

LAURA FABRIS

Department of Materials Science and Engineering
Institute for Advanced Materials Devices and Nanotechnology
Rutgers University

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EDUCATION

University of Padova Padova, Italy
Doctorate Degree in Chemical Sciences (April 2006)
Thesis Title: "Peptide Monolayers on Gold Nanoparticles and Surfaces"
Advisor: *Prof. Flavio Maran*

University of Padova Padova, Italy
B.S./M.S. in Chemistry, *Summa cum Laude* (July 2001)
Thesis Title: "Artificial Photosynthetic Reaction Centers: Paramagnetic Intermediates Detected by EPR Spectroscopy"
Advisor: *Prof. Donatella Carbonera*

APPOINTMENTS

06-08/2011
Visiting Professor
Air Force Research Lab Wright Patterson Air Force Base, Dayton, OH

07/2016- To Date
Associate Professor - Department of Materials Science and Engineering
Rutgers University – School of Engineering Piscataway, NJ

07/2009-06/2016
Assistant Professor - Department of Materials Science and Engineering
Rutgers University – School of Engineering Piscataway, NJ

03/2009
Visiting Researcher - Department of Chemical and Biomolecular Engineering
National University of Singapore Singapore

01/2006-05/2009
Postdoctoral Scholar - Department of Chemistry and Biochemistry
University of California at Santa Barbara Santa Barbara, CA
Postdoctoral Sponsor: Prof. Guillermo Bazan

Additional Professional Experience

Vesta Nanotechnologies

2011-2012

Scientific Consultant

San Diego, CA

Spei-Orion S.p.A.

02-12/2002

Chemical Laboratory Manager and Quality Assurance Assistant Manager

Established a new method for process control in the chemical laboratory and lead the company to the compliance with the ISO 9001:2000 certification.

San Lorenzo Isontino, Italy

Intertek Testing Services

09-10/2001

Translator (English to Italian)

Campoformido, Italy

AWARDS and HONORS

2012: Rutgers Faculty Research Award

2011: Air Force Summer Faculty Fellowship

SCHOLARSHIP

Journal Publications (h-index 15, >800 citations on Google Scholar)

* Corresponding author.

1. Atta, S.; Tsoulos, T. V.; **Fabris, L.*** Shaping Gold Nanostar Electric Fields for SERS Enhancement via Silica Coating and Selective Etching. *J. Phys. Chem. C* **2016**, *In Press* (Richard P. Van Duyne Festschrift).
2. **Fabris, L.*** SERS Tag: The Next Promising Tool for Personalized Cancer Detection? *ChemNanoMater* **2016**, *2*, 249 (Invited).
3. Smith, P. F.; Deibert, B. J.; Kaushik, S.; Gardner, G.; Hwang, S.; Wang, H.; Al-Sharab, J. F.; Garfunkel, E.; **Fabris, L.**; Li, J.; Dismukes, G. C. Correlating Water Oxidation Activity to Corner Sharing Mn³⁺O₆ Octahedra *via* the Manganite (γ -MnOOH) Polymorph. *ACS Catal.* **2016**, *6*, 2089.
4. Butcher Jr., D. P.; Wadams, R. C.; Drummy, L.; Koerner, H.; Bailey, C.; Scheltens, F.; McComb, D.; **Fabris, L.**; Durstock, M. F.; Tabor, C. Controlled Dispersion of Polystyrene-Capped Au Nanospheres in P3HT:PC61BM and Consequences upon Active Layer Nanostructure. *J. Pol. Sci.* **2016**, *54*, 709.
5. **Fabris, L.*** Gold-based SERS Tags for Biomedical Imaging. *J. Opt.* **2015**, *17*, 114002 (Invited).
6. Perets, E. A.; Indrasekara, A. S. D. S.; Kurmis, A.; Atlasevich, N.; **Fabris, L.**; Arslanoglu, J. Carboxy-Terminated Immuno-SERS Tags Overcome Non-Specific Aggregation for the Robust Detection and Localization of Organic Media in Artworks. *Analyst* **2015**, *140*, 5971.
7. Indrasekara, A. S. D. S.; **Fabris, L.*** SERS-based Approached toward Genetic Profiling. *Bioanalysis* **2015**, *7*, 263 (Invited).

8. Indrasekara, A. S. D. S.; Thomas, R.; **Fabris, L.*** Plasmonic Properties of Regiospecific Core–satellite Assemblies of Gold Nanostars and Nanospheres. *Phys. Chem. Chem. Phys.* **2015**, *17*, 21133. (Invited).
9. Thomas, R.; **Fabris, L.**; O'Carroll, D. M. Gold Nanowire and Nanorod Plasmonic Mechanisms for Increasing Ultra-Thin Organic Photovoltaic Active Layer Absorption. *Plasmonics* **2014**, *9*, 1283.
10. Indrasekara, A. S. D.S.; Meyers, S.; Shubeita, S.; Feldman, L. C.; Gustafsson, T.; **Fabris, L.*** Gold Nanostar Substrates for SERS Sensing in the Femtomolar Regime. *Nanoscale* **2014**, *6*, 8891.
11. Wadams, R. C.; Yen, C.; Butcher Jr., D. P.; Koerner, H.; Durstock, M. F.; **Fabris, L.**; Tabor, C. E. Gold Nanorod Enhanced Organic Photovoltaics: The Importance of Morphology Effects. *Org. Electron.* **2014**, *15*, 1448.
12. Indrasekara, A. S. D. S.; Wadams, R. C.; **Fabris, L.*** Ligand Exchange on Gold Nanorods: Going Back to the Future. *Part. Part. Syst. Char.* **2014**, *31*, 819.
13. Wadams, R. C.; **Fabris, L.**; Vaia, R. A.; Park, K. Time-dependent Susceptibility of the Growth of Gold Nanorods to the Addition of a Cosurfactant. *Chem. Mater.* **2013**, *25*, 4772.
14. Indrasekara, A. S. D. S.; Paladini, B. J.; Naczynski, D. J.; Starovoytov, V.; Moghe, P. V.; **Fabris, L.*** Dimeric Gold Nanoparticle Assemblies as Tags for SERS- Based Cancer Detection. *Adv. Healthcare Mater.* **2013**, *2*, 1370.
15. Park, K.; Drummy, L. F.; Wadams, R.; Koerner, H.; Nepal, D.; **Fabris, L.**; Vaia, R. A. Growth Mechanism of Gold Nanorods. *Chem. Mater.* **2013**, *25*, 555.
16. Jiang, Y.; Huan, Q.; **Fabris, L.**; Bazan, G. C.; Ho, W. Submolecular Control, Spectroscopy, and Imaging of Bond-selective Chemistry in Single Functionalized Molecules. *Nat. Chem.* **2013**, *5*, 36.
17. Rodriguez-Lorenzo, L.; **Fabris, L.***; Alvarez-Puebla, R. Multiplex optical Sensing with Surface Enhanced Raman Scattering: A Critical Review. *Anal. Chim. Acta* **2012**, *745*, 10 (Invited).
18. **Fabris, L.*** Bottom-up Optimization of SERS Hot-spots. *Chem. Comm.* **2012**, *48*, 9321 (Featured on the Cover).
19. Mark, P. R.; **Fabris, L.*** Understanding Nanoparticle Assembly: A Simulation Approach to SERS Active Dimers. *J. Colloid Interf. Sci.* **2012**, *369*, 134.
20. Silva, R.; Biradar, A.; **Fabris, L.***; Asefa, T. Au/SBA-15 Based Robust and Convenient-to-Use Nanopowder Material for Surface Enhanced Raman Scattering (SERS) with High SERS Enhancement Factor. *J. Phys. Chem. C* **2011**, *115*, 22810.
21. Whitmore, D.; El-Khoury, P.; **Fabris, L.**; Chu, P.; Bazan, G.; Potma, E.; Apkarian, V. A. High Sensitivity Surface-Enhanced Raman Scattering in Solution using Engineered Silver Nanosphere Dimers. *J. Phys. Chem. C* **2011**, *115*, 15900.
22. Guarrotxena, N.; Liu, B.; **Fabris, L.***; Bazan, G.C. Antitags: Nanostructured Tools for Developing SERS-Based ELISA Analogs. *Adv. Mater.* **2010**, *22*, 4954.
23. **Fabris, L.**; Schierhorn, M.; Moskovits, M.; Bazan, G.C. Aptatag-Based Multiplexed Assay for Protein Detection by Surface Enhanced Raman Spectroscopy. *Small*, **2010**, *6*, 1550.
24. Braun, G.; Lee, S.J.; Laurence, T.; Fera, N.; **Fabris, L.**; Bazan, G.C.; Moskovits, M.; Reich, N.O. Generalized Approach to SERS-Active Nanomaterials via Controlled Nanoparticle Linking, Polymer Encapsulation and Small Molecule Infusion. *J. Phys. Chem. C* **2009**, *113*, 13622.

25. **Fabris, L.**; Dante, M.; Nguyen, T.Q.; Tok, J. B.-H.; Bazan, G.C. SERS Aptatags: New Responsive Metallic Nanostructures for Heterogeneous Protein Detection by Surface Enhanced Raman Spectroscopy. *Adv. Funct. Mater.* **2008**, *18*, 2518 (Featured on the Cover).
26. **Fabris, L.**; Dante, M.; Braun, G.; Lee, S.J.; Reich, N.O.; Moskovits, M.; Nguyen, T.Q.; Bazan, G.C. A Heterogeneous PNA-Based SERS Method for DNA Detection. *J. Am. Chem. Soc.* **2007**, *129*, 6086.
27. Holm, A.; Ceccato, M.; Donkers R. L.; **Fabris, L.**; Pace, G.; Maran, F. Effect of Peptide Ligand Dipole Moments on the Redox Potentials of Au38 and Au140 Nanoparticles. *Langmuir* **2006**, *22*, 10584.
28. **Fabris, L.**; Antonello, S.; Armelao, L.; Donkers, R.L.; Polo, F.; Toniolo, C.; Maran, F. Gold Nanoclusters Protected by Conformationally Constrained Peptides. *J. Am. Chem. Soc.* **2006**, *128*, 326.

Published Conference Proceedings

1. Butcher, D. P.; Yen, C.; Durstock, M.; Tabor, C. E.; Wadams, R. C.; **Fabris, L.** Improved Light Harvesting in Organic Solar Cells with Plasmonic Nanoparticles in the Active Layer. *Abstr. Pap. Amer. Chem. S.* **2013**, 245.
2. Fabris, L.; Paladini, B. J; Wadams, R. C; Gold Nanoparticle Dimers as Tags for SERS-based Cancer Detection. *Abstr. Pap. Amer. Chem. S.* **2011**, 242.
3. Wadams, R. C; Fabris, L.; Seed-mediated Synthesis and Characterization of Gold Nanoparticles of Various Morphologies. *Abstr. Pap. Amer. Chem. S.* **2011**, 242.
4. Guarrotxena, N.; Fabris, L.; Liu, B.; Bazan, G. C.; Ag-Nanoparticle-based Bioassays for Protein Detection by Surface Enhanced Raman Spectroscopy. *Abstr. Pap. Amer. Chem. S.* **2010**, 239.
5. Maran, F.; Antonello, S.; **Fabris, L.**; Polo, F.; Electron Transfer Through Conformationally Constrained Oligopeptides. 207th ECS Meeting, MA2005-01, 1410, **2005**.
6. Donkers, R. L.; Antonello, A.; **Fabris, L.**; Maran, F. Effect of the Peptide Ligands on the Quantized Charging Behavior of Monolayer Protected Au38 Clusters. In: Charge Transfer Processes in Semiconductor and Metal Nanostructures, T. Lian, K. Murakoshi, and G. Rumbles, Editors. The Electrochemical Society: Pennington, NJ, PV 2004-22, **2005**.
7. **Fabris, L.**; Antonello, S.; Zuliani, C.; Maran, F.; Distance and Orientation Dependence of Dissociative Electron Transfers. 204th ECS Meeting, Abs. 1392, **2003**.

Patents

1. US Patent Application No. PCT/US15/25932 titled "Gold Nanostar Substrates for SERS Sensing in the Femtomolar Regime" filed April 15, 2015.

Invited Talks

A. Keynote or plenary addresses

1. "Engineering Gold Nanostars for Quantitative SERS". 2nd International Conference on Enhanced Spectroscopies, Messina (Italy), October 12-15, 2015 (Keynote Address).

2. "Gold Nanoparticle Dimers for SERS-based Cell Detection" International Conference of Young Researchers on Advanced Materials, Singapore, July 1-6, 2012 (Keynote address).

B. Other invited addresses

1. "Biomedical Imaging using SERS Tags: The Future Beyond Fluorescent Dyes". 2016 Fall ACS Meeting, Philadelphia PA, August 21-25, 2016.
2. "Biomedical Imaging using SERS Tags: A Bright Future Beyond Fluorescence Imaging". Centro di Riferimento Oncologico, National Cancer Institute, Aviano (Italy), July 19, 2016.
3. "Understanding Gold Nanostars for Improving SERS". State Key Laboratory of Supramolecular Structure and Materials, Jilin University, Changchun (China), May 18, 2016.
4. "Gold Nanostars: A Tunable Plasmonic Tool for Highly Sensitive SERS-based Detection". Rice University, Department of Chemistry, Houston TX, October 21, 2015.
5. "Tuning Surface Plasmon Resonances on Gold Nanostars". 2015 SCIX Conference (The Great SCientific EXchange), Providence RI, September 27-October 2, 2015.
6. "Tuning Morphology and Assembly of Gold Nanoparticles toward Optimized Near Field Enhancement". Drexel University, Department of Materials Science and Engineering, Philadelphia PA, April 21, 2015.
7. "Tuning Morphology and Assembly of Gold Nanoparticles toward Optimized Near Field Enhancement". Juniata College, Department of Chemistry, Huntingdon PA, March 17, 2015.
8. "Tuning Near Field Enhancement for Quantitative SERS". 2015 SERS Round Table, Duisburg (Germany), March 4-6, 2015 (could not attend due to illness).
9. "Tuning Morphology and Assembly of Gold Nanoparticles toward Optimized Near Field Enhancement". Columbia University, Department of Chemistry, New York NY, January 23, 2015.
10. "Optimization of Gold Nanostructures for Applications in SERS". University of Padova, Department of Organic Chemistry, Padova (Italy), January 8, 2015.
11. "SERS Substrates and Tags for Biological Imaging and Sensing". University of Texas at Dallas, Department of Materials Science and Engineering, Dallas, TX, November 7, 2014.
12. "SERS Substrates and Tags for Biological Imaging and Sensing". SES (Surface Enhanced Spectroscopies) 2014, Chemnitz, Germany, August 7-10, 2014.
13. "Plasmonic Nanoparticles for Near Field Enhancement". 2014 International Collaboration in Chemistry Workshop, Tokyo Institute of Technology, Yokohama, Japan, March 9, 2014.
14. "The Efficiency-Enhancing Effect of Gold Nanorods in organic Solar Cells: Myth or Reality?". 13th Erker-University of California Santa Barbara Symposium, Santa Barbara CA, March 3-4, 2014.
15. "Gold Nanoparticles for Imaging and Sensing". Lehman College, City University of New York, Department of Chemistry, Bronx NY, February 19, 2014.
16. "Gold Nanoparticles for Imaging and Sensing". Rutgers University, Department of Electrical and Computer Engineering, Piscataway NJ, February 12, 2014.
17. "Gold Nanoparticle Dimers as Tags for SERS-based Disease Screening". Universidade de São Paulo, Department of Chemistry, São Paulo (Brazil), June 11, 2013.

18. "(Non) Plasmonic Enhancement Effects of Gold Nanorods in Organic Photovoltaics". International Materials Institute for Solar Energy and Environment (IMI-SEE) US-China Workshop, US National Academy of Sciences, Washington DC, May 20-21, 2013.
19. "Gold Nanoparticle Dimers as Tags for Rapid Cancer Screening". Nano 2012: XI International Conference on Nanostructured Materials, Rhodes (Greece), August 21-26, 2012.
20. "Dithiolated Linkers for Gold Nanoparticle Assembly: Modeling and Experiment". 2012 Energy Materials Nanotechnology (EMN) Villa Conference, Orlando FL, April 16-20, 2012.
21. "Gold Nanoparticle Dimers: Synthesis, Characterization, and Applications". University of Connecticut, Department of Chemical, Materials, and Biomolecular Engineering, Storrs CT, November 15, 2011.
22. "Gold Nanoparticle Dimers: Synthesis, Characterization, and Applications". Coordinamento Interuniversitario Veneto per le Nanotecnologie (CIVEN) Institute, Venice (Italy), November 23, 2011.
23. "Surface Functionalized Metal Nanoparticles". 25th Laboratory for Surface Modification (LSM) Symposium. Rutgers University, New Brunswick NJ, March 29, 2011.
24. "Study of Metal Nanoparticle Assembly: Optimization of the SERS Enhancement and Bioapplications". William Paterson University, Department of Chemistry, Wayne NJ, November 4, 2010.
25. "Multifunctional Metal Nanoparticle Dimers for SERS-based Imaging and Sensing, Cell Targeting, and Drug Delivery". Nanotechnology for Art Conservation Symposium, Northwestern University, Chicago IL, October 28, 2010.
26. "Hybrid Nanomaterials for Optics, Electronics, and Bionanotechnology". 10th Erker-University of California Santa Barbara Symposium, Santa Barbara CA, February 8, 2010.
27. "Alla Ricerca della Ricerca". 2009 Academia-Industry Meeting "Education for Innovation, Innovation for Competitiveness", Padova (Italy), November 26, 2009.

Contributed Talks

Oral Presentations

1. "Understanding Plasmonic Behavior and Morphology of Gold Nanostars for Quantitative SERS Imaging and Biodetection". 2015 Fall MRS Meeting, Boston MA, November 29-December 4, 2015.
2. "Gold Nanostars as Building Blocks for Multiplexed Chemical and Biological Sensing Platforms". 2015 SPIE Sensing Technology + Applications, Baltimore MD, April 20-24, 2015.
3. "Gold Nanostar-Nanospheres Superstructures as SERS Substrates for Biomedical Applications". 2014 MRS Fall Meeting, Boston MA, December 1-5, 2014.
4. "Gold Nanoparticle Dimers as Tags for SERS-based Rapid Cancer Screening and Photothermal Therapy". 2012 MRS Fall Meeting, Boston MA, November 27-30, 2012.
5. "Gold Nanoparticle Tags for SERS-based Imaging of Human Glioblastoma Cells". SPIE Bios 2012. San Francisco CA, January 21-26, 2012.
6. "Gold Nanoparticle Tags for SERS-based Imaging of Human Glioblastoma Cells". NanotechItaly 2011. Venice (Italy), November 23-25, 2011.

7. "Gold Nanoparticle Dimers as Tags for SERS-based Cancer Detection". 2011 ACS Fall Meeting, Denver CO, August 28-September 1, 2011.
8. "Multifunctional Nanoparticle Dimers for Cell Targeting, Penetration, and Imaging". 2010 Fall MRS Meeting, Boston MA, November 28-December 2, 2010.
9. "Hybrid Nanoparticle Assemblies: Synthesis, Stability, and Applications". 2010 MRS Spring Meeting. San Francisco, CA, April 4-9, 2010.
10. "PNA-Based SERS Substrates for DNA Detection". 2007 MRS Spring Meeting. San Francisco, CA, April 9-13, 2007.
11. "Peptide Protected Gold Nanoclusters". 1st ECHEMS Meeting, Electrochemistry in Nanosciences. Isola di San Servolo, Venezia (Italy), June 30-July 3, 2005.
12. "Peptide-protected Gold Nanoparticles". Giornate dell'Elettrochimica Italiana 2004. Padova (Italy), September 5-9, 2004.

Poster Presentations

1. 2014 Gordon Research Conference on Noble Metal Nanoparticles. *Surfactant-free Gold Nanostars as SERS Substrates with High Enhancement Factor*. Mount Holyoke MA, June 2014.
2. 2011 MRS Fall Meeting, Boston MA, November 27-December 1, 2011. *Effect of Anisotropic Gold Nanoparticles on Morphology and Optical Properties of P3HT/PCBM Blends*.
3. 2011 MRS Fall Meeting, Boston MA, November 27-December 1, 2011. *Gold Nanoparticle Tags for SERS-based Imaging of Human Glioblastoma Cells*.
4. 2011 MRS Workshop on Directed Self Assembly of Materials, Nashville TN, September 28-October 1, 2011. *Dithiolated Linkers for Gold Nanoparticle Assembly: Short and Rigid or Long and Flexible?*
5. 2011 NSF-DFG Conference, New York City NY, March 22-25, 2011. *Guiding the Assembly of Plasmonic Nanoparticles*.
6. 2010 SPIE Optics and Photonics Meeting, San Diego (CA) August 1-5, 2010. *Study of Metal Nanoparticle Assembly for the Optimization of SERS Enhancement*.
7. 2010 Gordon Research Conference on Metallic Nanoparticles, Mount Holyoke College, MA June 20-25, 2010. *Metal Nanoparticle Dimers: Synthesis, Stability, and Applications*.
8. 5th SAYCS Meeting (Sigma-Aldrich Young Chemists Symposium). Riccione (Italy), October 10-12, 2005. *Peptide Protected Gold Nanoclusters*.

Oral Presentations by Students Supervised

1. Bhamidipati, M., **Fabris, L.** Effect of Morphology and Surface Chemistry of Gold Nanoparticles on Cellular Uptake and Toxicity. 251st ACS National Meeting, San Diego CA, March 13-17, 2016.
2. Indrasekara, A. S. D. S., Thomas, R., **Fabris, L.** Gold Nanoparticle Superstructures as SERS Substrates. ACS Colloids and Surface Symposium, Philadelphia, PA.
3. Indrasekara, A. S. D. S., Thomas, R., **Fabris, L.** Gold Nanostar-Nanospheres Superstructures as SERS Substrates. Gordon Research Seminar on Noble Metal Nanoparticles, Mount Holyoke, MA.

4. Indrasekara, A. S. D. S., Paladini, B. J., Naczynski, D., Moghe, P. V., **Fabris, L.** Gold Nanoparticle Dimers For SERS-based Tumor detection and Therapy. SPIE-BIOS 2013, San Francisco, CA.
5. Indrasekara, A. S. D. S., Paladini, B. J., Naczynski, D., Moghe, P. V., **Fabris, L.** Dimeric Assemblies of Gold Nanoparticles for SERS-based Tissue Imaging. Twenty Seventh Annual Symposium of the Laboratory for Surface Modification, Rutgers University, New Brunswick, NJ.
6. Wadams, R.C., **Fabris, L.** (*Invited*). Synthesis and Functionalization of Gold Nanorods for Probing Plasmonic Enhancement Mechanisms in Organic Photovoltaic Active Layers. Air Force Research Laboratory's Soft Materials Branch Meeting, Wright-Patterson Air Force Base, Dayton, OH, January, 2013.
7. Mark, P., **Fabris, L.** Linear Chains of Gold Nanospheres: Simulation and Construction towards Better Photovoltaic Cells. International Materials Research Congress 2012.
8. Mark, P., Wadams, R. C., **Fabris, L.** Ordered Linear Nanostructures for Improved Organic Solar Cell Performance. 2012 Spring MRS Meeting.
9. Wadams, R.C., **Fabris, L.** Ligand Exchange on Plasmonic Nanoparticles for Incorporation into Polymer-Nanoparticle Composites. Annual IGERT seminar series, Rutgers University, NJ, April 2012.
10. Mark, P., **Fabris, L.** Building Efficient SERS-Based Tagging Systems: A Simulation Approach to SERS-Active Dimers. Twenty Sixth Annual Symposium of the Laboratory for Surface Modification, Rutgers University, New Brunswick, NJ.
11. Wadams, R.C., **Fabris, L.** (*Invited*) Plasmonic Nanoparticle Ligand Exchange for Polymer-Nanoparticle Composites. 13th Erker-UCSB Symposium, University of California-Santa Barbara, CA, February 2012.
12. Wadams, R.C., **Fabris, L.** Seed-mediated Synthesis and Characterization of Gold Nanoparticles of Varying Morphology. 2011 Fall ACS meeting, Denver, CO, August 2011.
13. Mark, P., **Fabris, L.** Controlled Nanoparticle Structures for Energy Applications. Annual IGERT seminar series, Rutgers University, NJ, April 2010.

Poster Presentations by Students Supervised

1. Bhamidipati, M., **Fabris, L.** Biomedical Imaging Using SERS Tags: The Future Beyond Fluorescent Dyes. 2016 Johnson and Johnson Engineering Showcase, J&J World Headquarters, New Brunswick NJ, February 23, 2016.
2. Rabolli, C. P., Meinol, K., Penna Nader, F., Nguyen, C., **Fabris, L.** A Systematic Study on the Effect of the Synthetic Parameters on the Optical Properties and Morphology of Gold Nanostars. 2016 Johnson and Johnson Engineering Showcase, J&J World Headquarters, New Brunswick NJ, February 23, 2016.
3. Rabolli, C. P., Meinol, K., Penna Nader, F., Nguyen, C., **Fabris, L.** A Systematic Study on the Effect of the Synthetic Parameters on the Optical Properties and Morphology of Gold Nanostars. 2015 Aresty Summer Science Symposium.
3. Indrasekara, A. S. D. S., Thomas, R., **Fabris, L.** Gold Nanostar-Nanospheres. Superstructures as SERS Substrates. 2014 Spring MRS Meeting, San Francisco, CA.
4. Kuray, P., **Fabris, L.** Synthesis and Functionalization of Gold Nanoparticles for the Imaging of Cells. Malcolm G. McLaren Senior Research Poster Session. Rutgers University, New Brunswick NJ. April 2014.

5. Tran, A., Indrasekara, A. S. D. S., **Fabris, L.** Synthesis of Different Shaped Gold Nanoparticles for Testing Cell Cytotoxicity. Aresty Undergraduate Research Symposium. Rutgers University, New Brunswick NJ. April 2014.
6. Kuray, P., **Fabris, L.** Synthesis and Functionalization of Gold Nanoparticles for the Imaging of Cells. Aresty Undergraduate Research Symposium. Rutgers University, New Brunswick NJ. April 2014.
7. Wadams, R.C., **Fabris, L.**, Vaia, R.A., and Park, K. (Poster). Time-Dependent Susceptibility of Gold Nanorod Synthesis to Co-Surfactant Addition. 2013 Spring MRS Meeting, San Francisco, CA, April, 2013.
8. Wadams, R.C., Yen, C.-W., **Fabris, L.**, Durstock, M., Koerner, H., Tabor, C. (Poster) Non-Plasmonic Enhancement Effects of Gold Nanorods in Organic Photovoltaic Devices. MRS Energy Materials Forum, San Francisco CA, April, 2013.
9. Dolinski, N., Wadams, R. C., **Fabris, L.** Fundamentals of Ligand Exchange on Gold Nanoparticle Surfaces. 2013 Spring ACS Meeting. New Orleans LA, April 2013.
10. Dolinski, N., Wadams, R. C., **Fabris, L.** Fundamentals of Ligand Exchange on Gold Nanoparticle Surfaces. Aresty Undergraduate Research Symposium. Rutgers University, New Brunswick NJ. April 2013.
11. Indrasekara, A. S. D. S., Paladini, B. J., Naczynski, D., Moghe, P. V., **Fabris, L.** Gold Nanoparticle Dimers for SERS-based Tumor Detection. Nanomedicine and Drug Delivery Symposium, Atlantic City, NJ, Poster Presentation, 2012.
12. Indrasekara, A. S. D. S., Paladini, B. J., Naczynski, D., Moghe, P. V., **Fabris, L.** Assembled Gold Nanoparticles for SERS-based Targeted Tumor Imaging. Gordon Research Conference on Noble Metal Nanoparticles, Mount Holyoke, MA, Poster Presentation, 2012.
13. Wadams, R.C., Dolinski, N., **Fabris, L.** (Poster) Ligand Exchange: A Thermodynamic Approach to Success. Gordon Research Conference on Noble Metal Nanoparticles, Mount Holyoke College, MA, June, 2012.
14. Mark, P., Wadams, R. C., **Fabris, L.** Linear Chains of Gold Nanospheres: Simulation and Construction towards Better Photovoltaic Cells. 2011 Fall MRS Meeting.
15. Mark, P., **Fabris, L.** Nanometer Scale Conductive Structures via Directed Nanoparticle Assembly. Annual IGERT seminar series, Rutgers University, NJ, April 2011.
16. Mark, P., **Fabris, L.** Laboratory for Surface Modification 2011 – Poster, “Nanoparticle Dimerization Through a Microfluidics-Based Synthesis. Twenty Fifth Annual Symposium of the Laboratory for Surface Modification, Rutgers University, New Brunswick, NJ, 2011.
17. Paladini, B. J., **Fabris, L.** Bioconjugation of Gold nanosphere Dimers. MRS Workshop on Functionalized Nanobiomaterials for Medical Applications. Denver, CO October 2010.
18. Paladini, B. J., Wadams, R. C., Mark, P., **Fabris, L.** Bioconjugation of Gold Nanoparticle Dimers. 2010 Fall MRS Meeting.
19. Mark, P., **Fabris, L.** Building Bridges Between Nanoparticles: Simulation and Experiment. 2010 Spring MRS Meeting.

Memberships

- Materials Research Society (MRS, member)

- American Chemical Society (ACS, member)
- Sigma Xi, The Scientific Research Society (Member, Vice President of Rutgers Chapter)
- The International Society for Optics and Photonics (SPIE, Member)

TEACHING

Coursework Instruction - Rutgers University

1. As Primary Instructor

Fall 2010-ongoing: Introduction to Materials Science and Engineering. Undergraduate Course (3 credits, 14:635:203). Sole instructor.

Highest Student Rating Received: Teaching Effectiveness: 4.50/5.00; Course Quality: 4.47/5.00 (5.00 indicates excellent).

Spring 2010-ongoing: Biological Applications of Nanomaterials and Nanostructures. Crosslisted senior undergraduate/graduate course (3 credits, 14:635:410/16:125:582). Sole instructor.

Highest Student Rating Received: Teaching Effectiveness: 4.90/5.00; Course Quality: 4.80/5.00 (5.00 indicates excellent).

2. As Guest Instructor

Fall 2013: Photonic, Electronic, and Magnetic Applications of Nanomaterials and Nanostructures (14:635:322). Primary Instructor: Prof. Manish Chhowalla. Guest Lecture on Gold Nanoparticles for Imaging and Sensing.

Fall 2012: Fall 2012. Introduction to Biomedical Engineering (125:201). Primary Instructor: Prof. Francois Berthiaume. Guest Lecture on Spectroscopies and Cell Imaging.

Spring 2011 and Spring 2012: Spring 2012. Biointerfacial Characterization (125:583). Primary instructor: Prof. Prabhas Moghe. Guest lectures on Spectroscopy and Surface Enhanced Techniques. Laboratory Experience on Surface Enhanced Raman Spectroscopy.

Fall 2010: Introduction to Nanoscience and Nanotechnology (16:635:604 Special Problems Materials). Guest Lecturer for the Nanotechnology for Clean Energy IGERT. Lecture on Nanobiology.

Fall 2010: Science on the Nanoscale (090:268:01). Primary Instructor: Prof. Fred Cosandey. Guest Lecture on Nanobiology.

Fall 2009. Biointerfacial Characterization (125:583). Primary Instructor: Prof. Prabhas Moghe. Guest Lecture on Surface Enhanced Techniques.

Coursework Instruction - University of Padova

2005: Teaching Assistant for the Spectroscopy course, Biotechnology Curriculum.

2003-2004: Teaching Assistant for the Physical Chemistry course, Electrochemistry emphasis, Biotechnology Curriculum.

Mentoring and Student Supervision

Post Docs Supervised

2013: Dr. Roney Thomas. MSE Department, Rutgers University. Co-supervised with Prof. Deirdre O'Carroll.

Doctoral Theses Supervised

1. Sakshi Sardar. ECE Department, Rutgers University. Co-advised with Prof. Mehdi Javanmard, ECE Department, Rutgers University.

Stamatia Kallontzi. MSE Department, Rutgers University. Co-Advisor (Primary advisor Prof. Lisa Klein). Currently Supervised.

2. Supriya Atta. CBE Department, Rutgers University. Primary Advisor. Currently Supervised.
3. Theodoros Tsoulos. MSE Department, Rutgers University. Primary Advisor. Currently Supervised.
4. Manjari Bhamidipati. BME Department, Rutgers University. Primary Advisor. Currently Supervised.
5. Riyanka Pai. MSE Department, Rutgers University. Primary Advisor. Currently supervised.
6. Swarnapali Indrasekara. MSE Department, Rutgers University. Primary Advisor (defended 2014, now Post Doc at Duke University).
7. Robert C. Wadams. Doctoral Student. MSE Department, Rutgers University. IGERT Fellow. Primary Advisor (defended 2014, now at Pfizer).
8. Paul R. Mark. MSE Department, Rutgers University. IGERT Fellow. Primary Advisor (defended 2013, now at Coherent Inc.).

Master's Theses Supervised

1. Sakshi Sardar. Master's Student. BME Department, Rutgers University. Primary Advisor (co-advisor Prof. Mehdi Javanmard, ECE Department, Rutgers University).
2. David Schachter. Master's Student. BME Department, Rutgers University. Primary Advisor (now Graduate Student at Weill Cornell).
3. Bryan Paladini. Master's Student. MSE Department, Rutgers University. Primary Advisor (now at Thermo Fisher Scientific).

SERVICE

Internal

2009-ongoing: Member of the Undergraduate Recruitment Committee, MSE Department, Rutgers University

2009-ongoing: Member of the Ethics Committee, MSE Department, Rutgers University

2009-ongoing: Advisor for the NSF-IGERT "Nanotechnology for Clean Energy"

2012: Member of the Hearing Committee, School of Engineering, Rutgers University

2009-2014: Member of the Advisory Committee, MSE Department, Rutgers University

External

Symposium Organizer

04/2013: Spring MRS Meeting. Symposium Organizer. Nanomaterials in the Subnanometer Size Range.

10/2010: MRS Workshop. Workshop Chair. Nanomaterials for Biological Applications.

Peer Reviewer: Publications

Peer-reviewed professional journals: The Journal of Nanoscience and Nanotechnology, Nanoscale, The Journal of Physical Chemistry C, Small, Physical Chemistry Chemical Physics, Chemistry-A European Journal, Advanced Functional Materials, Chemical Communications, Analyst, Advanced Materials, Journal of Colloids and Interface Science, Dalton Transactions, IEEE Transactions on Nanotechnology, Chem. Phys. Chem., European Journal of Inorganic Chemistry, Journal of Nanoscience and Nanotechnology, Gold Bulletin, Chemical Reviews, Journal of Bioconjugate Chemistry, Langmuir, ACS Catalysis, Energy and Environmental Science, Journal of Nanoparticle Research, Particle and Particle Systems Characterization, New Journal of Chemistry, RSC Advances, Journal of Materials Chemistry B, Accounts of Chemical Research, CrystEngComm, Angewandte Chemie, Analytical Chemistry, PLOS One, Journal of the American Chemical Society, ACS Nano, Scientific Reports.

Peer Reviewer: Proposals

Panel Reviewer for Department of Energy, Advanced Scientific Computing Research.

Reviewer for the American Chemical Society Petroleum Research Fund.

Reviewer for the Italian Ministry of Health.

Review for ISSNAF (Italian Scientists and Scholars of North America Foundation).

Reviewer for Brookhaven National Laboratory, Center for Functional Nanomaterials.

Mail Reviewer for Department of Energy, BES.

Panel Reviewer for National Science Foundation, various Directorates and Programs.

Other Contributions to the Advancement of the Academic Profession

08/2014: 2104 SES meeting, Chemnitz (Germany): Session Chair.

06/2014: Gordon Research Conference on Noble Metal Nanoparticles: Session Chair.

06/2014: Gordon Research Seminar on Noble Metal Nanoparticles: Session Chair and Career Panelist.

06/2012: Gordon Research conference on Noble Metal Nanoparticles: Session Chair.

08/2012: Nano 2012 conference, Rhodes, Greece August 21-26, 2012: Session Chair.

05/2013: IMI-SEE US-China Workshop. *Ad-hoc* panelist on the future of scientific collaborations between US and China. The National Academy of Sciences, Washington DC, 05/20-21/2013.

2011: Evaluation of Applications for Sigma Xi New Jersey Teacher's Awards (Rutgers Chapter).

10/2011: 2011 SWE Conference, Chicago IL. Invited Panelist (Panels Titles: "To Postdoc or Not to Postdoc" and "Tips on Teaching Engineering").

2010: Rutgers-UMDNJ Postdoc Association Day. Panelist.

11/2010: Society for Women in Engineering (SWE): 2010 Conference, Orlando FL. Invited Panelist (Panel Title: "To Postdoc or Not to Postdoc").