

**Melanie A. McNeil**  
**Department of Chemical and Materials Engineering**  
**San Jose State University**  
(408) 924-3873

**PROFESSIONAL PREPARATION**

University of California, Santa Barbara	Chemistry	B.S.	1986
University of California, Santa Barbara	Chemical Engineering	B.S.	1986
University of California, Santa Barbara	Chemical Engineering	Ph.D.	1990

**APPOINTMENTS**

**San Jose State University, San Jose, California**  
Department of Chemical and Materials Engineering

<b>Professor</b>	<b>8/99 - Present</b>
<b>Associate Professor</b>	<b>8/94 - 8/99</b>
<b>Assistant Professor</b>	<b>8/90 - 8/94</b>

Teaching in the following areas: Chemical kinetics, catalysis and reactor design, biochemical engineering, environmental engineering, safety, ethics, statistics, undergraduate chemical engineering lab. Research in the areas of nanowire synthesis, DNA sequence search algorithm development, RNA/peptide binding, and thin film applications for drug delivery and photovoltaics. Co-Lab Director: Biochemical and Environmental Engineering Laboratory.

**U.S.A. Petrochem Corporation, Ventura, California**

**Chemist** **2/80 – 9/83**

Performed quality control tests on refined petroleum products and analyzed waste water and other refinery waste materials.

**PUBLICATIONS AND PRESENTATIONS**

Eric A. Appel, Victor Y. Lee, Timothy T. Nguyen, Melanie McNeil, Frederik Nederberg, James L. Hedrick, William C. Swope, Julia E. Rice, Robert D. Miller, Joseph Slu, "Toward Biodegradable Nanogel Star Polymers via Organocatalytic ROP", *Chem. Commun.*, 48 (49), 6163 – 6165, (2012).

Joseph Sly, Victor Y. Lee, Karen Havenstrite, Melia Tjio, Melanie McNeil, Helen M. Blau, Robert D. Miller, "Nanogel Star Polymer Architectures: A Nanoparticle Platform for Modular Programmable Macromolecular Self-assembly, Intercellular Transport and Dual Mode Cargo Deliver, *Advanced Materials*, Volume 23, Issue 39,, pages 4509–4515, (2011).

Kazuki Fukushima, Olivier Coulembier, Julien M. Lecuyer, Hamid A. Almegren, Abdullah M. Alabdulrahman, Fares D. Alsewailem, Melanie A. McNeil, Philippe Dubois, Robert M. Waymouth, Hans W. Horn, Julia E. Rice, James L. Hedrick, "Organocatalytic Depolymerization of Poly(ethylene terephthalate)", *Journal of Polymer Science Part A: Polymer Chemistry* Volume 49, Issue 5, pages 1273–1281, 1 March 2011.

Tjio, Melia; Lee, Victor Y.; Kellock, Andrew J.; Frommer, Jane E.; Risk, William P.; Jefferson, Michael; McNeil, Melanie; Miller, Robert D.; Sly, Joseph. Star polymer templated electroless deposition of plasmonic metal nanostructures. Abstracts of Papers, 239th ACS National Meeting, San Francisco, CA, United States, March 21-25, 2010 (2010)

Nuno, Hector; Lee, Victor Y.; Shah, Shimul K.; Krupp, Leslie; McNeil, Melanie; Miller, Robert D.; Sly, Joseph. Star polymer templated, dye occluded, functionalized silica nanoparticles for optoelectronic applications. Abstracts of Papers, 239th ACS National Meeting, San Francisco, CA, United States, March 21-25, 2010 (2010)

Duhamel, P., Bonifacio, C., Chang, L., McNeil, M., Magbitang, T., Frommer, J., Lee, V., Park, O., Pl., Jefferson, M., Risk, W., Kim, H., Sly, J., and Miller, R., "Nanostructuring Porous Evanescent Wave Biosensors," Proceedings of the 235<sup>th</sup> ACS National Meeting, New Orleans, LA (2008).

Joseph Sly, J. D. Jeyaprakash Samuel, Cecile S. Bonifacio, Lilian Chang, Victor Y. Lee, Melanie McNeil, William P. Risk, C. Michael Jefferson, and Functionalized Star-polymers and Epitaxial Polyvalent Self-assembly," presented at American Chemical Society Meeting, Chicago, IL (2007).

Joseph Sly, Cecile Bonifacio, Lilian Chang, Eric Appel, James L Hedrick, Melanie McNeil, C. M Jefferson, William P Risk and Robert D Miller, "Nanostructured Thin Films From Biodegradable Star Polymer Occlusion Complexes: A Versatile and Controlled Platform for Layered Surface Based Drug Delivery," Poster FF2.9, Materials Research Society Fall Meeting, Boston, MA (2008).

Joseph Sly, Fatemeh Parayandeh, Cecile Bonifacio, Lilian Chang, Pierre Duhamel, Melanie McNeil, C. M Jefferson, William Risk, Andre Knoesen and Robert D Miller; "Combining Chemical and Physical Molecular Recognition Elements for Enhancing Surface Plasmon Resonance Based Biodetection," Poster AA10.5, Materials Research Society Fall Meeting, Boston, MA (2008).

Tjio, M.; Lee, V.; Kellock, A.; Frommer, J.; Risk, W.; Jefferson, C.; McNeil, M.; Miller, R.; Sly, J.; "Star polymer templated electroless deposition of plasmonic metal nanostructures." PMSE Preprints (2010).

Nuno, H.; Lee, V.; Shah, S.; Krupp, L.; McNeil, M.; Miller, R.; Sly, J.; "Star polymer templated, dye occluded, functionalized silica nanoparticles for optoelectronic applications." Polymer Preprints (2010).

Duhamel, P., Bonifacio, C., Chang, L., McNeil, M., Magbitang, T., Frommer, J., Lee, V., Park, O., Pl., Jefferson, M., Risk, W., Kim, H., Sly, J., and Miller, R., "Nanostructuring Porous Evanescent Wave Biosensors," Proceedings of the 235<sup>th</sup> ACS National Meeting, New Orleans, LA (2008).

#### **CPIMA Forum 2009 Stanford University**

Organocatalytic Decomposition of Polyethylene Terephthalate Involving TBD

Julien M. Lecuyer<sup>1</sup>, James. L. Hedrick<sup>2</sup>, Kazuki Fukushima<sup>2</sup>, Melanie A. McNeil<sup>1</sup>

#### **CPIMA Forum 2008, Stanford University**

Automating Molecular Self-Assembly: Programmable Mechanized Processing for Layered Star-polymer Thin Film Formation, Monica Kapil, Cecile S. Bonifacio, Lilian Chang, Fatemeh Parayandeh, Melanie McNeil, C. Michael Jefferson, Robert D. Miller, Joseph Sly

Composite Nanoparticle Thin Film Materials Derived From Organometallic-driven Layered Self-assembly of Polyvalent Star-polymer Building Blocks, Lilian Chang, Cecile S. Bonifacio, Melia Tjio, Miri Kazes, Alshakim Nelson, Melanie McNeil, Robert D. Miller, Joseph Sly

Functional Thin Film Materials Derived From Electrostatically-driven Layered Self-assembly of Polyvalent Star-polymer Building Blocks, Cecile S. Bonifacio, Lilian Chang, Eric A. Appel, Melanie McNeil, C. Michael Jefferson, William P. Risk, Joseph Sly, Robert D. Miller

Electroless Templated Growth of Plasmonic Structures, Melia Tjio, Lilian Chang, Cecile S. Bonifacio, Melanie McNeil, C. Michael Jefferson, William P. Risk, Robert D. Miller, Joseph Sly

Tandem Molecular Recognition Motifs for Enhanced SPR-based Biodetection, Fatemeh Parayandeh, Cecile S. Bonifacio, Lilian Chang, Hector Nuno, Melanie McNeil, Andre Knoesen, Joseph Sly, Robert D. Miller

Sly, J.; Bonifacio, C. S.; Chang, L.; Glab, K. L.; Lee, V. Y.; McNeil, M.; Jefferson, C. M.; Frommer, J. E.; Risk, W. P.; Miller, R. D.; "Reaching for the Stars: Layered Polyvalent Self-Assembly of Hyperbranched Pigment Arrays". PMSE Preprints, 97, 200-201, 2007.

J. Sly, J. D. Jeyaprakash Samuel, C. S. Bonifacio, L. Chang, V. Y. Lee, M. McNeil, W. P. Risk, C. M. Jefferson, and R. D. Miller, "*Versatile Layer-by-Layer Surface Modification Using Functionalized Star-polymers and Epitaxial Polyvalent Self-assembly*," Presented at American Chemical Society Meeting, Chicago, IL (March 2007).

R. Scheffler, L. Q. Ye and M. McNeil, Electrodeposition of Bismuth Telluride Nanowires for Thermoelectric Applications: Synthesis, Characterization, and Properties, Proceedings of Annual Meeting of American Institute of Chemical Engineers, November (2006).

A. Mao, H.T. Ng, P. Nguyen, M. McNeil, and M. Meyyappan, "Silicon Nanowire Synthesis by a Vapor-Liquid-Solid Approach," J. Nanosci. Nanotech. 2005, **5**, pp. 831-835.

McNeil, M., Stoyanova, L., Rech, S., *Building Molecular Biology Laboratory Skills in Chemical Engineering Students*", Chemical Engineering Education, Summer 2005.

Komives, C., Rech, S., McNeil, M., *Laboratory Experiment on Gene Subcloning for Chemical Engineering Students*, Chemical Engineering Education, Summer 2004, pp. 212 - 221.

P. Nguyen, H.T. Ng, J. Kong, A.M. Cassell, R. Quinn, J. Li, J. Han, M. McNeil, and M. Meyyappan, *Epitaxial Directional Growth of Indium-Doped Tin Oxide Nanowire Arrays*, Nano Lett. 2003, **3(7)**, 925-928.

Wander, D. S., Yang, F., McNeil, M and Lustig, B. "Scoring DNA sequence alignment using energetics of hybridization" Proceedings of Annual Meeting of American Institute of Chemical Engineers, San Francisco, (2003).

J. Kaur, A. Srivastava, P. Tummala, M. McNeil, and B. Lustig., *Ribosomal RNA large subunit secondary structure: Prediction for four Archea organisms*, Fourteenth Annual California State University Biotechnology Symposium, 2002, 39.

M.A. McNeil, J. Boothby, and P. Stacks, *Development of a Multi-Disciplinary Biochemical Engineering Laboratory*, Speaker at the 1996 American Society for Engineering Education Summer National Meeting, Washington D.C.

D.A. Cacciatore, and M.A. McNeil, *Applications of Biological Treatment to Industrial Waste*, BioCycle, October 1995, pp. 61-64.

#### **HONORS, AWARDS**

Awarded SJSU COE McCoy Family Faculty Excellence in Service Award	5/11
Awarded N. California American Institute of Chemical Engineers Teaching Excellence Award	4/96
Awarded 1995 Dow Outstanding New Faculty Award	4/95

#### **Research and Curriculum Development Grants Awarded**

1991	PI \$44,496 NSF Instrumentation and Laboratory Improvement Grant for development of a Hazardous Waste Management Laboratory
1992	PI \$ 8000 University Foundation Research Grant grant for Bioremediation Research
1992	PI \$75,000/year research grant by Dynacraft Corp. for Alloy Wettability Study

- 1993 Awarded \$75,600 research grant by NSF subcontract for Bioremediation with co-PI Dr. Rhea Williamson
- 1995 PI with two co-PIs (Drs. Pam Stack and John Boothby) \$25,000 Camille and Henry Dreyfus Grant, Development of a Biochemical Engineering Laboratory
- 1995 PI \$45,000 research grant by EPRI to study corrosion in boiling water reactors
- 1997 PI \$45,000 by EPRI to continue study of corrosion in boiling water reactors
- 1998 PI with 2 co-PIs \$230,000 as lead PI from Fund for Improvement of PostSecondary Education for Development of an Industry-driven Environmental Health and Safety Degree Program
- 1998 PI \$54,000 by EPRI to continue study of corrosion in boiling water reactors
- 1999 PI \$54,000 by EPRI to expand study of corrosion in boiling water reactors
- 1999 Director of \$100,000 grant from City of San Jose Environmental Services Division
- 2001 Co-PI with one other PI (Dr. Claire Komives) \$ 175,000 from NSF CCLI Program for Acquisition of Equipment for a Bioprocess Engineering Laboratory NSF #0088653
- 2001 Co-PI with one other PI (Dr. Claire Komives) \$ 26,000 California Workforce Initiative Grant
- 2004 PI - \$15,000 research grant from iSagacity to study corrosion in a high temperature, high pressure, ultra-low contaminant autoclave system.
- 2005 Co-PI (with five others, PI was Dr. Emily Allen) Defense Advanced Research Projects Agency (DARPA) contract, \$500,000
- 2006 Key Personnel on \$910,000 contract from Defense Microelectronics Activity (DMEA)
- 2007 Key Personnel on \$930,000 contract from Defense Microelectronics Activity (DMEA)
- 2008 Key Personnel on \$1,00,000 contract from Defense Microelectronics Activity (DMEA)
- 2010 PI with two co-PIs (Drs. Maryam Mobed-Miremadi and Clever Ouverney) \$14,379 from the CSU Program for Education and Research in Biotechnology (CSUPERB) Programmatic Development Grant for “Implementation of Introduction to Bioengineering Laboratory Course”
- 2011 PI with two co-PIs (Drs. Maryam Mobed-Miremadi and Satya Prakash) \$21,700 CSU Program for Education and Research in Biotechnology (CSUPERB) Joint Venture Program: “Bio-Printing of Mammalian Cells”