

Victor Shang-Yi Lin

PROFESSIONAL BIOGRAPHY

(Revised on Aug. 22, 2004)

Office 1710 Gilman Hall
Department of Chemistry
Iowa State University
Ames, IA 50011

Phone: (515) 294-3135
FAX: (515) 294-0105
E-mail: vsylin@iastate.edu

EDUCATION

University of Pennsylvania, Philadelphia, PA 19104
Ph.D. Chemistry (1996)
Research Advisor: Professor Michael J. Therien
Dissertation Title: Synthesis, Spectroscopy, Electrochemistry, and Photophysics of Highly Conjugated, Ethynyl-Bridged Porphyrin Systems.

National Chung-Hsing University, Taichung, Taiwan
B.S. Chemistry (1990)

EXPERIENCE

Assistant Professor

Department of Chemistry (Primary appointment, 08/99 – Present)
Department of Biomedical Sciences (Courtesy Appointment, 08/03 – Present)
Iowa State University, Ames IA 50011

Synthesis of biocompatible nanomaterial-based sensory and controlled release drug delivery systems to study intercellular chemical communications, such as protein-ligand recognition involved many neurochemical communications and cellular adhesion events.

Scientist

Chemical and Biological Sciences Program

U.S. DOE Ames Laboratory, Ames IA 50011 (10/02 – Present)

Design of multifunctionalized heterogeneous catalysts with unique nanoporous structures and high selectivity for many industrially important reactions.

Postdoctoral Fellow

Department of Chemistry, Biochemistry, and Molecular Biology
The Scripps Research Institute, La Jolla, CA 92037 (10/96 – 7/99)

Porous silicon-based optical interferometric biosensor: The detection of various biomolecules is achieved by attaching the appropriate recognition element to the inner pores of an oxidized, optically flat porous silicon film. A change in the refractive index of the porous silicon layer resulting from a molecular binding event creates a large wavelength shift in the Fabry-Perot fringes in the visible light reflection spectrum. Such a direct detection mechanism provides a novel biosensoral design for molecular recognition.

Research Advisor - Professor M. Reza Ghadiri

Graduate Research Associate

Department of Chemistry

University of Pennsylvania, Philadelphia, PA 19104 (9/91 - 9/96)

Design and synthesis of various ethyne- and butadiyne-bridged porphyrin arrays fabricated via metal-mediated cross-coupling methodologies. Photophysical, spectroscopic, and electrochemical studies of these supramolecular systems to investigate energy and electron transfer mechanisms between porphyrin chromophores.

Research Advisor - Professor Michael J. Therien

Victor Shang-Yi Lin

Undergraduate Research Associate

Department of Chemistry

National Chung-Hsing University, Taiwan (07/87 – 06/90)

Synthesis and Stereochemistry of $M[O(CH_2)_n PPh_2]R_2$ (M=Ti, Zr, Hf; R=Halide, Alkoxide, or Alkyl) for homogeneous catalysis on olefin polymerization.

Research Advisor - Professor Han-Mou Gau

AWARDS AND HONORS

The LAS Award for Early Achievement in Research/Artistic Creativity, Iowa State University (2004)

National Science Foundation (NSF) CAREER Award (2003-2008)

The Skagg Institute Postdoctoral Fellowship (1997-1999)

John C. Miller Award for Most Outstanding Doctoral Dissertation in Chemistry, University of Pennsylvania, Philadelphia, PA 19104, USA (1996)

Excellence Award in Chemistry Division, National College Competition of Science, Department of Education, Taipei, Taiwan (1988)

TEACHING RESPONSIBILITY

Semester	Course Code	Course Title	Credit	No. of Students Enrolled
Spring 2004	CHEM 178	General Chemistry	3	458
Fall 2003	CHEM 601	Special Topic in Inorganic Chemistry: Nanostructured Materials for Catalysis, Electronics, Separation, and Biomedical Applications	1	15
Fall 2003	CHEM 501	Inorganic Preparations	2	1
Fall 2003	CHEM 401L	Inorganic Laboratory	2	15
Spring 2003	CHEM 178	General Chemistry	3	413
Spring 2003	CHEM 178L	General Chemistry Laboratory	1	389
Fall 2002	CHEM 178	General Chemistry	3	204
Fall 2002	CHEM 178L	General Chemistry Laboratory	1	109
Fall 2002	CHEM 501	Inorganic Preparations	2	2
Fall 2002	CHEM 401L	Inorganic Laboratory	2	8
Spring 2002	CHEM 178	General Chemistry	3	463
Spring 2002	CHEM 178L	General Chemistry Laboratory	1	423
Fall 2001	CHEM 500	Advanced Inorganic Chemistry	2	17

Victor Shang-Yi Lin

Fall 2001	CHEM 501	Inorganic Preparations	2	6
Fall 2001	CHEM 401L	Inorganic Laboratory	2	16
Spring 2001	CHEM178M	General Chemistry	3	18
Fall 2000	CHEM 401L	Inorganic Laboratory	2	13
Fall 2000	CHEM 500	Advanced Inorganic Chemistry	2	20
Fall 2000	CHEM 501	Inorganic Preparations	2	6
Spring 2000	CHEM 601D	Special Topic in Inorganic Chemistry: Principles and Practice of Heterogeneous Catalysis and Chemosensors Design	2	14
Fall 1999	CHEM 401L	Inorganic Laboratory	2	12
Fall 1999	CHEM 501	Inorganic Preparations	2	6

UNIVERSITY SERVICE

CHEMISTRY DEPARTMENT

Member, Graduate Recruiting and Admission Committee
August, 1999-August, 2002; August, 2003-Present

Member, Undergraduate Affairs Committee
August, 2002- August, 2003

Member, Ad Hoc Graduate Program Committee
October, 2003-December, 2003

Member, Graduate Curriculum Committee
August, 1999-May, 2000

Member, Graduate Affairs Committee
August, 2000-June, 2001

Member, Long-Range Planning for Faculty Hires Committee
July, 2000-October, 2000.

ADVISED AND CURRENT POSTDOCTORAL ASSOCIATES

1. Dr. Jianguo Huang, Nanjing University, P. R. China
August, 1999-October, 2000
(Currently a staff scientist at RIKEN national research laboratory, Wako, Japan)
2. Dr. Ming-Yuan Shao, National Chung-Hsing University, Taiwan
August, 1999-June, 2000.
(Currently a research scientist at Academia Sinica, Taipei, Taiwan)

Victor Shang-Yi Lin

ADVISED AND CURRENT GRADUATE STUDENTS

1. Cheng-Yu Lai, M.S.-National Chung-Hsing University, Taiwan
November, 1999-present (Ph.D student)
2. Seong Huh, M.S.- Yonsei University, South Korea
August, 2000-present (Ph.D student)
3. Brian G. Trewyn, B.S.- University of Wisconsin, LaCrosse, Wisconsin
November, 2000-present (Ph.D student)
4. Daniela R. Radu, B.S.- Babes-Bolyai University, Romania
November, 2000-present (Ph.D student)
5. Hung-Ting Chen, M.S.- National Taiwan University, Taiwan
November, 2001-present (Ph.D student)
6. Jennifer Nieweg, B.S.- Truman State University, Kirksville, Missouri
November, 2001-present (Ph.D student)
7. Supratim Giri, M.S. – Indian Institute of Technology, Kanpur, India
November, 2002-present (Ph.D student)
8. Nihal J. Kaissieh, B.S. – Gardner-Webb University, Boiling Springs, NC
November, 2002-present (Ph.D student)
9. Kale Swainston, B.S. – Utah State University, Logan, UT
January, 2003-present (Ph.D student)
10. Kasey Strosahl, B.A. – Simpson College, Indianola, IA
November, 2003-present (Ph.D student)
11. Nikola Knezevic, M.S. – University of Belgrade, Belgrade, Yugoslavia
April, 2004-present (Ph.D student)

ADVISED AND CURRENT UNDERGRADUATE STUDENTS

1. Christine Rowley – Dept. of Biochemistry, Biophysics, and Molecular Biology, Iowa State University
May, 2001-December, 2001
B.S. 2002; Medical School, University of Iowa, IA.
2. Matthew D. Tobelmann – Department of Chemical Engineering, Iowa State University
August, 2002-December, 2002
B.S. 2004 (Honors); Graduate School, Chem. Eng. Dept., University of Wisconsin, Madison, WI.
3. Chad M. Whitman – Department of Chemistry, Iowa State University
August, 2003-August, 2004
B.S. 2004 (Honors); Graduate School, Department of Chemistry, Stanford University, CA

Victor Shang-Yi Lin

4. Michael P. Stellmaker – Department of Chemistry, Iowa State University
August, 2004-present

PROFESSIONAL AFFILIATIONS

American Chemical Society

American Association for Advancement of Science

Full member of “Sigma Xi, The Scientific Research Society”

Center for Catalysis, Iowa State University

Institute for Food Safety and Security (IFSS), Iowa State University

Center for Crops Utilization Research, Iowa State University

Iowa Biotechnology Byproducts Consortium, Iowa State University

Neuroscience Graduate Program, Iowa State University

Institute for Combinatorial Discovery, Iowa State University

PUBLICATIONS

Total Number of Citations of V.S.-Y. Lin’s publications = 598[§]

§ Number obtained from a SciFinder Scholar citation search on September 21, 2004.

PUBLICATIONS AT IOWA STATE UNIVERSITY (* Corresponding author)

1. “Molecular Recognition inside of Multi-functionalized Mesoporous Silicas: Towards Selective Fluorescence Detection of Dopamine and Glucosamine”, Victor S.-Y. Lin,* Cheng-Yu Lai, Jianguo Huang, Se-Ahn Song, and Shu Xu, *J. Am. Chem. Soc.*, **2001**, 123, 11510-11511.
2. “Oxidative Polymerization of 1,4-Diethynylbenzene into Highly Conjugated Oligo(phenylene butadiynylene) Polymer Within the Channels of Surface-functionalized Mesoporous Silica and Alumina Materials” Victor S.-Y. Lin,* Daniela R. Radu, Mi-Kyung Han, Weihua Deng, Shigeki Kuroki, Brent H. Shanks, and Marek Pruski. *J. Am. Chem. Soc.*, **2002**, 124, 9040-9041
3. “A Mesoporous Silica Nanosphere-Based Carrier System with Chemically Removable CdS Nanoparticle Caps for Stimuli Responsive Controlled Release of Neurotransmitters and Drug Molecules”, Cheng-Yu Lai, Dusan M. Jeftinija, Ksenija Jeftinija, Shu Xu, Srdija Jeftinija, and Victor S.-Y. Lin,* *J. Am. Chem. Soc.* **2003**, 125, 4451-4459.
4. “Tuning of Particle Morphology and Pore Properties in Mesoporous Silicas with Multiple Organic Functional Groups”, Seong Huh, Jerzy W. Wiench, Brian G. Trewyn, Seahn Song, Marek Pruski, and Victor S.-Y. Lin,* *Chem. Comm. (Cambridge, U.K.)*, **2003**, 18, 2364-2365.
5. “Organic Functionalization and Morphology Control of Mesoporous Silica Materials via a Co-condensation Synthesis Method”, Seong Huh, Jerzy W. Wiench, Ji-Chul Yoo, Marek Pruski, and Victor S.-Y. Lin,* *Chem. Mater.*, **2003**, 15, 4247-4256.

Victor Shang-Yi Lin

6. "Organosulfonic acid-functionalized mesoporous silicas for the esterification of fatty acid", Isa K. Mbaraka, Daniela R. Radu, Victor S.-Y. Lin, and Brent H. Shanks,* *J. Catalysis*, **2003**, *219*, 329-336.
7. "Controlling the Selectivity of Competitive Nitroaldol Condensation by Using a Bifunctionalized Mesoporous Silica Nanosphere-Based Catalytic System", Seong Huh, Hung-Ting Chen, Jerzy W. Wiench, Marek Pruski, and Victor S.-Y. Lin,* *J. Am. Chem. Soc.*, **2004**, *126*, 1010-1011.
8. "Gatekeeping Layer Effect: A Poly(lactic acid)-coated Mesoporous Silica Nanosphere-Based Fluorescence Sensor for Detection of Amino-Containing Neurotransmitters", Daniela R. Radu, Cheng-Yu Lai, Jerzy W. Wiench, Marek Pruski, and Victor S.-Y. Lin,* *J. Am. Chem. Soc.*, **2004**, *126*, 1640-1641.
9. "Encapsulation, Stabilization, and Release of BSA-FITC from Polyanhydride Microspheres", Amy S. Determan, Brian G. Trewyn, Victor S.-Y. Lin, Marit Nilsen-Hamilton, Balaji Narasimhan,* *J. Controlled Release*, **2004**, in press.
10. "Morphological Control of Room-Temperature Ionic Liquid Templated Mesoporous Silica Nanoparticles for Controlled Release of Antibacterial Agents", Brian G. Trewyn, Chad M. Whitman, Victor S.-Y. Lin,* *Nano Lett.*, **2004**, in press.
11. "A Polyamidoamine Dendrimer-capped Mesoporous Silica Nanosphere-based Gene Transfection Reagent", Daniela R. Radu, Cheng-Yu Lai, Ksenija Jeftinija, Eric W. Rowe, Srdija Jeftinija, and Victor S.-Y. Lin,* *J. Am. Chem. Soc.*, **2004**, in press.
12. "Cooperative Catalysis by General Acid and Base Bifunctionalized Mesoporous Silica Nanosphere Catalysts", Seong Huh, Hung-Ting Chen, Jerzy W. Wiench, Marek Pruski, and Victor S.-Y. Lin,* *J. Am. Chem. Soc.*, **2004**, in revision for resubmission.
13. "Fine-tuning the Degree of Organic Functionalization of Mesoporous Silica Nanosphere Materials via an Interfacially Designed Co-condensation Method", Daniela R. Radu, Cheng-Yu Lai, Jianguo Huang, and Victor S.-Y. Lin,* *Chem. Comm. (Cambridge, U.K.)*, **2004**, in press.
14. "Real-Time ATP Imaging of Tunable Release from a MCM-41-type Mesoporous Silica Nanosphere-Based Delivery System", Jason A. Gruenhagen, Cheng-Yu Lai, Daniela R. Radu, Victor S.-Y. Lin,* and Edward S. Yeung,* *Chem. Mater.*, **2004**, submitted.
15. "Solid state NMR study of MCM-41-type mesoporous silica nanospheres", Julien Trebosc, Jerzy W. Wiench, Seong Huh, Victor S.-Y. Lin, and Marek Pruski,* *J. Phys. Chem. B*, **2004**, submitted.

PUBLICATIONS PRIOR TO IOWA STATE UNIVERSITY

1. "Catalytic Conversion of Simple Haloporphyrins into Alkyl-, Aryl-, and Vinyl-Substituted Porphyrins", Stephen G. DiMagno, Victor S.-Y. Lin, and Michael J. Therien, *J. Am. Chem. Soc.* **1993**, *115*, 2513-2515.
2. "Facile Elaboration of Porphyrins via Metal-Mediated Cross-Coupling", Stephen G. DiMagno, Victor S.-Y. Lin, and Michael J. Therien, *J. Org. Chem.* **1993**, *58*, 5983-5993.

Victor Shang-Yi Lin

3. "Highly Conjugated, Acetylenyl Bridged Porphyrins: New Models for Light-Harvesting Antenna Systems", Victor S.-Y. Lin, Stephen G. DiMugno, and Michael J. Therien, *Science (Washington, D.C.)* **1994**, 264, 1105-1111.
4. "Electron Paramagnetic Resonance Spectroscopy of the Lowest Photoactivated Triplet State of a Series of Highly Conjugated (Porphinato)Zn Arrays", Paul J. Angiolillo, Victor S.-Y. Lin, Jane M. Vanderkooi, and Michael J. Therien, *J. Am. Chem. Soc.*, **1995**, 117, 12514-12527.
5. "The Role of Steric and Electronic Effects in the Extensive Modulation of the Absorptive and Emissive Properties of a Series of Ethynyl- and Butadiynyl-Bridged Bis- and Tris-Porphinato(zinc) Chromophores", Victor S.-Y. Lin and Michael J. Therien, *Chem. Eur. J.*, **1995**, 1, 645-651.
6. "A Porous Silicon-Based Optical Interferometric Biosensor", Victor S.-Y. Lin, Kianoush Motesharei, Keikipua S. Dancil, Michael J. Sailor, and M. Reza Ghadiri, *Science (Washington, D.C.)* **1997**, 278, 840-843.
7. "Fabrication, Characterization, and Application of Macroporous *p*-Type Silicon Fabry-Perot Layer for Biosensors", Andreas Janshoff, Keiki-Pua S. Dancil, Claudia Steinem, Douglas P. Greiner, Victor S.-Y. Lin, Christian Gurter, Kianoush Motesharei, Michael J. Sailor, and M. Reza Ghadiri, *J. Am. Chem. Soc.*, **1998**, 120, 12108-12116.
8. "Ultrafast Dynamics of Highly Conjugated Porphyrin Arrays", Ranjit Kumble, Steven Palese, Victor S.-Y. Lin, Michael J. Therien, and Robin M. Hochstrasser, *J. Am. Chem. Soc.*, **1998**, 120, 11489-11498.
9. "Trends in Triplet Excitation Delocalization in Highly Conjugated (Porphinato)zinc(II) Arrays Probed by EPR Spectroscopy", Paul J. Angiolillo, Kimihiro Susumu, H. Tetsuo Uyeda, Victor S.-Y. Lin, Renée Shediach, and Michael J. Therien, *Synth. Met.*, **2001**, 116(1-3), 247-253.
10. "Transition metal mediated surface modification of porous silicon", Alan Saghatelian, Jillian Buriak, Victor S.-Y. Lin, and M. Reza Ghadiri. *Tetrahedron*, **2001**, 57, 5131-5136.
11. "Synthesis of selected supramolecules. Dipyrrolyl and porphyrinic precursors to supramolecular conjugated (porphinato)metal arrays: syntheses of dipyrrolylmethane and (5,15-diphenylporphinato)zinc (II)", Victor S.-Y. Lin, Peter M. Iovine, Stephen G. DiMugno, Michael J. Therien, Steve Malinak, and Dimitri Coucouvanis, *Inorg. Synth.* **2002**, 33, 55-61.
12. "DNA-based photonic logic gates: AND, NAND, and INHIBIT", Alan Saghatelian, Nicolas H. Voelcker, Kevin M. Guckian, Victor S.-Y. Lin, and M. Reza Ghadiri, *J. Am. Chem. Soc.*, **2003**, 125, 346-347.

PATENTS AT IOWA STATE UNIVERSITY

1. "Capped Mesoporous Silicates", Victor S.-Y. Lin,* Cheng-Yu Lai, Srdija Jefthinia, Dusan Jefthinia, U.S. Utility Patent Application filed, ISURF-02969.
2. "Immobilized Iminophosphatranes Useful for Transesterification", John G. Verkade,* Victor S.-Y. Lin,* Sarkar Arunkanti, U.S. Provisional Patent Application filed, ISURF-2976.

Victor Shang-Yi Lin

3. "Use of Functionalized Mesoporous Silicates to Esterify Fatty Acids and Transesterify Oils", Victor S.-Y. Lin,* Daniela R. Radu, U.S. Provisional Patent Application filed, ISURF-2979.

PROFESSIONAL ACTIVITY:

CONFERENCE SESSION CHAIRS

1. Chair and organizer, Nanotechnology Symposium, 45th Rocky Mountain Conference on Analytical Chemistry, Denver, CO, July 27-July 31, **2003**.
5. Chair and organizer, Nanotechnology Symposium, 46th Rocky Mountain Conference on Analytical Chemistry, Denver, CO, August 1-5, **2004**.

REVIEWER, PEER REVIEW JOURNALS AND GRANTING AGENCIES SINCE 08/1999:

<i>Journals and Granting Agencies</i>	<i>Number of Reviews</i>
<i>Adv. Mater.</i>	5
<i>Adv. Func. Mater.</i>	3
<i>Anal. Chem.</i>	1
<i>Biomacromolecules</i>	1
<i>Chem. Mater.</i>	3
<i>Inorg. Chem</i>	1
<i>J. Alloys Compd.</i>	2
<i>J. Am. Chem. Soc.</i>	22
<i>J. Phys. Chem.</i>	1
<i>Langmuir</i>	2
<i>Microscopy and Microanalysis</i>	1
ACS-Petroleum Research Fund, Research Proposal	2
Research Grants Council (RGC) of Hong Kong, Research Proposal	1
National Science Foundation (NSF), Research Proposal	2
U.S. Department of Energy (DOE), Research Proposal	1
Iowa State University, Center of Catalysis, Research Proposal	2
South Carolina Collaborative Research Program, Research Proposal	1

PRESENTATIONS

INVITED SEMINARS:

1. "New Models for Biological Light-Harvesting Complexes", Victor S.-Y. Lin, and Michael J. Therien, 11th Annual Eastern Regional Photosynthesis Conference, Woods Hole, MA, March 25-27, **1994**.
2. "New Mesoporous Materials for Chemo- and Bio-sensor Design", Victor S.-Y. Lin, Department of Chemistry and Center for Material Research and Analysis (CRMA), University of Nebraska, Lincoln, Lincoln, NE, October 9-10, **2000**.
3. "Mesoporous Silica Nanospheres for Neurochemical Detection and Neuronal Tissue Engineering", Victor S.-Y. Lin, Bioscience Program, USDOE Los Alamos National Laboratory, Los Alamos, NM, December 4-7, **2001**.

Victor Shang-Yi Lin

4. “Mesoporous Silica Nanosphere-Based Fluorescence Sensor and Controlled Release Delivery System”, Victor S.-Y. Lin, Nanotechnology Symposium, 44th Rocky Mountain Conference on Analytical Chemistry, Denver, CO, July 28-August 1, 2002.
5. “Multi-functionalized Mesoporous Silica Nanosphere-Based Fluorescence Sensor and Controlled Release Delivery System”, Victor S.-Y. Lin, Nanotechnology Symposium, 45th Rocky Mountain Conference on Analytical Chemistry, Denver, CO, July 27-July 31, 2003.
6. “Mesoporous silica nanosphere-based stimuli-responsive controlled release delivery system.” Victor S.-Y. Lin, Inorganic Nanomaterials Symposium, 226th ACS National Meeting, New York, NY, September 7-11, 2003.
7. “Gatekeeping Effect: Multi-functionalized Mesoporous Silica Nanosphere Materials as Biosensors, Selective Catalysts, and Stimuli-Responsive Controlled Release Delivery Carriers”, Victor S.-Y. Lin, Department of Chemistry, Columbia University, New York, NY, September 15, 2003 (Inorganic Seminar).
8. “Gatekeeping Effect: Multi-functionalized Mesoporous Silica Nanosphere Materials as Biosensors, Selective Catalysts, and Stimuli-Responsive Controlled Release Delivery Carriers”, Victor S.-Y. Lin, Department of Chemistry, University of Pennsylvania, Philadelphia, PA, September 16, 2003 (Inorganic Seminar).
9. “Gatekeeping Effect: Multi-functionalized Mesoporous Silica Nanosphere Materials as Biosensors, Selective Catalysts, and Stimuli-Responsive Controlled Release Delivery Carriers”, Victor S.-Y. Lin, DuPont Central Research and Development, Wilmington, DE, September 17, 2003 (Chemistry Seminar).
10. “Gatekeeping Effect: Multi-functionalized Mesoporous Silica Nanosphere Materials as Biosensors, Selective Catalysts, and Stimuli-Responsive Controlled Release Delivery Carriers”, Victor S.-Y. Lin, Department of Chemistry and Biochemistry, Southern Illinois University, Carbondale, IL, September 26, 2003 (Departmental Seminar).
11. “Gatekeeping Effect: Multi-functionalized Mesoporous Silica Nanosphere Materials as Biosensors, Selective Catalysts, and Stimuli-Responsive Controlled Release Delivery Carriers” Victor S.-Y. Lin, Surface Chemistry of Inorganic Materials Symposium, 227th ACS National Meeting, Anaheim, CA, March 28-April 1, 2004.
12. “Gatekeeping Effect: Multi-functionalized Mesoporous Silica Nanosphere Materials as Biosensors, Selective Catalysts, and Stimuli-Responsive Controlled Release Delivery Carriers” Victor S.-Y. Lin, Department of Chemistry, University of California, Irvine, Irvine, CA, May 10, 2004 (Chemistry Seminar).
13. “Gatekeeping Effect: Multi-functionalized Mesoporous Silica Nanosphere Materials as Biosensors, Selective Catalysts, and Stimuli-Responsive Controlled Release Delivery Carriers” Victor S.-Y. Lin, 37th International Silicon Symposium at the University of Pennsylvania, Philadelphia, PA, May 20-22, 2004.

Victor Shang-Yi Lin

14. "Multi-functionalized Mesoporous Silica Nanosphere-Based Fluorescence Sensor", Victor S.-Y. Lin, Nanotechnology Symposium, 46th Rocky Mountain Conference on Analytical Chemistry, Denver, CO, August 1-5, **2004**.
15. "Gatekeeper Effect: Multifunctionalized Mesoporous Silica Nanosphere (MSN) Material for Biosensor, Drug Delivery, and Gene Transfection Applications", Victor S.-Y. Lin, Department of Chemistry, University of Pittsburgh, Pittsburgh, PA, September 9, **2004** (Analytical Seminar).
16. "Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications" Victor S.-Y. Lin, Department of Chemistry, The Scripps Research Institute, La Jolla, CA, September 15, **2004** (Chemistry Seminar).
17. "Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biomedical Applications" Victor S.-Y. Lin, Department of Chemistry, University of California, Berkeley, Berkeley, CA, September 17, **2004** (Inorganic Seminar).
18. "Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biomedical Applications" Victor S.-Y. Lin, Department of Chemistry, Rice University, Houston, TX, October 22, **2004** (Organic Seminar).
19. "Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biomedical Applications" Victor S.-Y. Lin, Department of Chemistry, University of Illinois at Urbana Champaign, Urbana, IL, November 9, **2004** (Inorganic Seminar).
20. "Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biomedical Applications" Victor S.-Y. Lin, Brookhaven National Laboratory, Upton, NY, November 15, **2004** (Nanoscience Seminar).

CONTRIBUTED LECTURES AND POSTERS:

1. "Novel Acetylenyl Porphyrins: Synthesis, Spectroscopy, and Electrochemistry", Victor S.-Y. Lin, Stephen G. DiMagno, and Michael J. Therien, 6th International Conference on Bioinorganic Chemistry (ICBIC-6), La Jolla, CA, August 23-27, **1993**. (Poster)
2. "Novel Acetylenyl Porphyrins: New Models for Light-Harvesting Antenna Systems", Victor S.-Y. Lin, Stephen G. DiMagno, and Michael J. Therien, 11th Annual Eastern Regional Photosynthesis Conference, Woods Hole, MA, March 25-27, **1994**. (Talk)
3. "Novel Acetylenyl Porphyrins: New Models for Light-Harvesting Antenna Systems", Victor S.-Y. Lin, Stephen G. DiMagno, and Michael J. Therien, 12th Annual Eastern Regional Photosynthesis Conference, Woods Hole, MA, March 24-26, **1995**. (Talk)
4. "Novel Acetylenyl Porphyrins: Synthesis, Spectroscopy, and Electrochemistry", Victor S.-Y. Lin and Michael J. Therien, 210th American Chemical Society National Meeting, Chicago, IL, August 23-27, **1995**. (Talk)
5. "Novel Porous Silicon-Based Optical Sensor for Direct Sensing of Biomolecular Interactions", Victor S.-Y. Lin, M. Reza Ghadiri, Kianoush Motesharei, Keiki-Pua S. Dancil, and Michael J. Sailor, 214th American Chemical Society National Meeting, Las Vegas, NV, September 7-11, **1997**. (Talk)

Victor Shang-Yi Lin

6. "A Porous Silicon-Based Optical Interferometric Biosensor", Victor S.-Y. Lin, Kianoush Motesharej, Keiki-Pua S. Dancil, Michael J. Sailor, and M. Reza Ghadiri, 5th North American Chemical Congress, Cancun, Mexico, November 11-16, **1997**. (Poster)
7. "New optical methods for nucleic acid sensing", Victor S.-Y. Lin, International Gordon Research Conference on Chemical Sensors and Interfacial Design, Ventura, CA January 23-28, **2000**. (Talk)
8. "Mesoporous Silica-based Fluorescence Sensors", Victor S.-Y. Lin, Jianguo Huang, Cheng-Yu Lai, 221st American Chemical Society National Meeting, San Diego, CA April 1-5, **2001**. (Poster)
9. "Synthesis and Characterization of Mesoporous Silica Nanospheres for Neurochemical Detection and Controlled Release Delivery", Victor S.-Y. Lin, Cheng-Yu Lai, 224th American Chemical Society National Meeting, Boston, MA, August 18-22, **2002**. (Poster)
10. "Nanoparticle-Capped Mesoporous Silica Nanospheres for as Controlled Release Delivery Carriers", Cheng-Yu Lai, Victor S.-Y. Lin, 224th American Chemical Society National Meeting, Boston, MA, August 18-22, **2002**. (Poster)
11. "Novel Multifunctionalized Mesoporous Silica Catalyst as Structure Directing Template for Oxidative Polymerization of Butadiynylene-based Highly Conjugated Polymers", International Gordon Research Conference on Catalysis, New London, NH, June 23-28, **2002**. (Poster and Talk)
12. "Multifunctional mesoporous silica nanospheres as biosensors and stimuli-responsive, controlled-release delivery carriers." 225th ACS National Meeting, New Orleans, LA, March 23-27, **2003**. (Talk)

FUNDING SOURCES

CURRENTLY ACTIVE GRANTS:

1. NSF-CHE (CAREER Award) (PI: Victor S.-Y. Lin)
"Synthesis of multi-functional mesoporous silica materials for studying intercellular interaction and controlled release drug delivery"
Duration: 5 years (02/01/03 to 01/31/08)
Total Awarded Amount: \$470,000
2. U.S. DOE, Catalysis Science Grant, Office of Basic Energy Sciences (PIs: Marek Pruski, Victor S.-Y. Lin, Robert Angelici, Andreja Bakac, James Espenson, James Evans, Mark Gordon, Edward Yeung)
"Selective and Efficient Catalysis in 3-D Controlled Environments"
Duration: 3 years (09/15/03 to 08/14/06)
Total Awarded Amount: \$1,800,000
Lin's share: 33.3% (\$600,000 total)
3. NSF-CMS (PI: Sriram Sundararajan (Mech. Eng., ISU); Co-PI: Victor S.-Y. Lin)
"Development of Smart Nanotribological Surfaces using Multifunctionalized Mesoporous Nanosphere Films"
Duration: 3 year (proposed period: 08/01/04 to 7/31/07)
Total Proposed Amount: \$354,230
Lin's share: 50% (\$177,000 total)

Victor Shang-Yi Lin

4. USDA, Biorenewable Energy Research and Development Grant (PI: West Central Cooperative; Co-PI: Victor S.-Y. Lin, George A. Kraus, John G. Verkade)
“New Technologies for Production of Methyl Esters”
Duration: 2 years (10/01/03 to 08/31/05)
Total Awarded Amount: \$1,826,648
Lin’s share: 22.4% (\$409,164 total)
5. USDA-VADG (PI: West Central Cooperative; Co-PI: Victor S.-Y. Lin, George A. Kraus, John G. Verkade)
“New Technologies for the Production of High Value Chemicals from Glycerin”
Duration: 1 year (09/01/03 to 8/31/04)
Total Awarded Amount: \$200,000
Lin’s share: 40% (\$80,000 total)
6. United Soybean Board Domestic Program (PI: John G. Verkade; Co-PI: Victor S.-Y. Lin)
“A Potentially Cheaper Route to Soy Methyl Ester”
Duration: 3 years (10/01/01 to 09/30/04)
Total Awarded Amount: \$196,625
Lin’s share: 35.6% (\$70,000 total)
7. West Central Coop.-CATD Grant (PI: George A. Kraus; Co-PI: Victor S.-Y. Lin, John G. Verkade)
“New Catalysts for Efficient Conversion of Soybean Oils and Animal Fats to Biodiesel Fuels”
Duration: 1 year (09/01/03 to 08/31/04)
Total Awarded Amount: \$100,000
Lin’s share: 50.0% (\$50,000 total)
8. J. M. Huber Corporation Unrestricted Research Grant (PI: Victor S.-Y. Lin)
“New Mesoporous Silica Nanosphere-Based Delivery Systems”
Duration: 1 year (10/01/03 to 09/30/04)
Total Awarded Amount: \$15,000
9. J. M. Huber, Corp. Research Grant
“Antibacterial Agent-releasing Mesoporous Silica Nanospheres (MSN’s) for Prevention/Elimination of Oral Malodor” and “UV-Activated Antioxidant Controlled Release Mesoporous Silica Nanosphere (MSN) Delivery System”
Duration: 1 year (10/01/04 to 9/31/05)
Total Awarded Amount: \$124,270
10. Iowa State University, Carver trust Grant (PI: Sriram Sundararajan, Co-PI: Victor S.-Y. Lin)
“ Design and Development of Adaptive Surfaces Using Multifunctionalized Mesoporous Nanosphere Films”
Duration: 1 year (04/16/04 to 7/31/05)
Total Awarded Amount: \$25,000
Lin’s share: 50.0% (\$12,500 total)
11. Iowa State University, Institute for Physical Research and Technology, Center for Catalysis Competitive Grant (PI: Victor S.-Y. Lin; Co-PI: George A. Kraus, John G. Verkade)
“Novel Cooperative Mesoporous Silica Nanosphere-based Catalyst for the Direct Synthesis of Biodiesel from Feedstocks with High Free Fatty Acid Contents”

Victor Shang-Yi Lin

Duration: 1 year (10/01/04 to 9/31/05)

Total Awarded Amount: \$90,000

Lin's share: 50.0% (\$45,000 total)

PAST GRANTS SINCE 08/1999:

1. Iowa State University, Special Research Initiation Grant (PI: Victor S.-Y. Lin; Co-PI: Nicola L. Pohl).
"Novel Porous Silica Based Microspheres for Cell-type Specific Drug Deliveries"
Duration: 1 year (1/01/01 to 12/31/01)
Total Awarded Amount: \$15,400
2. Ames Laboratory, U.S. DOE, Materials Preparation Center, Process Science Initiative Program (PI: Victor S.-Y. Lin)
"Synthesis and Characterization of new Biocompatible Mesoporous Materials with Organic Functional Groups and Different Particle Morphologies"
Duration: 1 year (11/01/01 to 10/31/02)
Total Awarded Amount: \$30,000
3. Ames Laboratory, U.S. DOE, Biorenewable Resources Consortium (BRC) (PI. Brent H. Shanks; Co-PI's. Victor S.-Y. Lin and George A. Kraus)
"Designed Catalyst Systems for Efficient Conversion of Soybean Oil to Value-Added Oxidation Products"
Duration: 1 year (10/01/02 to 9/30/03)
Total Awarded Amount: \$96,000
Lin's share: 30.0% (\$28,800 total)
4. Ames Laboratory, U.S. DOE, Biorenewable Resources Consortium (BRC) (PI. Deland J. Myers; Co-PI's. Monlin Kuo and Victor S.-Y. Lin)
"Formulating Environmentally friendly Wood Preservatives with Soy and Feather Proteins"
Duration: 1 year (10/01/02 to 9/30/03)
Total Awarded Amount: \$81,064
Lin's share: 12.0% (\$10,000 total)
5. Ames Laboratory, U.S. DOE, Center for Catalysis (PI. Brent H. Shanks; Co-PI. Victor S.-Y. Lin)
"Catalytic Conversion of Corn Fiber to Hydrogen"
Duration: 1 year (7/01/02 to 6/30/03)
Total Awarded Amount: \$73,000
Lin's share: 48.0% (\$35,000 total)
6. Ames Laboratory, U.S. DOE, Center for Catalysis (PI. Andreja Bakac; Co-PI's: Victor S.-Y. Lin, Brent H. Shanks, and Marek Pruski)
"Photocatalytic, Heterogeneous Oxidation of Hydrocarbons"
Duration: 1 year (7/01/02 to 6/30/03)
Total Awarded Amount: \$73,000
Lin's share: 27.0% (\$20,000 total)
7. Iowa State University, College of Veterinary Medicine, Healthy Livestock Initiative Grant (PI. Srdija Jeftinija, Co-PI's: Victor S.-Y. Lin, Ronald W. Griffith)

Victor Shang-Yi Lin

“The design and testing of a delivery vehicle for selective intracellular targeting of botulinum neurotoxin (BoNTx/A) antidote”

Duration: 1 year (7/01/02 to 6/30/03)

Total Awarded Amount: \$20,000

Lin's share: 50.0% (\$10,000 total)