

# Felicia Tam

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## Education

- present      Ph.D. Physics  
Rice University, Houston, Texas  
Thesis Advisor: Professor Naomi J. Halas  
Thesis: *“Roles of Nanoparticle Plasmon Resonance Energy and Scattering on Fluorescence Enhancement”*  
M.S. Thesis (2005): *“Geometrical Parameters Controlling Sensitivity of Nanoshell Plasmon Resonances to Changes in Dielectric Environment”*
- 2002          B. S. Physics  
Stanford University, Stanford, CA

## Work Experience

- 2002 – present      Graduate Research Assistant, Department of Physics and Astronomy  
Rice University, Houston, Texas
- Mentored three undergraduate students
  - Initiated and led discussion group for introducing nanophotonics to 1<sup>st</sup> year students
- 2003 – present      Graduate Teaching Assistant, Department of Physics and Astronomy  
Rice University, Houston, Texas
- Led tutorial sessions for freshman level physics courses
- Summer 2000/2001      Research Assistant, Institute for Astronomy  
University of Hawaii, Honolulu, HI
- Analyzed Hubble Space Telescope and infrared telescope images of dwarf and spiral galaxies
  - Assessed gaps in Hubble Space Telescope data archive to plan future imaging
- 1998 – 2001          Research Assistant, Department of Physics  
Stanford University, Stanford, CA
- Updated models of solar transition region heating
  - Prepared and calibrated rocket payload for solar observations
- 1999 – 2001          Resident Math and Physics Tutor, Roble Hall  
Stanford University, Stanford, CA
- Coached dorm residents in introductory level math and physics courses
- 1997 – 2000          Research Assistant, Department of Physics  
Stanford University, Stanford, CA
- Performed stellar and galactic photometry of optical telescope images to investigate galactic motion

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- Summer 1999 REU Summer Research Assistant, Kitt Peak National Observatory  
National Optical Astronomy Observatory, Tucson, AZ
- Correlated optical and radio telescope data to classify and discover new astronomical objects
- Summer 1998 REU Summer Research Assistant, Maria Mitchell Observatory  
Maria Mitchell Association, Nantucket, MA
- Re-established the location, light curve, and periodicity of variable stars
  - Investigated the accuracy of various methods of analyzing photographic plates

#### Awards and Honors

1999 – 2001 Barry. M. Goldwater Scholarship

#### Professional Membership

Materials Research Society

American Physical Society

International Society for Optical Engineering - SPIE

#### Academic Service and Activities

2001 – present Recruitment Volunteer, Stanford Admission Office

2002 – 2004 Officer, Physics and Astronomy Graduate Student Association

2003 – 2005 Rice Women's Club Volleyball Team

#### Publications

L.R. Hirsch, A.M. Gobin, A.R. Lowery, F. Tam, R.A. Drezek, N.J. Halas, J.L. West, "Metal Nanoshells," *Annals of Biomedical Engineering*, **34**, 15, 2006.

H. Wang, F. Tam, N.K. Grady, N.J. Halas "Cu nanoshells: Effects of interband transitions on the nanoparticle plasmon resonance," *J. Phys. Chem. B*, **109**, 18218, 2005.

H. Wang, G.P. Goodrich, F. Tam, C. Oubre, P. Nordlander, N.J. Halas "Controlled texturing modifies the surface topography and plasmonic properties of au nanoshells," *J. Phys. Chem. B* **109**, 11083, 2005.

C.L. Nehl, N.K. Grady, G.P. Goodrich, F. Tam, N.J. Halas, J.H. Hafner "Scattering spectra of single gold nanoshells" *Nano Lett.* **4** 2355, 2004.

F. Tam, C.E. Moran, N.J. Halas "Geometrical parameters controlling sensitivity of nanoshell plasmon resonances to changes in dielectric environment," *J. Phys. Chem. B* **108** 17290, 2004.

A. Davis, K. Barkume, C. Springob, F. Tam, V. Strel'nitski "Stellar Photometry Using Old Photographic Plates," *JAAVSO* **32**, 117, 2004.

F. Tam, N.J. Halas "Plasmon response of nanoshell dopants in organic films: a simulation study," *Progress in Organic Coatings* **47**, 275, 2003.

F. Tam, N. Samus "Six 'Lost' Mira Variables Recovered on MMO Plates," *JAAVSO* **28**, 94, 2000.

N. Samus, F. Tam "Two Long-Neglected Interesting Eclipsing Binaries," *IBVS* **4639**, 1, 1998.

Presentations

“Designing Nanoshell Platforms in the Mesoscopic Regime for Chemical Sensing” F. Tam, A.C. Chen, J. Kundu, H. Wang, and N.J. Halas, oral presentation, Materials Research Society Fall Meeting, Boston, MA, November 2006.

“Effect of Vicinal Tunable Plasmonic Nanostructures on the Fluorescence Emission of Indocyanine Green” F. Tam, G.P. Goodrich, N.J. Halas, SPIE Optics and Photonics, San Diego, CA, August 2006.

“Au Nanonoshells with TiO<sub>2</sub> and ZnO Layer Coatings” R. Bardhan, H. Wang, F. Tam, N.J. Halas, 20<sup>th</sup> Rice Quantum Institute Summer Research Colloquium, Houston, TX, August 2006.

“Plasmon-based Enhanced NSOM Spectroscopy” A.T. Chang, C.L. Nehl, F. Tam, N.J. Halas, J.H. Hafner, K.F. Kelly, 20<sup>th</sup> Rice Quantum Institute Summer Research Colloquium, Houston, TX, August 2006.

“Effect of Plasmon Energy on Molecular Fluorophore Emission” F. Tam, G.P. Goodrich, B.R. Johnson, and N.J. Halas, Plasmonics Gordon Research Conference, Keene, NH, July 2006.

“Plasmon-based Enhanced NSOM Spectroscopy” A.T. Chang, C.L. Nehl, F. Tam, N.J. Halas, J.H. Hafner, K.F. Kelly, American Physical Society March Meeting, Baltimore, MD, March 2006.

“Gold Nanoparticle Enhanced Fluorescence of Indocyanine Green” F. Tam, G.P. Goodrich, N.J. Halas, 19<sup>th</sup> Rice Quantum Institute Summer Research Colloquium, Houston, TX, August 2005.

“Cu Nanoshells: Effects of Interband Transitions on the Nanoparticle Plasmon Resonance” H. Wang, F. Tam, N.K. Grady, N.J. Halas, 19<sup>th</sup> Rice Quantum Institute Summer Research Colloquium, Houston, TX, August 2005.

“Plasmonic Nanoparticle Self-Assembly” N.A. Mirin, F. Tam, N.J. Halas, 19<sup>th</sup> Rice Quantum Institute Summer Research Colloquium, Houston, TX, August 2005.

“Investigating Parameters Controlling Nanoshell SPR Sensitivity” F. Tam, C. E. Moran, N. J. Halas, American Physical Society March Meeting, Montreal, Canada, March 2004.

“Scattering Spectra of Single Gold Nanoshells” J.H. Hafner, C.L. Nehl, G.P. Goodrich, F. Tam, N.J. Halas, American Physical Society March Meeting, Montreal, Canada, March 2004.

“Nanoshell Surface Plasmon Resonance (SPR) Sensing” F. Tam, C.E. Moran, N.J. Halas, 17<sup>th</sup> Rice Quantum Institute Summer Research Colloquium, Houston, TX, August 2003.

“Influence of Chemical Functionalization on the Plasmon Properties of Metallodielectric Gratings and Nanoshells” C. E. Moran, J. Steele, F. Tam, C. Aguirre, N. J. Halas, American Physical Society March Meeting, Austin, TX, March 2003.

“Dependence of Nanoshell Plasmon Response on Embedding Medium” F. Tam, C.E. Moran, N.J. Halas, 16<sup>th</sup> Rice Quantum Institute Summer Research Colloquium, Houston, TX, August 2002.

“FIRST Radio Sources in the NOAO Deep Wide-Field Survey” F. Tam, B.T. Jannuzi, A. Dey, American Astronomical Society Meeting, Atlanta, GA, December 1999.

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“Rediscovering Long-Neglected Nantucket and Harvard Variables” F. Tam, N. Samus, American Astronomical Society Meeting, Austin, TX, December 1998.

“A Comparison of Three Methods of Photographic Plate Photometry” V. Strel'nitski, C. Springob, F. Tam, American Astronomical Society Meeting, Austin, TX, December 1998.