

Curriculum Vitae

Shaopeng Wang

Associate Research Professor

Center for Bioelectronics and Biosensors, The BioDesign Institute, Arizona State University
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Education

- Ph. D. in Physical Chemistry, University of Miami, Miami, Florida, 1999
- M. S. in Biophysics, Tsinghua University, Beijing, China, 1993
- B. S. in Biological Sciences & Biotechnology, Tsinghua University, Beijing, China, 1990

Research Interests

- Optical and electrochemical sensing for chemical and biological targets: surface plasmon resonance sensors, electrochemical microring resonator sensors for detection and monitor of chemical, biological molecules and living cells
- Biological and medical application of nanomaterials: nanoparticle based therapeutics for cancer treatment and luminescence nanoparticles for functional imaging and sensing

Professional Experiences

Center for Bioelectronics and Biosensors, Arizona State University, Tempe, AZ, Dec 1, 2008-present, Associate Professor, Research

- Conducting research and development on optical biosensors for biomedical applications.

Nomadics Inc., Stillwater, OK, 2001 – Dec 1, 2008, Senior Scientist, Principle Investigator

- Conducted research and development on several nanoparticle related projects for LED, sensing, fluorescence labeling, and therapeutic applications, and had hands-on experiences on nanoparticle synthesis, surface modification, conjugation and characterization.
- Conducted research and development on surface plasmon resonance spectroscopy based sensors, amplified fluorescence polymer based sensors, and cell based sensors, and had hands-on experiences on optical instrument design and implementation.
- Conducted research and development on several tissue-engineering projects that used inverted colloidal crystal as tissue scaffold for different applications, and had hands-on experiences on mammal cell culture and characterization.

Florida International University, Miami, FL, 1999 – 2001, Postdoctoral Research Associate

- Conducted research and development on multi-wavelength surface plasmon resonance spectroscopy,
- Conducted research on chemical sensor and biosensors based on optical and nanotechnology.

University of Miami, Miami, FL, 1994 – 1999, Graduate Teaching and Research Assistant

- Taught laboratory classes of general chemistry and organic chemistry.

- Conducted research on Langmuir monolayer and Langmuir-Blodgett films.

Professional services

Membership

- 1995- Member, American Chemical Society
- 1995- Member, Beta Chapter of Alpha Epsilon Lambda
- 2003-2004 Member, Tissue engineering Society International
- 2004-2005 Member, Association for Laboratory Automation
- 2009- Member, the Electrochemical Society

Referee

Journal of the American Chemical Society, Langmuir, Nano letter, ACS nano, Colloids and Surfaces B, Sensors & Actuators B, Journal of Biomedical Nanotechnology, Environmental Science and Technology, Biosensors and Bioelectronics, PLoS One, and Journal of Nanoscience and Nanotechnology

Proposal Reviewer

- ACS-Petroleum Research Fund
- U.S. Civilian Research and Development Foundation
- National Institute of Health

Research Support

Completed

Contract # W81XWH-05-C-0128 (DOD), 05/20/05 – 11/30/09

Title: 3D Scaffold and Stem Cell-Based Bioengineered Skin for Treatment of Cutaneous Vesicant Injury

Description: Develop 3D scaffold and stem cell-based bioengineered skin for treatment of cutaneous vesicant injury.

Role on Project: PI, Co-PI, Note that since Dec 1, 2008, I am no longer work on this project due to job change

Contract # W81XWH-05-C-0101 (DOD), 02/01/05 – 03/03/08

Title: Nanoparticle Self-Lighting Photodynamic Therapy for Ovarian Cancer Treatment

Description: Design and fabricate nanoparticle self-lighting photodynamic therapy for ovarian cancer treatment

Role on Project: PI.

Contract # W81XWH-06-C-0038 (DOD), 12/01/05 – 12/30/06

Title: Rapid Cell-based Toxicity Sensor Using Integrated Micro Ring-resonators as Signal Transducer

Description: Develop a rapid cell-based toxicity sensor using integrated microring resonators as signal transducer.

Role on Project: PI

Contract # W81XWH-04-C-0139 (DARPA), 10/01/05 – 5/31/06

Title: Accelerated Vaccine Creation and Testing

Description: Develop artificial human immune system for accelerated vaccine creation and testing, including development of 3D tissue construct and in-situ optical sensing technology to monitor tissue growth.

Role on Project: Technical lead

Contract # 6302 and #6443 (OCAST), 07/01/03 – 9/30/05

Title: AR 03(2)-068, Development of Artificial Tissue Constructs

Description: This project aims toward the design of a rigid, porous ex vivo cell scaffold that mimics the structure of bone marrow by using nanomaterials. This scaffold will be used to support stem cell expansion and differentiation.

Role on Project: PI

Contract # DE-FG02-04ER84022 (DOE), 07/13/04 – 04/12/05

Title: Surface Plasmon Resonance Sensor for Radionuclides

Description: Develop a portable sensor based on surface plasmon resonance spectroscopy and anodic stripping voltammetry to detect radionuclides and other analytes of interest for environmental monitoring, industrial chemical detection, biomedical, and homeland security applications.

Role on Project: PI

Contract # DAMD17-02-1-0702 (DARPA), 10/01/02 – 3/31/04

Title: 3D Tissue Constructs by Sequential Layering for Ex-vivo Immune System

Description: Develop inverted colloidal scaffolds for 3D cell and tissue culture for the construction of artificial human immune system.

Role on Project: Technical lead

Contract # DMI-0214696 (NSF), 07/01/2002 – 12/31/2002

Title: Trace Metal Ion Sensor based on High Resolution Surface Plasmon Resonance and Anodic Stripping Voltammetry

Description: Develop a highly sensitive sensor based on surface plasmon resonance spectroscopy and anodic stripping voltammetry to detect trace metal ions of interest for environmental monitoring, industrial chemical detection, biomedical, and homeland security applications.

Role on Project: PI

Honors and Awards

- *Excellence in Graduate Academic Achievement and Research Creativity*, Department of Chemistry, College of Arts and Sciences, University of Miami, 1999
- *Elected to Who's Who Among Students in American Universities & Colleges*, University of Miami, 1999
- *First Prize of Physical Science in the Third Annual UM Graduate Student Research & Creativity Forum*, University of Miami, 1998

- *Outstanding Graduate Student Award*, Department of Chemistry, University of Miami, 1998
- *Excellence Graduate Research Award*, Department of Chemistry, University of Miami, 1998
- *Graduate Teaching Assistantship*, University of Miami, 1994-1998
- *Max and Peggy Kriloff Graduate Student Travel Scholarship*, University of Miami, 1997
- *Best Student Presentation Award*, Colloid and Surface Chemistry Division's Poster Session, 211th American Chemistry Society National Meeting, New Orleans, 1996
- *Laboratory Construction Award*, Tsinghua University, 1993
- *Mr. Hua Luogeng Memorial Fellowship*, Tsinghua University, 1993
- *Travel Fellowship*, 11th International Biophysics Congress, 1993
- *Guanghua Scholarship*, Tsinghua University, 1991
- *Experimental Technique Award*, Tsinghua University, 1990
- *Student Scientific and Technology Competition Award*, Tsinghua University, 1987

Publications

Peer reviewed journal articles

1. Xiaonan Shan, Urmez Patel, Shaopeng Wang, Rodrigo Iglesias, N. J. Tao, Imaging Local Electrochemical Current Via Surface Plasmon Resonance, *Science*, 2010, 327, 1363.
2. Xinping Huang, Shaopeng Wang, Xiaonan Shan, Xijun Chang, Nongjian Tao, Flow-through Electrochemical Surface Plasmon Resonance: Detection of intermediate reaction products, *Journal of Electroanalytical Chemistry*, 2010, DOI:10.1016/j.jelechem.2009.12.027
3. Shaopeng Wang, X. Huang, X. Shan, K. J. Foley, N. J. Tao, Electrochemical Surface Plasmon Resonance: Basic Formalism and Experimental Validation, *Analytical Chemistry*, 2010, 82(3), 935-941. DOI: 10.1021/ac902178f
4. X. Shan, X. Huang, K. J. Foley, P. Zhang, K. Chen, S. Wang, and N. J. Tao, Measuring Surface Charge Density and Particle Height Using Surface Plasmon Resonance Technique, *Analytical Chemistry*, 2010, 82(1), 234-240. DOI: 10.1021/ac901816z
5. S. Wang, A. Ramachandran, S. J. Ja, Integrated Microring-Resonator Biosensors for Monitoring of Cell Growth and Detection of Toxic Chemicals in Water, *Biosensors and Bioelectronics*, 2009, 24, 3061–3066. DOI: 10.1016/j.bios.2009.03.027.
6. J. E. Nichols, J. Cortiella, J. Lee, J. A. Niles, M. Cuddihy, S. Wang, A. Cantu, R. Mlcak, E. Valdivia, R. Yancy, J. Bielitzki, M. L. McClure, N. A. Kotov. In vitro analog of human bone marrow from 3D scaffolds with biomimetic inverted colloidal crystal geometry, *Biomaterials*, 30 (6), p.1071-1079, Feb 2009.
7. Y. Zhang, W. Chen, S. Wang, Y. Liu, L. Liu, C. Pope. Phototoxicity of zinc oxide nanoparticle conjugates in human ovarian cancer NIH: OVCAR-3 cells. *J. Biomed. Nanotech.* 2008, 4, 432-438.

8. W. Chen, S. L. Westcott, S. Wang, and Y. Liu, Dose dependent x-ray luminescence in $\text{MgF}_2:\text{Eu}^{2+}$, Mn^{2+} phosphors, *J. Appl. Phys.* 103, 113103 (2008); DOI:10.1063/1.2937084.
9. Y. Liu, Y. Zhang, S. Wang, C. Pope, and W. Chen, Optical behaviors of ZnO-porphyrin conjugates and their potential applications for cancer treatment, *Applied Physics Letters*, 2008, 92, 143901. DOI: 10.1063/1.2908211.
10. Y. Liu, W. Chen, S. Wang, A. Joly, S. Westcott, and B. Woo, X-ray Luminescence of $\text{LaF}_3:\text{Tb}$ and $\text{LaF}_3:\text{Ce,Tb}$ Water Soluble Nanoparticles, *Journal of Applied Physics*, 2008, 103, 063105. DOI: 10.1063/1.2890148.
11. Y. Liu, W. Chen, S. Wang, A. Joly, Investigation of Water-Soluble X-ray Luminescence Nanoparticles for Photodynamic Activation, *Applied Physics Letter*, 2008, 92, 043901. **Note:** This article was selected for the February 11, 2008 issue of Virtual Journal of Nanoscale Science & Technology (<http://www.vjnano.org>), and for the February 1, 2008 issue of Virtual Journal of Biological Physics Research (<http://www.vjbio.org>).
12. A. Ramachandran, S. Wang, J. Clarke, S. J. Ja, D. Goad, L. Wald, E. M. Flood, E. Knobbe, J. V. Hryniewicz, S. T. Chu, D. Gill, W. Chen, O. King, and B. E. Little, A Universal Biosensing Platform Based on Optical Micro-Ring Resonators, *Biosensors and Bioelectronics*, 2008, 23, 939–944. DOI:10.1016/j.bios.2007.09.007.
13. S. Wang, E. S. Forzani, N. J. Tao, Detection of Heavy Metal Ions in Water by High Resolution Surface Plasmon Resonance Spectroscopy Combined with Anodic Stripping Voltammetry, *Analytical Chemistry*, 2007, 79(12), 4427-4432, DOI: 10.1021/ac0621773.
14. Y. Liu, S. Wang, J. Krouse, N. A. Kotov, M. Eghtedari, G. Vargas, and M. Motamedi, Rapid Aqueous Photo-polymerization Route to Polymer and Polymer-composite Hydrogel 3D Inverted Colloidal Crystal Scaffolds, *Journal of Biomedical Materials Research: part A*, 2007, DOI: 10.1002/jbm.a.31199.
15. A. G. Joly, W. Chen, J. Zhang, and S. Wang, Electronic Energy Relaxation and Luminescence Decay Dynamics of Eu^{3+} in $\text{Zn}_2\text{SiO}_4:\text{Eu}^{3+}$ Phosphors, *Journal of Luminescence*, 2007, 126, 491–496.
16. Y. Liu and S. Wang, 3D Inverted Opal Hydrogel Scaffolds with Oxygen Sensing Capability, *Colloids and Surfaces B: Biointerfaces*, 2007, 58(1), 8-13.
17. F. Sua, B. Ma, K. Ding, G. Lia, S. Wang, W. Chen, A. G. Joly, and D. E. McCready, Luminescence Temperature and Pressure Studies of Zn_2SiO_4 Phosphors doped with Mn^{2+} and Eu^{3+} ions, *Journal of Luminescence*, 2006, 116, 117–126.
18. S. Sachin, S. Wang, and N. A. Kotov, Cell Distribution Profiles in Three-Dimensional Scaffolds with Inverted Colloidal Crystal Geometry: Modeling and Experimental Investigations, *Small*, 2005, 1(12), 1208-1214.
19. Y. Liu, S. Wang, and N. A. Kotov, A Floating Self-Assembly Route to Colloidal Crystal Templates for 3D Cell Scaffolds, *Chemistry of Materials*, 2005, 17(20); 4918-4924 (DOI: 10.1021/cm048050g).
20. W. Chen, J.-O. Bovin, S. Wang, A. G. Joly, Y. Wang, and P. M. A. Sherwood, Fabrication and Luminescence of $\text{ZnS}:\text{Mn}^{2+}$ Nanoflowers, *Journal of Nanoscience and Nanotechnology*, 2005, 5, 1-14.
21. Y. Zhang, S. Wang, and N. A. Kotov, Inverted Colloidal Crystal Hydrogel Matrices as Three-Dimensional (3D) Cell Scaffolds, *Advanced Functional Materials*, 2005, 15, 728-731.

22. W. Chen, S. Wang, S. L. Westcott, J. Zhang, K. Dou, A. G. Joly, and D. E. McCready, Structure and Luminescence of BaFBr:Eu(2+) and BaFBr:Eu(2+), Tb(3+) Phosphors and Thin Films, *Journal of Applied Physics*, 2005, 97, 083506-083514.
23. N. A. Kotov, Y. Liu, S. Wang, C. Cumming, M. Eghtedari, G. Vargas, M. Motamedi, J. Nichols, J. Cortiella, Inverted Colloidal Crystals as 3D Cell Scaffolds, *Langmuir*, 2004, 20, 19, 7887 - 7892 (DOI: 10.1021/la049958o, cover article).
24. W. Chen, J-O. Malm, A. G. Joly, S. Wang, F. Su and G. Li, Full-Color from In₂S₃ and In₂S₃:Eu³⁺ Nanoparticles, *Journal of Physical Chemistry B*, 2004; 108; 11927-11934.
25. W. Chen, A. G. Joly, J-O. Malm, J.-O. Bovin, and S. Wang, Full-Color Emission and Temperature Dependence of the Luminescence in Poly-P-phenylene ethynylene-ZnS/Mn²⁺ Composite Particles, *Journal of Physical Chemistry B*, 2003, 107(27), 6544-6551.
26. S. Wang, S. Westcott, and W. Chen, Nanoparticle Luminescence Thermometry, *Journal of Physical Chemistry B*, 2002, 106, 11203-11209.
27. S. Wang, N. Mamedova, N. A. Kotov, W. Chen, and J. Studer, Antigen/Antibody Immunocomplex from CdTe Nanoparticle Bioconjugates, *Nano Letter*, 2002, 2(8), 817-822.
28. S. Wang, S. Boussaad, and N. J. Tao, Surface Plasmon Resonance Enhanced Absorption Spectroscopy, *Review of Scientific Instruments*, 2001, 72, 3055-3060.
29. S. Wang, S. Boussaad, S. Wong, and N. J. Tao, High-sensitivity Stark Spectroscopy of Organic dsorbates Based on Detection of Surface Plasmon Resonance, *Analytical Chemistry*, 2000, 72, 4003-4008.
30. S. Wang, Q. Zhang, P. K. Datta, R. E. Gawley, and R. M. Leblanc, Amphiphilic Anthracyl Crown Ether – a Langmuir and Langmuir-Schaefer Films Study, *Langmuir*, 2000, 16(10), 4607-4612.
31. S. Wang, R. Lunn, M. P. Krafft, and R. M. Leblanc, One and a Half Layer? Mixed Langmuir Monolayer of 10,12-pentacosadiynoic Acid and a Semi-fluorinated Tetracosane, *Langmuir*, 2000, 16(6); 2882-2886.
32. Q. Huo, S. Wang, A. Pisseloup, D. Verma, and R. M. Leblanc, Unusual Chromatic Properties Observed from Polymerized Dipeptide Diacetylenes, *Chemical Communications*, 1999, 1601-1602.
33. R. E. Gawley, Q. Zhang, P. I. Higgs, S. Wang, and R. M. Leblanc, Anthracylmythyl Crown Ethers as Fluorescence Sensors of Saxitoxin, *Tetrahedron Letters*, 1999, 5461-5464. Corrigendum, p6135.
34. S. Wang, J. Ramirez, P. G. Wang, and R. M. Leblanc, Surface Chemistry, Topography and Spectroscopy of Mixed-monolayer of 10,12-pentacosadiynoic Acid and its Mannoside Derivative at the Air-water Interface, *Langmuir*, 1999, 15, 5623-5629.
35. S. Wang and R. M. Leblanc, Molecular Recognition of Concanavalin A on Mannoside Lipid Monolayer at Air/Water Interface, *Biochimica et Biophysica Acta - Biomembranes*, 1999, 1419, 307-312.
36. S. Wang, S. Vidon, and R. M. Leblanc, Chemical and Photochemical Dual Polymerization in a Mixed Langmuir Monolayer of Diacetylene Derivatives and Octadecyltrimethoxysilane, *Journal of Colloid and Interface Science*, 1998, 207, 303-308.
37. S. Wang, R. M. Leblanc, F. Arias, and L. Echegoyen, Study of Langmuir Monolayers of Crown-ether C60 Derivatives and their Interaction with Different Subphase Ions, *Thin Solid Film*, 1998, 327, 141-144.

38. F. Cardullo, F. Diederich, L. Echegoyen, T. Habicher, N. Jayaraman, R. M. Leblanc, J. F. Stoddart, and S. Wang, Stable Langmuir and Langmuir-Blodgett films of Fullerene-Glycodendron Conjugates, *Langmuir*, 1998, *14*, 1955-1959.
39. Y. J. Li; Y. Fan; X. G. Ren; L. G. Zhang; D. P. Jiang; A. D. Lu; S. Wang, and R. M. Leblanc, Synthesis of a Substituted Phthalocyaninato-Polysiloxane and its Langmuir-Blodgett Films, *Journal of Porphyrins and Phthalocyanines*, 1998, *2*, 1-4.
40. L. Dziri, S. Boussaad, S. Wang and R. M. Leblanc, Surface Topography of Acetylcholinesterase in Langmuir and Langmuir-Blodgett Films, *The Journal of Physical Chemistry*, 1997, *101*(34), 6741-6748.
41. S. Wang, R. M. Leblanc, F. Arias, and L. Echegoyen, Surface and Optical Properties of Langmuir and LB films of a Crown-ether C60 Derivative, *Langmuir*, 1997, *13*, 1672-1676.
42. S. Wang, Y. Li, L. Shao, J. Ramirez, P. G. Wang, and R. M. Leblanc, Excess Free Energies of Interaction between 10,12-pentacosadiynoic Acid (PDA) and its Mannoside Derivative (MPDA). A Mixed-Monolayer Study, *Langmuir*, 1997, *13*, 1677-1681.
43. Z. Liu, H. Qin, C. Xiao, C. Wen, S. Wang, and S. Sui, Specific Binding of Avidin to Biotin Containing Lipid Lamella Surfaces Studied with Monolayers and Liposomes. *European Biophysics Journal*, 1995, *24*, 31-38.
44. Z. Liu, S. Wang, C. Wen, and S. Sui, Interaction between Avidin and Membrane Bond Model Receptor, *Science in China*, 1994, *24*(11), 1162-1170.
45. S. Wang and S. Sui, In Situ Observation of Lipid Monolayers at Air/Water Interface by Micro-Fluorescence Film Balance, *Progress in Natural Science*, 1994, *4*(4), 410-416.
46. S. Wang, C. Wen and S. Sui, Influence of Flexibility of Receptors on Specific Binding of Avidin onto Lipid Membrane, *Progress in Natural Science*, 1994, *4*(3), 375-380.
47. S. Sui and S. Wang, Fusion of Phospholipid Vesicles with Langmuir Lipid Monolayer, *Thin Solid Films*, 1992, *210*, 57-59.
48. S. Wang and S. Sui, Interaction of Vesicles with Phospholipid Monolayer, *Acta Biophysica Sinica*, 1992, *8*(1), 148-153.
49. S. Sui and S. Wang, Langmuir-Blodgett Film and its Application in Biology (review), *Progress in Biological Engineering*, 1991, *11*(1), 1-10.
50. S. Wang and S. Sui, Study on the Properties of Cholesterol-Containing Phospholipid Monolayers (LB Film), *Acta Biophysica Sinica*, 1991, *7*(3), 328-334.
51. S. Sui, H. Wu, and S. Wang, Langmuir-Blodgett Film Balance, *Experimental Technique and Management*, 1991, *8*(5), 28-31.

Book chapters

1. S. Wang and N. A. Kotov, book chapter: Nanoparticle Labeled Antibodies and Antigens, *Dekker Encyclopedia of Nanoscience and Nanotechnology*, Editors: James A. Schwarz, Cristian I. Contescu and Karol Putyera, Marcel Dekker, Inc., New York, 2004, Vol 1, No. 1, 1647-1653 (ISBN: 0-8247-5055-1, 0-8247-5046-2).
2. W. Chen, A.G. Joly, and S. Wang, book chapter: Luminescence of Semiconductor Nanoparticles, *Encyclopedia of Nanoscience and Nanotechnology*, American Scientific Publishers, Los Angeles, 2004, Vol. 4, 689-718 (ISBN: 1-58883-001-2).
3. S. Wang, S. Boussaad, and N. J. Tao, book chapter: Surface Plasmon Resonance

Spectroscopy: Applications in Protein Adsorption and Electrochemistry, in *Biomolecular Films: Design, Function, and Applications*, Editor: Jim Rusling, Marcel Dekker, Inc., New York, 2003, 213-252 (ISBN: 0-8247-0899-7).

Conference Proceedings

1. A. Ramachandran, S. Ja, J. Clarke, E. Flood, G. Frye-Mason, D. Goad, B. Little, L. Wald, S. Wang, E. T. Knobbe, Optical Microring Resonators in Trace chemical and Biosensing Applications, *The 9th CBW Protection Symposium – May 22-27, 2007*, Svenska Mässan/The Swedish Exhibition and Congress Centre, Gothenburg.
2. Y. Liu, S. Wang, N. A. Kotov, C. Cumming, J. E. Nichols, J. Cortiella, and M. Motamedi, Preparation of Ordered 3D cell Scaffolds with LBL Surface Modification, *Polymeric Materials Science and Engineering*, 2004, 90, 433-434.
3. S. Wang, Y. Liu, N. A. Kotov, A. Mamendov, S. Westcott, C. Cumming, J. E. Nichols, J. Cortiella, and M. Motamedi, 3D Cell Growth on LBL Coated, Bone marrow Mimicking Scaffolds, *Polymeric Materials Science and Engineering*, 2004, 90, 789.

Conference Presentations

1. N.J. Tao, K. Foley, S. Wang, X. Shan, Surface Impedance Microscopy for Biomedical Applications, *The 215th Electrochemical Society Meeting*, San Francisco, California, May 27, 2009
2. Y. Zhang, W. Chen, S. Wang, Y. Liu and C. Pope, Reactive Oxygen Species Mediated Phototoxicity of Zinc Oxide Nanoparticle Conjugates in Human Ovarian cancer Cells. *Annual Meeting of the South Central Chapter, Society of Toxicology, National Center for Toxicological Research*, Jefferson, AR, Sept 18, 2008.
3. Y. Zhang, Y. Liu, S. Wang, W. Chen, J. Liu, C. Pope. Phototoxicity of Nanoparticle Conjugates in Ovarian Cancer Cell, *Annual Meeting, Oklahoma Experimental Program to Stimulate Competitive Research (EPSCoR)*, Oklahoma City, OK, March 7, 2008.
4. Y. Zhang, Y. Liu, S. Wang, W. Chen, J. Liu, C. Pope. Self-lighting Photodynamic Therapy of Nanoparticle Conjugates in Vitro and Ovarian Tumor Model Development in vivo, *Annual Meeting, Phi Zeta Research Society*, Oklahoma State University, Stillwater, OK, March 16, 2008.
5. S. Wang, Y. Liu, S. Westcott, and W. Chen, Luminescence Nanoparticles: Potentials for In-vivo Application, *The 7th Annual UT Southwestern In-Vivo Cancer Cellular and Molecular Imaging Symposium Vascular Imaging and Therapeutic Targeting in Cancer*, Dallas, Texas, Oct 16-17, 2007.
6. S. Wang, Development of Optical Sensors for Chemical and Biological Targets, invited oral presentation, *2006 Florida Award Symposium, Florida Annual Meeting and Exposition*, Orlando, Florida, May 12, 2006.
7. S. Wang, Sensing Toxic and Bio-hazard Using Optical, Electrochemical and Nanotechnology Combined Approaches, *227th American Chemical Society National Meeting: Division of Industrial and Engineering Chemistry*, Anaheim, CA, March 28-April 1, 2004.
8. S. Wang Y. Liu, N. A. Kotov, A. Mamendov, S. Westcott, C. Cumming, J. E. Nichols, J. Cortiella, and M. Motamedi, 3D Cell Growth on LBL Coated, Bone Marrow Mimicking Scaffolds, *227th American Chemical Society National Meeting: Physical Chemistry Division*, Anaheim, CA, March 28-April 1, 2004.

9. Y. Liu, S. Wang, N. A. Kotov, C. Cumming, J. E. Nichols, J. Cortiella, and M. Motamedi, Preparation of Ordered 3D cell Scaffolds with LBL Surface Modification, *227th American Chemical Society National Meeting: Physical Chemistry Division*, Anaheim, CA, March 28-April 1, 2004.
10. Y. Liu, S. Wang, N. A. Kotov, A. Mamedov, and C. Cumming. Abstracts, *59th Southwest Regional Meeting of the American Chemical Society*, Oklahoma City, OK, October 25-28, 2003.
11. S Wang, N. Mamedova, and N. A. Kotov, Antigen/Antibody Immunocomplex from CdTe Nanoparticle Bioconjugates, *224th American Chemical Society National Meeting: Physical Chemistry Division*, Boston, MA, August 2002.
12. S Wang, N. Mamedova, W. Chen, and N. A. Kotov, Layer-by-Layer Assembled Films from Nanoparticle-Labeled Antibodies and Antigens, *223th American Chemical Society National Meeting: Colloid and Surface Chemistry Division*, Orlando, FL, April 2002.
13. S. Wang, S. Boussaad, S. Wong, and N. J. Tao, Probing Electronic Properties of Adsorbed Molecules with Surface Plasmon Resonance Spectroscopy, *84th CSC Conference and Exhibition*, Montreal, CA, May 2001.
14. S. Wang, S. Boussaad, S. Wong, and N. J. Tao, Applications of High Resolution Surface Plasmon Resonance Spectroscopy, *220th American Chemical Society National Meeting: Colloid and Surface Chemistry Division*, Washington, DC, August 2000.
15. S. Wang, R. Lunn, M. P. Krafft, and R. M. Leblanc, One and a Half Layer? Study of Mixed Langmuir Monolayer of 10,12-Pentacosadiynoic Acid and Semi-fluorinated Tetracosane, *216th American Chemical Society National Meeting: Colloid and Surface Chemistry Division*, Boston, August 1998.
16. S. Wang, S. Vidon, and R. M. Leblanc, Dual Polymerizations in a Mixed Langmuir Monolayer of Diacetylene Derivatives and Octadecyltrimethoxysilane, *215th American Chemical Society National Meeting: Colloid and Surface Chemistry Division*, Dallas, March 1998.
17. S. Wang, R. M. Leblanc, F. Arias, and L. Echegoyen, Study of Langmuir Monolayers of Crown-ether C60 Derivatives and their Interaction with Different Subphase Ions, *LB8: The Eighth International Conference on Organized Molecular Films*, Asilomar, CA, August 1997.
18. S. Wang, R. M. Leblanc, J. Ramirez, and P.G. Wang, Molecular Recognition Studies of Poly-Glyco-diacetylene monolayers and Concanavalin A, *70th Colloid and Surface Science Symposium of American Chemical Society*, Postdam, NY, June 1996.
19. S. Wang, Y. Li, L. Shao, J. Ramirez, P. G. Wang, and R. M. Leblanc, Study of Poly Glyco-diacetylene Monolayers and its Interaction with Concanavalin A, *The Fourth World Congress on Biosensors*, Bangkok, Thailand, May 1996.
20. S. Wang, R. M. Leblanc, J. Ramirez, and P.G. Wang, Surface and optical properties of poly-glyco-diacetylene monolayers, *211th American Chemistry Society National Meeting: Colloid and Surface Chemistry Division*, New Orleans, LA, March 1996.
21. S. Wang, C. Wen, and S. Sui, Influence of Flexibility of Membrane Bound Model Receptor on Avidin Specific Binding, *11th International Biophysics Congress*, Budapest, Hungary, July 1993.
22. S. Sui, S. Wang, H. Qing, C. Wen, and Z. Liu, Specific and Nonspecific Binding of Avidin to Biotin Containing Lipid Layer, *The 6th International Conference on Langmuir-Blodgett*

Films, Canada, July 1993.

23. S. Sui, H. Wu, S. Wang, H. Qin, and W. Xie, Lipid/Protein Interaction Studied with Supported Planar Mono-(Bi-)Layers, *10th Changchun Summer Chemistry Conference on the Topic of Functional Organized System*, Changchun, China, Aug 1991.
24. S. Sui and S. Wang, Interaction of Phospholipid Vesicles with Lipid Monolayer, *The 5th International Conference on Langmuir-Blodgett Films*, Paris, France, Aug 1991.
25. S. Sui and S. Wang, Domain Structure and Phase Behavior of Cholesterol Containing Phospholipid Monolayers Studied by Film Balance and Scanning Electron Microscopy, *The 1990 China-Japan Bilateral Symposium on Langmuir-Blodgett Films*, Beijing, China, Nov. 4- 8, 1990,

Patent and Patent applications

1. N. A. Kotov and S. Wang, 3D Tissue Constructs on the Basis of Colloidal Crystals Surface Modified by Sequential Layering, U.S. patent application Ser. No. 10/460,059. US patent 7,534,610, issue date: 05/19/2009.
2. W. Chen, S. Westcott, J. Zhang, and S. Wang, Energy-Transfer Nanocomposite Materials and Methods of Making the Same, filed 10/28/2005, US Patent Application Serial No. 11/262,470. US patent 7538329, issue date: 05/26/2009.
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