BIOGRAPHICAL SKETCH

Provide the following information for all key personnel.
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NAME	POSITION TITLE
Miranda, Oscar Ramon	Post-Doctoral Associate in Biomedical Devices and Translational Research at Massachusetts Institute of Technology (MIT)

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
Brigham and Women Hospital (BWH) Harvard Medical School Harvard-MIT Health Science and Technology (HST)	Post-Doctoral Fellow	2014	Biomedical Engineering
University of Massachusetts-Amherst	Ph.D	2011	Organic/Nanomaterials/Bio
Villanova University	M.S.	2005	Physical Chemistry/Nanomaterials
Central American University (UCA)	MBA (Post-Graduate)	2000	Bussiness Administration
National University of Engineering (UNI)	BE	1997	Chemical Engineering

A. Positions and Honors.

Positions and Employment

2005-2010 Research Assistant and Teaching Assitant in Chemistry, University of Massachusetts, Amherst, MA
2002-2005 Research Assistant and Teaching Assistant in Chemistry, Villanova University, Villanova, PA
2009 Chemistry Resource Center Instructor (Integrated Science), University of Massachusetts, Amherst, MA
1997-2002 National Consultant to the United Nations Development Organization (UNIDO): Project UNIDO US/NIC/02/05, Project UNIDO US/NIC/97/209 and Project UNIDO US/NIC/94/012, Managua, Nicaragua
1997-2002 National Technical Specialist in Patents of Inventions, Ministry of Economy and Development Managua, Nicaragua
1995-1997 Researcher, Austrian Project BIOMASS (Austrian Technical Cooperation Organization SUCHER & HOLZER) Managua, Nicaragua

Other Experience and Professional Memberships

Other Experiences

2008 Visiting Research Assistant in Chemistry, *Georgia Institute of Technology, Atlanta, GA*
1994-1995 Laboratory Instructor in Chemical Engineering: Organic, Thermodynamic, Mass and Heat Transfer at the National University of Engineering Managua, Nicaragua

Professional Memberships

2013- American Diabetes Association, Member

2013- American College of Rheumatology (ACR), Member

2013- The Endocrine Society, Member

2013- American Association for Cancer Research (AACR)

2013- Federation of American Societies for Experimental Biology (FASEB), Member

2013- American Association of Pharmaceutical Scientists (AAPS), Member

2011- Biomedical Engineering Society (BMES), Member

2011- International Society for Stem Cell Research (ISSCR), Member

2011- Controlled Drug Release Society (CRS), Member

2011- Society for Biomaterials, Member

2011- American Institute of Chemical Engineering (AIChE), Member

2005- Materials Research Society (MRS), Member

2005- American Physics Society (APS), Member

2004- Sigma Xi, The Scientific Research, Member

2003- American Chemical Society (ACS) Member

Honors

2013 **2013 Rheumatology Research Workshop Scholarship Award (ACR and AF)**, **$1,000**
Brigham and Women's Hospital-Harvard Medical School

2012 **Arthritis Foundation Post-Doctoral Fellowship Award (PF)**, **$100,000**
Brigham and Women's Hospital-Harvard Medical School

2012 **NIH 2012 Beta Cell Biology Consortium (BCBC) Retreat Scholarship Award**, **$1,000**
Harvard-MIT (HST), Harvard Stem Cell Institute (HSCI),
Brigham and Women's Hospital and Harvard Medical School

2009 **William E. McEwen Outstanding Graduate Student Award**, **$500**
University of Massachusetts-Amherst

2008 **Graduate Student Travel Grant Award**, **$300**
University of Massachusetts-Amherst

2005 **1st Place SIGMA Xi Research Day**
Villanova University Chapter

2005 **Graduate Student Travel Grand Award**, **$ 500** 2x (**$1,000**)
Villanova University

B. Selected peer-reviewed publications (in chronological order).

Publications & Presentations

Journal	Impact Factor (2013)
Nature Nanotechnology	33.265
Nature Chemistry	23.297
Advanced Materials	15.409
Nano Letter	12.940
ACS Nano	12.033
JACS	11.444
Angewandte Chemie International Edition	11.336
PNAS	9.809
Chemical Science	8.601
Current Opinion in Biotechnology	8.035
Nature Protocols	7.782
Current Opinion in Chemical Biology	7.652
Small	7.514
Clinical Pharmacology & Therapeutics	7.390
Chemical Communications	6.718
Nanomedicine	5.824
Mayo Clinic Proceedings	5.812
BioMacromolecules	5.788
Chemistry: A European Journal	5.696
Environmental Science and Technology	5.481
Crystal Growth and Design	4.558
Langmuir	4.384
Soft Matter	4.151
Analytical and Bioanalytical Chemistry	3.578
Plos One	3.534
Journal of Physical Chemistry B	3.377

Refereed Journal Papers (Total papers: 44; Citations: 2328; h-index: 26; i10index: 38)

Published (Selective)

1. Pablo Gurman, **Oscar R. Miranda**, Yitzhak Rosen, Noel Elman. Clinical Applications of Biomedical Micro-devices for Controlled Drug Delivery. ***Mayo Clinic Proceedings*** **2014**, Accepted **(Ms# 2014-0640)**.

2. James A. Ankrum, **Oscar R. Miranda**, Kelvin S. Ng, Debanjan Sarkar, Chenjie Xu, Jeffrey M. Karp. Engineering cells with intracellular agent-loaded macroparticles to control cell phenotype. ***Nature Protocols*** **2014**, 9, 233.

3. Subinoy Rana, Rubul Mout, Ngoc D. B. Le, Krishnendu Saha, Gülen Yesilbag Tonga, **Oscar R. Miranda**, Caren M. Rotello, Vincent M. Rotello. A multichannel nanosensor for instantaneous readout of cancer drug mechanisms. ***Nature Nanotech*** **2014**, Accepted (**Paper #NNANO-14050870B**).

4. Pablo Gurman, **Oscar R. Miranda**, Alexandra Nathan, Cyrus Washington, Yitzhak Rosen, Noel Elman. Recombinant Tissue Plasminogen Activators (rtPA): A review. **Clinical Pharmacology & Therapeutics 2014**, Accepted **(Paper #2014-0528R**).

5. Praveen K. Vemula, Nikken Wiradharma, James A. Ankrum, **Oscar R. Miranda**, George John, Jeffrey M. Karp. Pro-drugs as self-assembled hydrogels: A new paradigm for biomaterials, ***Curr. Opin. Biotechnol.*** **2013**, 24, 1174.

6. Krishnendu Saha, Sung Tae Kim, Bo Yan, **Oscar R. Miranda**, Felix S. Alfonso, Denis Shlosman and Vincent M. Rotello. Surface Functionality of Nanoparticles Determines Cellular Uptake Mechanisms in Mammalian Cells, ***Small* 2013**, 9, 300.

7. Subinoy Rana, Arvind K. Singla, Avinash Bajaj, S. Gokhan Elci, **Oscar R. Miranda**, Rubul Mout, Bo Yan, Frank R. Jirik, and Vincent M. Rotello. Array-Based Sensing of Metastatic Cells and Tissues Using Nanoparticle-Fluorescent Protein Conjugates. ***ACS Nano* 2012**, 6, 8233.

8. Rochelle R. Rochelle; Karuna Giri; Daniel Moyano; **Oscar R. Miranda**; Benjamin Madden; Daniel J. McCormick; Resham Bhattacharya; Vincent M. Rotello; Jean-Pierre Kocher; Priyabrata Murkherjee. Identifying New Therapeutic Targets via Modulation of Protein Corona Formation by Engineered Nanoparticles, ***PLoS One* 2012**, 7, e33650.

9. Rochelle R. Arvizo; **Oscar R. Miranda**; Daniel F. Moyano; Chad A. Walden; Karuna Guri; Resham Bhattacharya; J. David Robertson; Vincent M. Rotello; Joel M. Reid; Priyabrata Mukherjee. Modulating Pharmacokinetics, Tumor Uptake and Biodistribution by Engineered Nanoparticles, ***PLoS One* 2011**, 6, e24374.

10. **Oscar R. Miranda**; Xiaoning Li; Zheng-Jiang Zhu; Bo Yan; Uwe H. F. Bunz; Vincent M. Rotello. Colorimetric bacteria sensing using a supramolecular enzyme-nanoparticle biosensor, ***J. Am. Chem. Soc.* 2011**, 133, 9650.

11. Rochelle R. Arvizo; Subinoy Rana; **Oscar R. Miranda**; Resham Bhattacharya; Vincent M. Rotello; Priyabrata Mukherjee. Mechanism of anti-angiogenic property of gold nanoparticles: Role of nanoparticle size and surface charge, ***Nanomedicine***, **2011**, 7, 580. **(Front Cover Picture)**.

12. **Oscar R. Miranda**; Brian Creran; Vincent M. Rotello. Array-based sensing with nanoparticles: "Chemical noses" for sensing biomolecules and cell surfaces. ***Curr. Opin. Chem. Bio.* 2010**,14, 728.

13. Rochelle R. Arvizo; **Oscar R. Miranda**; Michael A. Thompson; Christina M. Pabelick; Resham Bhattacharya; J. David Robertson; Vincent M. Rotello; Y. S. Prakash; Priyabrata Mukherjee. Effect of nanoparticle surface charge at the plasma membrane and beyond, ***Nano Lett.* 2010**, 10, 2543.

14. Chandramouleeswaran Subramani; Avinash Bajaj; **Oscar R. Miranda**; Vincent M. Rotello. Biocompatible charged and uncharged surfaces using nanoparticle Films. ***Adv. Mat.* 2010**, 22, 5420.

15. **Oscar R. Miranda**; Hung-Ting Chen; Chang-Cheng You; David E. Mortenson; Xiao-Chao Yang; Uwe H. F. Bunz; Vincent M. Rotello. Enzyme amplified array sensing of proteins in solution and in biofluids, ***J. Am. Chem. Soc.* 2010**, 132, 5285.

16. Avinash Bajaj, **Oscar R. Miranda**; Ronnie L. Phillips, IK-Bum Kim; D. Joseph Jerry, Uwe H. F. Bunz; Vincent Rotello. Array based sensing of normal, cancerous and metastatic cells using conjugated fluorescent polymers, ***J. Am. Chem. Soc.* 2010**, 132, 1018.

17. Bo Yan; Zheng-Jiang Zhu; **Oscar R. Miranda**; Apiwat Chompoosor; Vincent M. Rotello; Richard W. Vachet. Laser desorption/ionization mass spectrometry analysis of monolayer-protected gold nanoparticles, ***Anal. Bioanal. Chem.* 2010**, 396, 1025.

18. Avinash Bajaj; Subinoy Rana; **Oscar R. Miranda**; Joseph C. Yawe; D. Joseph Jerry; Uwe H. F. Bunz; Vincent M. Rotello. Cell surface-based differentiation of cell types and cancer states using a gold nanoparticle-GFP based sensing array, ***Chem. Sci.* 2010**, 1, 134.

19. Mrinmoy De; Subinoy Rana; Handan Akpinar; **Oscar R. Miranda**; Rochelle R. Arvizo; Uwe H. F. Bunz; Vincent M. Rotello. Sensing of proteins in human serum using conjugates of nanoparticles and green fluorescence proteins (GFP), ***Nature Chem.* 2009**, 1, 461. **(Front Cover Picture)**

20. Avinash Bajaj; **Oscar R. Miranda**; Ik-Bum Kim; Ronnie L. Phillips; D. Joseph Jerry; Uwe H. F. Bunz; ; Vincent M. Rotello. Detection and differentiation of normal, cancerous, and metastatic cells using nanoparticle-polymer sensor arrays, ***Proc. Nat. Acad. Sci. (USA)* 2009**, 106, 10912. **(Featured in Chem. & Eng. News (ACS), Science Daily, Times of India, US News and many more) (Among top 20 most read articles in July 2009)**

21. Mrinmoy De; **Oscar R. Miranda**; Subinoy Rana; Vincent M. Rotello. Size dependent protein-nanoparticle self-assembly, ***Chem. Commun.* 2009**, 16, 2157.

22. Ronnie Phillips; **Oscar R. Miranda**; Ik-Bum Kim; David E. Mortenson; Chandramouleeswaran Subramani; Vincent M. Rotello; Uwe H. F. Bunz. Gold nanoparticle-conjugated polymer constructs: Understanding the electrostatic and hydrophobic interactions, ***Soft Matter***, **2009**, 5, 607.

23. Zheng-Jiang Zhu; Partha S. Ghosh; **Oscar R. Miranda**; Richard W. Vachet; Vincent M. Rotello. Multiplexed screening of the cellular uptake of gold nanoparticles using Laser Desorption/Ionization Mass Spectrometry (LDI-MS), ***J. Am. Chem. Soc.* 2008**, *130*, 14139.

24. Ronnie Phillips; **Oscar R. Miranda**; Chang-Cheng You; Vincent M. Rotello; Uwe H. F. Bunz. Rapid and efficient identification of bacteria using gold-nanoparticle–poly(para-phenyleneethynylene) constructs, ***Angew. Chem. Int. Ed.* 2008,** *47*, 2590. **(Inside Cover Picture)**

25. **Oscar R. Miranda**; Chang-Cheng You; Ronnie Phillips; Ik-Bum Kim; Partha S. Ghosh; Uwe H. F. Bunz; Vincent M. Rotello. Array-based sensing of proteins using conjugated polymers, ***J. Am. Chem. Soc*. 2007**, 129(32); 9856.

26. Chang-Cheng You; **Oscar R. Miranda**; Basar Gider; Partha S. Ghosh; Ik-Bum Kim; Belma Erdogan; Sai Archana Krovi; Uwe H. F. Bunz; Vincent M. Rotello. Detection and identification of proteins using nanoparticles-fluorescent polymer "chemical nose" sensors, ***Nature Nanotech.* 2007**, 2, 318.

27. **Oscar R. Miranda**; Norman R. Dollahon; Temer S. Ahmadi. Critical concentrations and role of ascorbic acid (Vitamin C) in the crystallization of gold nanorods within hexadecyltrimethyl ammonium bromide (CTAB)/tetraoctyl ammonium bromide (TOAB) micelles, ***Cryst. Growth Des.* 2006**, 6, 2747.

28. **Oscar R. Miranda**; Temer S. Ahmadi. Effects of intensity and energy of CW UV-Light on the growth of gold nanorods, ***J. Phys. Chem. B* 2005**, 109, 15724

Additional published

29. Yi-Cheun Yeh; Krishnendu Saha; Bo Yan; Xi Yu; **Oscar R. Miranda**; Vincent M. Rotello. The Role of Ligand Coordination on the Cytotoxicity of Cationic Quantum Dots. ***Nanoscale* 2013**, 5, 12140.

30. Zheng-Jiang Zhu; Rui Tang; Yi-Cheun Yeh; **Oscar R. Miranda**; Vincent M. Rotello; Richard W. Vachet. Determination of the Intracellular Stability of Gold Nanoparticle Monolayers Using Mass Spectrometry, ***Anal. Chem.* 2012**, 84, 4321.

31. Steven C. Hayden; Gengxiang Zhao; Krishnendu Saha; Ronnie L. Phillips; Xiaoning Li; **Oscar R. Miranda**; Vincent M. Rotello; Mostafa A. El-Sayed; Ingeborg Schmidt-Krey; Uwe H. F. Bunz. Aggregation and Interaction of Cationic Nanoparticles on Bacterial Surfaces, ***J. Am. Chem. Soc.* 2012**, 134*,* 6920.

32. Daniel F. Moyano; Meir Goldsmith; David J. Solfiell; Dalit Landesman-Milo; **Oscar R. Miranda**; Dan Peer; Rotello, Vincent M. Rotello. Nanoparticle Hydrophobicity Dictates Immune Response, ***J. Am. Chem. Soc.* 2012**, 134*,* 3965.

33. Xi Yu; Jonathan T. Pham; Chandramouleeswaran Subramani; Brian Creran; Yi-Cheun Yeh; Du; Debabatra Patra, **Oscar R. Miranda**, Crosby AJ, Vincent M. Rotello. Direct Patterning of Engineered Ionic Gold Nanoparticles via Nanoimprint Lithography. ***Adv Mater.* 2012**, 24, 6330.

34. Subinoy Rana; Xi Yu; Debabrata Patra; Daniel F. Moyano; **Oscar R. Miranda**; Irshad Hussain; Vincent M. Rotello. Control of Surface Tension at Liquid-Liquid Interfaces Using Nanoparticles and Nanoparticle-Protein Complexes, ***Langmuir* 2012**, 28, 2023.

35. Kaimin Chen; Yisheng Xu; Subinoy Rana; **Oscar R. Miranda**; Paul L. Dubin; Vincent M. Rotello; Lianhong Sun; Xuhong Guo. Electrostatic selectivity in protein−nanoparticle interactions, ***Biomacromolecula* 2011**, 12, 2552.

36. Yi-Cheun Yeh; Debabrata Patra; Bo Yan; **Oscar R. Miranda**; Vincent M. Rotello. Synthesis of cationic quantum dots via one/two step ligand exchange reaction. ***Chem. Comm.* 2010**, 47, 3069.

37. Psaras L. McGrier; Kyril M. Solntsev; Anthony J. Zucchero; **Oscar R. Miranda**; Vincent M. Rotello; Laren M. Tolbert; Uwe H. F. Bunz. Hydroxydialkylamino Cruciforms: Amphoteric Materials with Unique Photophysical Properties, ***Chem. Eur. J.* 2011**, 17, 3112.

38. Xiao-Chao Yang; Bappaditya Samantha; Sarit S. Agasti; Youngdo Jeong; Zheng-Jiang Zhu; Subinoy Rana; **Oscar R. Miranda**; Zhi-Hong Mo; Vincent M. Rotello. Particle stabilized nanocapsule as a lipophilic drug carrier, ***Angew. Chem. Int. Ed. 2011*,** 50, 477.

39. Apiwat Chompoosor; Krishnendu Saha; Partha S. Ghosh; Dylan J. Macarthy; **Oscar R. Miranda**; Zhenjiang Zhu; Kathleen F. Arcaro; Vincent M. Rotello. DNA damage caused by cationic gold nanoparticles in mammalian cell: The potential use of gold nanoparticles as therapeutics, ***Small* 2010**, 6, 2246.

40. Zheng-Jiang Zhu; Rachel Carboni; Michael Quercio; Bo Yan; **Oscar R. Miranda**; Douglas L Ardenton; Kathleen F. Arcaro; Vincent M. Rotello; Richard W. Vachet. Effect of surface chemistry on uptake, distribution, and excretion of nanomaterials by Japanese medaka. ***Small* 2010**, 6, 2261.

41. Debabrata Patra; Firat Ozdemir; **Oscar R. Miranda**; Bappaditya Samanta; Amitav Sanyal; Vincent M. Rotello. Formation and size tuning of colloidal microcapsules via host−guest molecular recognition at the liquid−liquid interface, ***Langmuir* 2009**, 25, 13852.

42. Bappaditya Samanta; Xiao-Chao Yang; Yuval Ofir; Myoung-Hawn Park; Debabrata Patra; Sarit S. Agasti; **Oscar R. Miranda**; Zhi-Hong Mo; Vincent M. Rotello. Catalytic microcapsules assembled from enzyme-nanoparticle conjugates at oil-water interfaces, ***Angew. Chem. Int. Ed.* 2009**, 48, 5341.

43. Myoung-Hwan Park; Yuval Ofir; Bappaditya Samanta; Palaniappan Arumugam; **Oscar R. Miranda**; Vincent M. Rotello. Nanoparticle immobilization on surfaces via activatable heterobifunctional dithiocarbamate bond formation, ***Adv. Mat.* 2008**, 20, 4185.

44. Psaras L. McGrier; Kyril M. Solntsev; Shaobin Miao; Laren M. Tolbert; **Oscar R. Miranda**; Vincent M. Rotello; Uwe H. F. Bunz. Hydroxycruciforms: amine-responsive fluorophores, ***Chem. Eur. J.* 2008**, 14, 4503. **(Front Cover Picture)**.

Conference presentations

1. **Oscar R. Miranda**, Frank J. Rybicki III, Charles K. Ozaki, Jeffrey M. Karp, Peng Yu, Dimitrios Mitsouras, Praveen Vemula, Ming Tao, Chenwei Liu, Robert Mulkern. Vein grafts implantable contrast MRI Initiative: Enhanced Vessel Wall Imaging. 99th Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA), Chicago, IL, United Stated, December 1-6, **2013**.

2. **Oscar R. Miranda**, Praveen K. Vemula, Oren Levy, Michael Valic, Priya Anand, Ellen M. Gravallese, Antonios O. Aliprantis, Jeffrey M. Karp. Biologically responsive hydrogels: A new approach for treatment of inflammatory arthritis, 2013 Rheumatology Research Workshop (American College of Rheumatology (ACR) and Arthritis Foundation (AF)), Dallas, TX, United States, June 21-23, **2013**.

3. **Oscar R. Miranda**, Praveen K. Vemula, Oren Levy, Michael Valic, Priya Anand, Ellen M. Gravallese, Antonios O. Aliprantis, Jeffrey M. Karp. Biologically responsive hydrogels: A new approach for treatment of inflammatory arthritis, BWH BRI Regenerative Medicine Center Symposium, Boston, MA, United States, June 11, **2013**.

4. **Oscar R. Miranda**, Yen Sun, Shrey Sindhwani, Kelvin Ng, Maike Sander, Charles Lin, Jeffrey M. Karp. Development of an approach to monitor real-time insulin secretion *in vivo* at the single cell level, NIH 2012 Beta Cell Biology Consortium (BCBC) Retreat, Chantilly, VA, United States, May 1-4, **2012**.

5. **Oscar R. Miranda**; Avinash Bajaj; Sukru G. Elci; Subinoy Rana; Krishnendu Saha; Ronnie L. Phillips; Jonathan J. Bryant; Ik-Bum Kim; D. Joseph Jerry; Uwe H. Bunz; Vincent M. Rotello. FRET based pattern recognition of isogenic cells differing in cell surface glycans. ORGN-694, CODEN: 69NAQG, 240th ACS National Meeting, Boston, MA, United States, August 22-26, **2010**.

6. **Oscar R. Miranda**; Xiaoning Li; Zheng-Jiang Zhu; Bo Yan; Uwe H. F. Bunz; Vincent M. Rotello. Colorimetric bacteria sensing using a hybrid enzymatic nanocomposite biosensor. COLL-46, CODEN: 69NAQG, 240th ACS National Meeting, Boston, MA, United States, August 22-26, **2010**.

7. **Oscar R. Miranda**; Hung-Ting Chen; Chang-Cheng You; David E. Mortenson; Vincent M. Rotello. A novel gold nanoparticle-based protein sensor with enzyme-substrate reactions as signal amplifiers. COLL-131, CODEN: 69KXQ2, 236th ACS National Meeting, Philadelphia, PA, United States, August 17-21, **2008**.

8. **Oscar R. Miranda**; Hung-Ting Chen; Chang-Cheng You; Ronnie L. Phillips; Ik-Bum Kim; Uwe H. F. Bunz; Vincent M. Rotello. "Chemical nose" sensing and identification of proteins and bacteria. III International Symposium on Microcyclic and Supramolecular Chemistry (ISMSC), Las Vegas, NV, United States, July 13-18, **2008**.

9. **Oscar R. Miranda**; Chang-Cheng You; Ronnie L. Phillips; Ik-Bum Kim;Partha S. Ghosh; Uwe H. F. Bunz; Vincent M. Rotello. Ultraversatile protein sensor based on an array of conjugated polymers. ORGN-227, CODEN: 69JNR2; 234th ACS National Meeting, Boston, MA, United States, August 19-23, **2007**.

10. **Oscar R. Miranda**; Temer S. Ahmadi. Substrate-Assisted Phase Transitions of Au Nanorods. GENE-520, CODEN: 69GVWG; 37th Middle Atlantic Regional Meeting of the American Chemical Society, New Brunswick, NJ, United States, May **2005**.

11. **Oscar R. Miranda**; Riffard Jean-Gilles; Temer Ahmadi. Nucleation and Growth of Gold Nanorods. Villanova University, Sigma Xi Research Day, Villanova, PA, United States, April **2005**.

12. **Oscar R. Miranda**; Riffard Jean-Gilles; Temer S. Ahmadi. Growth Kinetics of Gold Nanorods. The16th Annual Saint Josepth's University SIGMA XI, Student Research Symposium, Philadelphia, PA, United States, April **2005**.

13. **Oscar R. Miranda**; Riffard Jean-Gilles; Temer S. Ahmadi. Effects of Chemical and Physical Parameters on the Growth Kinetics of Gold Nanorods. PHYS-384, CODEN: 69GQMP; 229th ACS National Meeting, San Diego, CA, United States, March **2005** (Science Mix).

14. **Oscar R. Miranda**; Temer S. Ahmadi. Mechanism and Growth Kinetics of Colloidal Gold Nanoparticles, COLL-076, CODEN: 69FTZ8; 228th ACS National Meeting, Philadelphia, PA, United States, August **2004**.

15. **Oscar R. Miranda**; Temer S. Ahamadi. 2- and 3-Dimentional Assembly of Shape-selected and Surface-modified Au Nanoparticles: Nature of Packing and its Correlation to Optical Properties; PHYS-360, CODEN 69EKY9; 226th ACS National Meeting, New York City, NY, United States, September **2003**.

Other Conference Presentations

16. Rochelle R. Arvizo; Subinoy Rana; **Oscar R. Miranda**; Resham Bhattacharya; Vincent M. Rotello; Priyabrata Mukherjee. Mechanism of anti-angiogenic property of gold nanoparticles: Role of nanoparticle size and surface charge. COLL-295. CODEN: 69NAQG, 240th ACS National Meeting, Boston, MA, United States, August 22-26, **2010**.

17. Xi Yu; Kan Du; Craig Versek; Debabrata Patra; **Oscar R. Miranda**; Anthony D. Dinsmore; Mark T. Tuominen; Vincent M. Rotello. Soft and deformable gold nanoparticles with unique conducting properties. ORGN-832. CODEN: 69NAQG, 240th ACS National Meeting, Boston, MA, United States, August 22-26, **2010**.

18. Subinoy Rana; Avinash Bajaj; **Oscar R. Miranda**; Joseph C. Yawe; D. J. Jerry; Uwe H. Bunz; Vincent M. Rotello. Cell-surface and lysate based identification of cell types and cancer states using gold nanoparticle-GFP supramolecular complexes. ORGN-260, CODEN: 69NAQG, 240th ACS National Meeting, Boston, MA, United States, August 22-26, **2010**.

19. Zheng-Jiang Zhu; Bo Yan; **Oscar R. Miranda**; Richard W. Vachet; Vincent M. Rotello Characterization and tracking of monolayer-protected nanoparticles in biological systems using mass spectrometry. COLL-234, CODEN: 69NAQG, 240th ACS National Meeting, Boston, MA, United States, August 22-26, **2010**.

20. Subinoy Rana; Mrinmoy De; **Oscar R. Miranda**; Uwe H. Bunz; Vincent M. Rotello. Array based sensing of proteins in human serum using nanoparticle-green fluorescent protein conjugates. COLL-48, CODEN: 69NAQG, 240th ACS National Meeting, Boston, MA, United States, August 22-26, **2010**.

21. Zheng-Jiang Zhu; Rachel Carboni; Michael Quercio; Bo Yan; **Oscar R. Miranda**; Kathleen F. Arcaro; Richard W. Vachet; Vincent M. Rotello. Effect of surface chemistry on uptake, distribution and excretion of nanomaterials by Japanese medaka. INOR-721, CODEN: 69NAQG, 240th ACS National Meeting, Boston, MA, United States, August 22-26, **2010**.

22. Rochelle R. Arvizo; Priyabrata Mukherjee; Y. S. Prakash; Michael A. Thompson; **Oscar R. Miranda**; J. D. Robertson; Vincent M. Rotello. Surface charge determines functional interactions between nanoparticles and cells. COLL-303. CODEN: 69NAQG, 240th ACS National Meeting, Boston, MA, United States, August 22-26, **2010**.

23. Zheng-Jiang Zhu; Partha Ghosh; **Oscar R. Miranda**; Richard W. Vachet; Vincent M. Rotello. Multiplexed screening of the cellular uptake of gold nanoparticles using Laser Desorption/Ionization Mass Spectrometry. ANYL-204, CODEN: 69KXQ2, 236th ACS National Meeting, Philadelphia, PA, United States, August 17-21, **2008**.

24. Chang-Cheng You; **Oscar R. Miranda**; Basar Gider; Partha S. Ghosh; Ik-Bum Kim; Uwe H. F. Bunz; Vincnet M. Rotello. Detection and identification of proteins based on nanoparticle-fluorescent polymer arrays. ORGN-756, CODEN: 69JAUY; 233rd ACS National Meeting, Chicago, IL, United States, March 25-29, **2007**.

25. Megan Daley; **Oscar R. Miranda**; Norman R. Dollahon; Temer S. Ahmadi. Observation of a Critical Concentration of L-Ascorbic Acid (Vitamin C) in the Photochemical Synthesis of Au Nanorods. MRM-445, CODEN: 69ICW3; 38th Middle Atlantic Regional Meeting of the American Chemical Society, Hershey, PA, United States, June 4-7, **2006**.

26. Charles C. Farraioli; **Oscar R. Miranda**; Norman R. Dollahon; Temer S. Ahmadi. Interplay of Temperature and UV-Light in the Growth Process of Au-Nanorods. MRM-444, CODEN: 69ICW3; 38th Middle Atlantic Regional Meeting of the American Chemical Society, Hershey, PA, United States, June 4-7, **2006**.

C. Patents

1. Rotello VM, Bunz UHF, Phillips RL, Miranda OR, You CC. Novel Sensors for Detection of Pathogens, US Application Serial No. 12/313137.

2. Rotello VM, Bunz UHF, You CC, Miranda OR, Kim IB. Detection of Proteins using Nanoparticle-Fluorescent Polymer Sensors, US Application Serial No. 12/313116.

3. Rotello VM, Bunz UHF, Miranda OR, Bajaj A, Rana S. Detection of Normal/Cancerous/Metastatic Cells using Nanoparticle-Polymer and Nanoparticle-GFP Supramolecular Complexes. UMA 09-40, Submitted.