

# Victor Shang-Yi Lin

## *CURRICULUM VITAE* (Revised on February 15, 2006)

*Office*      1710 Gilman Hall      Phone: (515) 294-3135  
Department of Chemistry      FAX: (515) 294-0105  
Iowa State University      E-mail: vsylin@iastate.edu  
Ames, IA 50011

**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**      **Professor**      (08/06 – Present)  
**Associate Professor with Tenure**      (08/05 – 07/06)  
**Assistant Professor**      (08/99 – 07/05)  
**Department of Chemistry**  
**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**

## Victor Shang-Yi Lin

### 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

### 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

Outstanding Technology Development Award, U.S. Federal Laboratory Consortium-Mid Continent Region (2005)

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)

## TEACHING RESPONSIBILITY

Semester	Course Code	Course Title	Credit	No. of Students Enrolled
Fall 2005	CHEM 177M	General Chemistry	4	41
	CHEM 177N	General Chemistry Laboratory	1	41
Spring 2005	CHEM 178	General Chemistry	3	438
Fall 2004	CHEM 401L	Inorganic Laboratory	2	8
	CHEM 501	Inorganic Preparations	2	1
Spring 2004	CHEM 178	General Chemistry	3	458
Fall 2003	CHEM 601	Special Topic in Inorganic Chemistry: Nanostructured	1	15

## Victor Shang-Yi Lin

### Materials for Catalysis, Electronics, Separation, and Biomedical Applications

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
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-May, 2004

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

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

## **Victor Shang-Yi Lin**

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

Member, Graduate Affairs Committee  
August, 2000-June, 2001; August, 2005-Present.

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

Member, Faculty Search Committee  
August, 2005-Present.

### **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)
3. Dr. Man-Chien Chao, National Taiwan University, Taiwan  
August, 2005-present
4. Dr. Carla Kern, Universidade Estadual Paulista, San Paulo, Brazil  
February, 2005-present.
5. Dr. Cristina Bonaccorsi, Swiss Federal Institute of Technology (ETH Hönggerberg), Switzerland  
February, 2006-present.

### **ADVISED AND CURRENT GRADUATE STUDENTS**

1. Cheng-Yu Lai, M.S.-National Chung-Hsing University, Taiwan  
November, 1999-December, 2004 (Ph.D) (Currently a postdoctoral researcher at the Scripps Research Institute)
2. Seong Huh, M.S.- Yonsei University, South Korea  
August, 2000-December, 2004 (Ph.D) (Currently a postdoctoral researcher at U. of California, Berkeley)
3. Brian G. Trewyn, B.S.- University of Wisconsin, LaCrosse, Wisconsin  
November, 2000-present (Ph.D) (Currently a postdoctoral researcher at Iowa State University)
4. Daniela R. Radu, B.S.- Babef-Bolyai University, Romania  
November, 2000-December, 2004 (Ph.D) (Currently a postdoctoral researcher at the Scripps Research Institute)
5. Kasey Strosahl, B.A. – Simpson College, Indianola, IA  
November, 2003-July, 2004 (M.S.)

## Victor Shang-Yi Lin

6. Hung-Ting Chen, M.S.- National Taiwan University, Taiwan  
November, 2001-present (Ph.D student)
7. Jennifer Nieweg, B.S.- Truman State University, Kirksville, Missouri  
November, 2001-present (Ph.D student)
8. Supratim Giri, M.S. – Indian Institute of Technology, Kanpur, India  
November, 2002-present (Ph.D student)
9. Po-Wen (Cedric) Chung, M.S. – National Tsing-Hua University, Taiwan  
January, 2005-present (Ph.D student)
10. Nikola Knezevic, M.S. – University of Belgrade, Belgrade, Yugoslavia  
April, 2004-present (Ph.D student)
11. Yulin Huang, M.S. – Sichuan University, P. R. China  
August, 2004-present (Ph.D student)
12. Juan L. Vivero-Escoto, M.S. – National Polytechnic Institute of Mexico, Mexico  
November, 2004-present (Ph.D student)
13. Igor Slowing, M.S. – San Carlos University, Guatemala  
November, 2004-present (Ph.D student)
14. Wei Huang, M.S. – Nanjing University, P. R. China  
November, 2005-present (Ph.D student)
15. Chorthip Peeraphatdit, B.S.- Lawrence University, Wisconsin  
November, 2006-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
4. Michael P. Stellmaker – Department of Chemistry, Iowa State University  
August, 2004-present

## Victor Shang-Yi Lin

5. Joseph D. Buss – Department of Biology, Iowa State University  
May, 2005-present
6. Matthew Bannerman – Department of Zoology, Iowa State University  
May, 2005-present
7. Anthony P. Kagemann – Department of Chemistry, Iowa State University  
January, 2005-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 = 908<sup>§</sup>**

**Citations of V.S.-Y. Lin’s publication at Iowa State University = 171<sup>§</sup>**

§ Number obtained from the SciFinder Scholar citation search on February 15, 2006.

### 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.

## Victor Shang-Yi Lin

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.
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, and Balaji Narasimhan,\* *J. Controlled Release*, **2004**, *100*, 97-109.
10. "Morphological Control of Room-Temperature Ionic Liquid Templated Mesoporous Silica Nanoparticles for Controlled Release of Antibacterial Agents", Brian G. Trewyn, Chad M. Whitman, and Victor S.-Y. Lin,\* *Nano Lett.*, **2004**, *4*, 2139-2143.
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**, *126*, 13216-13217.
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,\* *Angew. Chem. Int. Ed.* **2005**, *44*, 1826-1830.
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.)*, **2005**, *10*, 1264-1266.
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,\* *Appl. Spectrosc.*, **2005**, *59*, 424-431.
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. Am. Chem. Soc.*, **2005**, *127*, 3057-3068.

## Victor Shang-Yi Lin

16. "Studies of Organically Functionalized Mesoporous Silicas Using Heteronuclear Solid-State Correlation NMR Spectroscopy under Fast Magic Angle Spinning", Julien Trebosc, Jerzy W. Wiench, Seong Huh, Victor S.-Y. Lin, and Marek Pruski,\* *J. Am. Chem. Soc.*, **2005**, *127*, 7587-7593.
17. "Magnetic Nanoparticle-Capped Mesoporous Silica Nanorod-Based Stimuli-Responsive Controlled Release Delivery System", Supratim Giri, Brian G. Trewyn, Michael P. Stellmaker, and Victor S.-Y. Lin,\* *Angew. Chem. Int. Ed.* **2005**, *44*, 5038-5044.
18. "Mesoporous Silica-Supported Uranyl: Synthesis and Photoreactivity", Jennifer A. Nieweg, Kelemu Lemma, Victor S.-Y. Lin,\* and Andreja Bakac,\* *Inorg. Chem.*, **2005**, *44*, 5641-5648.
19. "Hyperpolarized  $^{129}\text{Xe}$  NMR Investigation of Multifunctional Organic/Inorganic Hybrid Mesoporous Silica Materials", Shing-Jong Huang, Seong Huh, Pang-Shueng Lo, Shang-Bin Liu,\* and Victor S.-Y. Lin,\* *Phys. Chem. Chem. Phys.*, **2005**, *7*, 3080-3087.
20. "Dialkylaminopyridine-functionalized Mesoporous Silica Nanosphere as a Highly Stable Heterogeneous Nucleophilic Catalyst", Hung-Ting Chen, Seong Huh, Jerzy W. Wiench, Marek Pruski and Victor S.-Y. Lin,\* *J. Am. Chem. Soc.*, **2005**, *127*, 13305-13311.
21. "Multifunctional mesoporous silica nanoparticle catalysts for conversions of bio-based feedstocks to biodiesel and other value-added products", Victor S.-Y. Lin,\* Daniela R. Radu, and Hung-Ting Chen, *Prepr. Symp. Am. Chem. Soc., Div. Fuel Chem.* **2005**, *50*(1), 306-307.
22. "Fine Tuning the Functionalization of Mesoporous Silica", Hung-Ting Chen, Seong Huh, and Victor S.-Y. Lin,\* *Catalyst Preparation Handbook*, J. R. Regalbuto, Ed., **2005**, *Marcel Dekker Publishing Co.*, in press.
23. "A facile method for the synthesis of bifunctional organic-inorganic hybrid mesoporous silica nanospheres", Seong Huh, Hung-Ting Chen, Jerzy W. Wiench, Marek Pruski, and Victor S.-Y. Lin,\* *Microporous Mesoporous Mater.*, **2006**, submitted.
24. "Template Removal and Thermal Stability of Organically Functionalized Mesoporous Silica Nanoparticles", Rajeev Kumar, Hung-Ting Chen, Juan L. V. Escoto, Victor S.-Y. Lin,\* and Marek Pruski,\* *J. Am. Chem. Soc.* **2006**, submitted.
25. "A Capped Mesoporous Silica Nanosphere-based Intracellular Controlled Release Delivery Device", Brian G. Trewyn, Cheng-Yu Lai, Daniela R. Radu, and Victor S.-Y. Lin,\* *Science (Washington D.C.)*, **2006**, submitted.
26. "Recyclable Mesoporous Calcia-Silica Mixed Oxide Catalysts for Transesterification of Triglyceride to Biodiesel", Jennifer A. Nieweg, Carla Kern, Brian G. Trewyn, Jerzy W. Wiench, Marek Pruski, and Victor S.-Y. Lin,\* *J. Am. Chem. Soc.* **2006**, submitted.
27. "Effect of Surface Functionalization of MCM-41 Type Mesoporous Silica Nanoparticles on the Endocytosis by Human Cancer Cells", Igor Slowing, Brian G. Trewyn, and Victor S.-Y. Lin,\* *J. Am. Chem. Soc.* **2006**, submitted.

## Victor Shang-Yi Lin

28. "Controlled Endocytosis of Tri(Ethylene Glycol) Modified Mesoporous Silica Nanospheres into Animal and Plant Cells", Brian G. Trewyn, Francois Torney, Jennifer A. Nieweg, Joseph D. Buss, Kan Wang, and Victor S.-Y. Lin,\* *Nano Lett.*, **2006**, in preparation.

### PUBLICATIONS PRIOR TO IOWA STATE UNIVERSITY

1. "Catalytic Conversion of Simple Haloporphyrins into Alkyl-, Aryl-, and Vinyl-Substituted Porphyrins", Stephen G. DiMugno, 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. DiMugno, Victor S.-Y. Lin, and Michael J. Therien, *J. Org. Chem.* **1993**, *58*, 5983-5993.
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 Moteshareei, 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 Moteshareei, 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-

## Victor Shang-Yi Lin

diphenylporphinato)zinc (II)", Victor S.-Y. Lin, Peter M. Iovine, Stephen G. DiMagno, 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.
13. "DNA Hybridization-Enhanced Porous Silicon Corrosion: Mechanistic Investigations and Prospect for Poptical Interferometric Biosensing", Claudia Steinem, Andreas Janshoff, Victor S.-Y. Lin, Nicolas H. Voelcker, M. Reza Ghadiri, *Tetrahedron* **2004**, 60, 11259-11267.

### PATENTS AT IOWA STATE UNIVERSITY

1. "Capped Mesoporous Silicates", Victor S.-Y. Lin,\* Cheng-Yu Lai, Srdija Jeftinia, Dusan Jeftinia, 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.
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**.
2. Chair and organizer, Nanotechnology Symposium, 46th Rocky Mountain Conference on Analytical Chemistry, Denver, CO, August 1-5, **2004**.
3. Chair, Inorganic Nanoscience Symposium, 229<sup>th</sup> ACS National Meeting, San Diego, CA, **2005**.

#### 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>	14
<i>Adv. Func. Mater.</i>	3
<i>Anal. Chem.</i>	3
<i>Angew. Chem.</i>	7
<i>Biomacromolecules</i>	1
<i>Chem. Bio. Chem.</i>	1
<i>Chem. Commun.</i>	4
<i>Chem. Mater.</i>	10
<i>Chem. Lett.</i>	2
<i>Inorg. Chem</i>	1
<i>J. Alloys Compd.</i>	2
<i>J. Am. Chem. Soc.</i>	45
<i>J. Phys. Chem.</i>	3

## Victor Shang-Yi Lin

<i>Langmuir</i>	4
<i>Macromolecules</i>	2
<i>Microscopy and Microanalysis</i>	1
<i>Microporous and Mesoporous Materials</i>	1
<i>FASEB Journal</i>	1
<i>J. Inorg. Biochem.</i>	1
<i>Science (Washington D.C.)</i>	1
ACS-Petroleum Research Fund, Research Proposal	2
Research Grants Council (RGC) of Hong Kong, Research Proposal	1
U.S. National Science Foundation (NSF), Research Proposal	5
U.S. Department of Energy (DOE), Research Proposal	3
U.S. Department of Agriculture (USDA), Research Proposal	1
U.S. Air Force Office of Scientific Research (AFOSR), 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**.
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).

## Victor Shang-Yi Lin

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, 37<sup>th</sup> International Silicon Symposium at the University of Pennsylvania, Philadelphia, PA, May 20-22, **2004**.
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

## Victor Shang-Yi Lin

and Center for Material Research and Analysis (CRMA), University of Nebraska, Lincoln, Lincoln, NE, September 27, 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, Rice University, Houston, TX, October 21, 2004 (Organic Seminar).
20. “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).
21. “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).
22. “Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications” Victor S.-Y. Lin, Institute of Atomic and Molecular Sciences, Academia Sinica and Dept. of Chemistry, National Taiwan University, Taipei, Taiwan, December 21, 2004 (Chemistry Seminar).
23. “Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications” Victor S.-Y. Lin, Department of Chemistry, National Taiwan Normal University, Taipei, Taiwan, December 22, 2004 (Chemistry Seminar).
24. “Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications” Victor S.-Y. Lin, Department of Chemistry and Biochemistry, State University of New York at Stony Brook, Stony Brook, NY, February 16, 2005 (Chemistry Seminar).
25. “Capped mesoporous silica nanosphere materials as stimuli-responsive controlled release delivery carriers” Victor S.-Y. Lin, Nanoscience: Applications Symposium of Inorganic Chemistry Division, 229th ACS National Meeting, San Diego, CA, March 13-18, 2005, (Invited Talk).
26. “Multifunctional mesoporous silica nanoparticle catalysts for conversions of bio-based feedstocks to biodiesel and other value-added products” Victor S.-Y. Lin, Catalysis in Fuel Chemistry Symposium, Division of Fuel Chemistry, 229th ACS National Meeting, San Diego, CA, March 13-18, 2005, (Invited Talk).
27. “Selective and Efficient Catalysis in 3-D Controlled Environments” Victor S.-Y. Lin and Marek Pruski, Nanocatalysis Science Symposium, U.S. DOE Catalysis and Chemical Transformations Contractors’ Meeting, Rockville, MD, May 18-21, 2005, (Invited Talk).
28. “Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications” Victor S.-Y. Lin, Department of Chemistry and Department of Molecular and Cellular Biology, University of California at Davis, Davis, CA, June 2-3, 2005 (Invited Seminar).

## Victor Shang-Yi Lin

29. “Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications” Victor S.-Y. Lin, International Gordon Research Conference (Zeolitic & Layered Materials), Mount Holyoke College, South Hadley, MA, July 3-8, **2005**. (Invited Talk).
30. “Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications” Victor S.-Y. Lin, 13th International Workshop on Sol-Gel Science and Technology, Los Angeles, CA, August 21-26, **2005**. (Invited Talk).
31. “Multifunctionalized Mesoporous Catalysts for the Conversion of Oils to Value-added Products” Victor S.-Y. Lin, Biobased Industry Outlook Conference, Iowa State University, Ames, IA, August 29-30, **2005** (Invited Talk).
32. “Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications” Victor S.-Y. Lin, Department of Chemistry and Biochemistry, Arizona State University, Tempe, AZ, September 12, **2005** (Chemistry Seminar).
33. “Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications” Victor S.-Y. Lin, Department of Chemistry, University of Missouri at Kansas City, Kansas City, MO, September 21, **2005** (Chemistry Seminar).
34. “Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications” Victor S.-Y. Lin, Department of Chemistry, Michigan Tech University, Houghton, MI, October 21, **2005** (Chemistry Seminar).
35. “Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications” Victor S.-Y. Lin, 3<sup>rd</sup> 21COE International Symposium on “Practical Nano-Chemistry” Waseda University, Tokyo, Japan, November 14-15, **2005** (Plenary Lecture).
36. “Gatekeeping Effect: Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications” Victor S.-Y. Lin, Nanoporous Materials: Synthesis and Applications Session, Pacifichem 2005, Honolulu, Hawaii, December 15-20, **2005** (Invited Talk).
37. “Gate-keeping effect: Multifunctional mesoporous silica nanoparticle catalysts for cooperative and selective catalysis” Victor S.-Y. Lin, Nano-structured Catalysts for Environmental Conservation Session, Pacifichem 2005, Honolulu, Hawaii, December 15-20, **2005** (Invited Talk).
38. “Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications” Victor S.-Y. Lin, Department of Chemistry, Emory University, Atlanta, GA, February 14, **2006** (Inorganic Seminar).
39. “Gatekeeping Effect: Synthesis of Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Biotechnological Applications” Victor S.-Y. Lin, Department of

## Victor Shang-Yi Lin

Chemistry, University of Missouri at Columbia, Columbia, MO, March 24, **2006** (Chemistry Seminar).

39. “Multi-functionalized Mesoporous Silica Nanosphere Materials for Selective Catalysis and Green Chemistry” Victor S.-Y. Lin, Nanotechnology and Environment Symposium, 231th ACS National Meeting, Atlanta, GA, March 26-30, **2006** (Invited Talk).
40. “Functionalized Mesoporous Silica Nanoparticles for Gene Transfer, Intracellular Controlled Release, and Biosensor Applications” Victor S.-Y. Lin, Nanotechnology and Dendrimer Symposium, the Particles 2006 Conference, Orlando, FL, May 13-16, **2006** (Invited Talk).

### 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 Moteshareei, Keiki-Pua S. Dancil, and Michael J. Sailor, 214th American Chemical Society National Meeting, Las Vegas, NV, September 7-11, **1997**. (Talk)
6. “A Porous Silicon-Based Optical Interferometric Biosensor”, Victor S.-Y. Lin, Kianoush Moteshareei, 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)

## Victor Shang-Yi Lin

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 (PI: Victor S.-Y. Lin, Co-PIs Marek Pruski, 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 Awarded Amount: \$354,230**  
**Lin’s share: 50% (\$177,000 total)**
4. U.S. DOE, Basic Research for the Hydrogen Fuel Initiative, Office of Basic Energy Sciences (PI: Vitalij K. Pecharsky Co-PIs: Victor S.-Y. Lin, Marek Pruski, L. Scott Chumbley, and Purusottam Jena (U. of Virginia))  
“Complex Hydrides – a New Frontier for Future Energy Applications”  
**Duration: 3 years (08/15/05 to 08/14/08)**  
**Total Awarded Amount: \$1,600,000**  
**Lin’s share: 20.0% (\$300,000 total)**
5. Iowa State University, Institute for Physical Research and Technology, Technology Transfer Grant (PI: George A. Kraus; Co-PI: Victor S.-Y. Lin)  
“Novel Porous Silicon for Conversion of Carbohydrates to Value-Added Products”

## Victor Shang-Yi Lin

**Duration: 1 year (09/01/05 to 8/31/06)**

**Total Awarded Amount: \$65,000**

**Lin's share: 50.0% (\$32,500 total)**

6. Iowa State University, Plant Science Institute, Biopharma Initiative Grant (PI: Victor S.-Y. Lin)  
“Novel Mesoporous Silica Nanosphere-based Gene Transfer System for Plants”  
**Duration: 2 year (10/01/04 to 9/31/06)**  
**Total Awarded Amount: \$30,000**
7. Iowa State University, Grow Iowa Value Fund (PI: Victor S.-Y. Lin; Co-PI: George A. Kraus, John G. Verkade)  
“New Technologies for Production of Biodiesel”  
**Duration: 2 years (3/01/06 to 2/28/08)**  
**Total Awarded Amount: \$140,000**  
**Lin's share: 53.5% (\$75,000 total)**
8. USDA-VADG (PI: West Central Coop. Inc.; Co-PI: Victor S.-Y. Lin, George A. Kraus, John G. Verkade)  
“New Technologies for the Production of High Value Chemicals from Glycerin”  
**Duration: 2 year (09/01/03 to 12/31/05)**  
**Total Awarded Amount: \$200,000**  
**Lin's share: 40% (\$80,000 total)**
9. J. M. Huber Corporation Unrestricted Research Grant (PI: Victor S.-Y. Lin)  
“New Mesoporous Silica Nanosphere-Based Delivery Systems”  
**Duration: 1 year (10/01/04 to 12/31/05)**  
**Total Awarded Amount: \$15,000**
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: 2 years (04/16/04 to 8/31/06)**  
**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”  
**Duration: 2 year (10/01/04 to 9/31/06)**  
**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)**

## Victor Shang-Yi Lin

**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, Marek Pruski)  
“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)  
“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)**
8. 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)**

## Victor Shang-Yi Lin

**Total Awarded Amount: \$196,625**

**Lin's share: 35.6% (\$70,000 total)**

9. 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)**

10. USDA, Biorenewable Energy Research and Development Grant (PI: West Central Coop. Inc.; 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 7/31/05)**

**Total Awarded Amount: \$1,826,648**

**Lin's share: 22.4% (\$409,164 total)**