2008*
- 8 "Au/Pt Catalysis: New Reactivities and Efficient Synthetic methods" *Eli Lilly & Co. Aug. 4, 2008*
- 7 "Au-Catalyzed Cycloaddition Reactions" *GRC Organic Reactions and Processes, Bryant University, Rhode Island, July 14, 2008.*
- 6 "Au/Pt Catalysis: New Reactivities and Efficient Synthetic methods" *University of California, Los Angeles, Jan. 31, 2008.*
- 5 "Au/Pt Catalysis: New Reactivities and Efficient Synthetic methods" *California State University, Fullerton, Oct. 18, 2007.*
- 4 "Au/Pt Catalysis: New Reactivities and Efficient Synthetic methods" *Merck, Rahway, Oct. 10, 2007.*
- 3 "Au/Pt Catalysis: New Reactivities and Efficient Synthetic methods" *University of Delaware, Newark, Oct. 9, 2007.*
- 2 "Au-Catalyzed Reactions of Propargylic Esters: Tandem Processes toward Functional Structures" *Peking University, P. R. China, March 24, 2006*
- 1 "Au-Catalyzed Reactions of Propargylic Esters: Tandem Processes toward Functional Structures" *Nankai University, P. R. China, March 22, 2006*

Posters

- 10 Zhang, G.; Li, G.; Zhang, L. "Au-Catalyzed Cycloaddition Reactions" *Poster at GRC Natural Products, Tilton High School, New Hampshire, July 20-24, 2008.*
- 9 Zhang, G.; Li, G.; Zhang, L. "Au-Catalyzed Cycloaddition Reactions" *Poster at GRC Organic Reactions and Processes, Bryant University, Rhode Island, July 13-17, 2008.*
- 8 Huang, X.; Li, G.; Zhang, L. "Au/Pt-Catalyzed Reactions of Functionalized Allenes" *Poster at GRC Organic Reactions and Processes, Bryant University, Rhode Island, July, 2007.*
- 7 Zhang, L. "Exploring Au Catalysis: Development of Efficient Synthetic Methods" *Presentation at the 232nd ACS National Regional Meeting, San Francisco, Sept. 2006*
- 6 Yu, M.; Wang, S.; Zhang, L. "Au-catalyzed Formation of Enones from Propargylic Acetates" *Poster at the 232nd ACS National Regional Meeting, San Francisco, Sept. 2006*
- 5 Song, M.; Bradley, J. M.; Zhang, L. "Tandem Au-catalyzed 3,3-rearrangement-[3 + 2] cycloaddition of propargylic 3-indoleacetates" *Poster at the 232nd ACS National Regional Meeting, San Francisco, Sept. 2006*
- 4 Wang, S.; Zhang, L. "A Highly Efficient Preparative Method of α -Ylidene- β -Diketones via Au^{III}-Catalyzed Acyl Migration of Propargylic Esters" *Poster at the 61st ACS Northwest Regional Meeting, Reno, Nevada, July 26th, 2006*
- 3 Zhang, L. "Au-Catalyzed Reactions of Propargylic Esters: Tandem Processes toward Functional Structures" *Presentation at the 231th ACS National Meeting in Atlanta, March, 2006*
- 2 Zhang, L., Koreeda, M. "Total Synthesis of Acanthodoral by Acyl Radical Cyclization and Wolff Rearrangement" *Poster at the 38th National Organic Symposium in Bloomington, IN, June, 2003.*
- 1 Zhang, L., Koreeda, M. "Enantioselective Synthesis of (+)-Kelsoene" *Poster at ACS meeting in New Orleans, March, 2003.*

Current and Pending Grant Support

- 5 'Career: Au Catalysis: From Versatile Synthetic Methods to Complex Natural Structure', 07/2007, NSF, \$500,000, awarded.
- 4 'Au/Pt Catalysis in the Synthesis of Elaborate N-Heterocycles: Methodology Development and Total Synthesis of Alkaloids', 06/2007, NIH(NIGMS), submitted.
- 3 Ralph E. Powe Junior Faculty Enhancement Award, 08/2007-07/2008, \$10,000.
- 2 'Novel Au Catalysis: Development of Highly Efficient Synthetic Methods', 02/2007, Junior Faculty Research Grant, UNR, \$15,000.
- 1 'Phosphoranyl Radical-Mediated Deoxygenative Transformation of Carbonyl Groups', 05/2005, ACS Petroleum Research Fund, \$35,000, PRF#43905-G1.