

Nilanthi Warnasooriya, Ph.D.

Education

- 2003-2008: Ph.D. in Applied Physics, University of South Florida, Tampa, FL (12/2008)
Research: Multi-wavelength optical phase unwrapping for quantitative phase microscopy.
Advisor: Dr. M. K. Kim
- 2001-2003: M.S. in Physics with High Energy Nuclear Physics, Creighton University, Omaha, NE
(05/2003)
Research: Search for X(1750) in Ultra Peripheral Collisions at the Solenoidal Tracker at
RHIC Detector .
Advisor: Dr. J. E. Seger
- 1996-2000: B.S. in Physics, University of Colombo, Sri Lanka (08/2000)
Project: Study of the stability and efficiency of compact fluorescent lamps.
Advisor: Dr. K. T. L. de Silva

Research Interests

Quantitative phase microscopy, phase imaging microscopy techniques, digital holography, optics,
biomedical optics

Research Experience

Biomedical Engineering Department, Texas A&M University, College Station, TX

Postdoctoral Research Associate 09/01/09- Present
• Pump-probe optical coherence microscopy

Laboratoire d'Optique, École Supérieure de Physique et de Chimie Industrielles de la Ville de Paris (ESPCI), Paris, France

Postdoctoral Researcher 10/01/08- 07/15/09
• 3D visualization of nanometric metallic particles in cellular environment
• Photothermal detection of nanoparticles, holographic reconstructions of the
3D shape and direction of the light scattered by small particles submitted
to excitation of different intensities and frequencies.

Varioptic SA, Lyon, France

Research Assistant (Industrial Practicum) 07/20/07-08/27/07
• Modulation transfer function (MTF) analysis of liquid lenses, camera phones and image
analysis of web cameras.

University of South Florida, Tampa, FL

Graduate Research Assistant 08/01/03-09/28/08
• Development of multi-wavelength phase imaging interference microscopy
• Designing and constructing bench-top apparatus for Michelson-type interferometer, a phase
shifting method and phase unwrapping methods
• Image acquisition, phase calculations, image handling and processing using LabVIEW

Teaching Experience

University of South Florida, Tampa, FL

08/01/03-06/30/08

Graduate Teaching Assistant

- Courses Taught: General Physics Laboratories
- Duties: teaching, preparing weekly quizzes & homework problems, grading

Creighton University, Omaha, NE

08/15/01-05/31/03

Graduate Teaching Assistant

- Courses Taught: General Physics Laboratories, Astronomy Laboratories
- Duties: teaching, grading lab reports

University of Colombo, Colombo, Sri Lanka

06/01/00-07/31/01

Physics Laboratory Demonstrator

- Courses Taught: General Physics Laboratories
- Duties: teaching, preparing weekly quizzes & homework problems, grading

- Experience with Blackboard learning management system.

Professional Development & Teaching Enhancements

- Workshop, “Classroom Management” conducted by American Board for Certification for Teacher Excellence, August 19, 2008.
- Workshop “Conducting Real-Time Online Classrooms Using Elluminate Live!” conducted by Center for 21st Century Teaching Excellence, University of South Florida, September 5, 2008.
- Workshop “Converting Courses to Online” conducted by Center for 21st Century Teaching Excellence, University of South Florida, September 12, 2008.
- On-line course, “How Teams Work – and How to Work Better in Teams” conducted by The Center for the Integration of Research, Teaching and Learning (CIRTL), January-May 2010.
- On-line course, “Effective Use of Technology in Teaching and Learning” conducted by The Center for the Integration of Research, Teaching and Learning (CIRTL), January-May 2010.
- Education Seminar: “There's an applet for that: the impact of interactive tools on student learning” Conducted by Center for the Integration of Research, Training and Learning (CIRTL) at Texas A&M University, April 26, 2010.
- Leadership Workshop: “Leading Successfully in a Post-Doctoral Work Group: How to lead graduate students, technicians and other group members” Conducted by Center for the Integration of Research, Training and Learning (CIRTL) at Texas A&M University, May 21, 2010.
- Workshop, “Budget Proposals” Conducted by Center for the Integration of Research, Training and Learning (CIRTL) at Texas A&M University, June 4, 2010.

Special Skills

Proficiency in LabVIEW, knowledge in Matlab.

Awards and Professional Memberships

- Nominee for 2007 Provost’s Award for Outstanding Teaching by a Graduate Teaching Assistant.
- Summer Research Fellowship 2007, Department of Physics, University of South Florida, Tampa, FL.
- Member, Optical Society of America.
- Member, Sigma Pi Sigma, The National Physics Honor Society.
- Full Member, Sigma Xi, The Scientific Research Society.

Professional Services

- Manuscript reviewer for Optics Express.
- Manuscript reviewer for Optics Letters.
- Manuscript reviewer for Journal of Electronic Imaging.
- Manuscript reviewer for Optical Engineering.

Book Chapters

- **Nilanthi Warnasooriya** and Myung K. Kim (2010). “Quantitative Phase Imaging using Multi-wavelength Optical Phase Unwrapping”, *Advances in Lasers and Electro Optics*, Nelson Costa and Adolfo Cartaxo (Ed.), ISBN: 978-953-307-088-9, INTECH.

Peer-Reviewed Journal Publications

- 1) S. Y. Suck, G. Tessier, **N. Warnasooriya**, A. Babuty, Y. De Wilde, “Frequency-resolved temperature imaging of integrated circuits with full field heterodyne interferometry,” *Applied Physics Letters* **96**, 121108 (2010).
- 2) **N. Warnasooriya**, F. Joud, P. Bun, G. Tessier, M. Coppey-Moisan, P. Desbiolles, M. Atlan, M. Abboud, M. Gross, “Imaging gold nanoparticles in live cell environments using heterodyne digital holographic microscopy,” *Optics Express* **18**, 3264-3273 (2010). *Also featured in Virtual Journal for Biomedical Optics, Vol.5, Iss.5*
- 3) E. Absil, G. Tessier, M. Gross, M. Atlan, **N. Warnasooriya**, S. Suck, M. Coppey-Moisan, “Photothermal heterodyne holography of gold nanoparticles,” *Optics Express* **18**, 780-786 (2010). *Also featured in Virtual Journal for Biomedical Optics, Vol.5, Iss.3*
- 4) **N. Warnasooriya** and M. K. Kim, “Quantitative phase imaging using three-wavelength optical phase unwrapping,” *Journal of Modern Optics*, 56:1, 85 - 92 (2009).
- 5) **N. Warnasooriya** and M. K. Kim, “LED-based multi-wavelength phase imaging interference microscopy,” *Optics Express* **15**, 9239-9247 (2007). *Also featured in Virtual Journal for Biomedical Optics, Vol.2, Iss.8*

Conference Presentations and Proceedings

- 1) Fadwa Joud, **Nilanthi Warnasooriya**, Phillippe Bun, Gilles Tessier, Michael Atlan, Pierre Desbiolles, Maïté Coppey-Moisan, Marie Abboud, Michel Gross, “Three dimensional imaging of living cells labeled with gold nanobiomarkers using phase shifting heterodyne digital holographic microscopy,” Paper 7675-33, SPIE Photonics West, San Francisco, California on January 26, 2010.
- 2) **N. Warnasooriya**, F. Joud, P. Bun, S. Suck, M. Gross, M. Coppey-Moisan, G. Tessier, “Heterodyne holographic microscopy for 3D imaging of live cells labeled with gold nanoparticles,” *Frontiers in Optics*, San Jose, California on October 11-15, 2009.
- 3) **N. Warnasooriya**, E. Absil, G. Tessier, F. Joud, M. Gross, M. Atlan, S. Suck and D. Fournier, “Heterodyne holography applied to the photothermal detection of gold nanoparticles,” 15th International Conference on Photoacoustic and Photothermal Phenomena (ICPPP15), Leuven, Belgium on June 19-23, 2009.
- 4) S. Y. Suck, **N. Warnasooriya**, A. Babuty, Y. De Wilde and G. Tessier, “Frequency-resolved temperature imaging of integrated circuits with heterodyne holography,” 15th International Conference on Photoacoustic and Photothermal Phenomena (ICPPP15), Leuven, Belgium on June 19-23, 2009.
- 5) **Nilanthi Warnasooriya**, Fadwa Joud, Philippe Bun, Gilles Tessier, Mickaël Atlan, Michel Gross, Pierre Desbiolles and Maïté Coppey-Moisan “Heterodyne holographic microscopy for the 3D imaging of live cells labeled with gold nanoparticles,” International Conference on Nanosystem Engineering and Biophotonics (NEBO), Cachan, France on April 01, 2009.

- 6) **N. Warnasooriya** and M. K. Kim, "Optical Phase Unwrapping with Laser-diode Phase Shifting Interferometry," OSA Digital Holography and Three Dimensional Imaging Topical Meeting, St. Petersburg, Florida on March 19, 2008.
- 7) **N. Warnasooriya** and M. K. Kim, "Phase-Shifting Interference Microscopy with Multi-Wavelength Optical Phase Unwrapping," OSA Digital Holography and Three-Dimensional Imaging Topical Meeting, Vancouver, Canada, June 18, 2007.
- 8) **N. Warnasooriya** and M. K. Kim, "Quantitative Phase Microscopy by Multi-Wavelength Phase-Shifting Interference Microscopy," The Conference on Lasers and Electro-Optics (CLEO), Baltimore, MD, May 8, 2007.
- 9) **N. Warnasooriya** and M. K. Kim, "LED-based Phase-Shifting Interference Microscopy with Multi-wavelength Optical Phase Unwrapping," Graduate Research Symposium, University of South Florida, Tampa, FL, March 20, 2007.
- 10) **N. Warnasooriya** and M. K. Kim, "Phase -Shifting Interference Microscopy with Multi-wavelength Optical Phase Unwrapping Microscopy," 3rd Annual Integrative Graduate Education and Research Traineeship (IGERT) Symposium, University of South Florida, Tampa, FL, April 11, 2007.
- 11) **N. Warnasooriya** and M. K. Kim, "Multi-wavelength Phase Imaging Interference Microscopy," Graduate Research Symposium, University of South Florida, Tampa, FL, April 20, 2006.
- 12) **N. Warnasooriya** and M. K. Kim, "LED-based Phase Imaging Interference Microscopy with Multi-wavelength Optical Phase Unwrapping," 2nd Annual Integrative Graduate Education and Research Traineeship (IGERT) Symposium, University of South Florida, Tampa, FL, April 5, 2006.
- 13) **N. Warnasooriya** and M. K. Kim, "LED-based Phase Imaging Interference Microscopy with Multi-wavelength Optical Phase Unwrapping," OSA Biomedical Optics Conference, Ft. Lauderdale, FL, March 19-22, 2006.
- 14) **N. Warnasooriya** and M. K. Kim, "Multi-wavelength Phase Imaging Interference Microscopy," Three-Dimensional and Multidimensional Microscopy: Image Acquisition and Processing XIII, part of the Biomedical Optics (BiOS) symposium, The International Society for Optical Engineering, San Jose, CA, January 21-26, 2006.
- 15) **N. Warnasooriya** and Janet Seger, "Search for X (1750) in Ultra Peripheral Collisions at STAR," The Nebraska Academy of Sciences on April 25, 2003.
- 16) **N. Warnasooriya** and Janet Seger, "Search for X (1750) in Ultra Peripheral Collisions at STAR," Poster presentation for St. Albert's Day, Creighton University on November 11, 2002.
- 17) **N. Warnasooriya** and Janet Seger, "Ultra Peripheral Collision Program at STAR," The Nebraska Academy of Sciences on April 26, 2002.

Invited Talks

"Three-wavelength Phase Imaging Interference Microscopy and Heterodyne Holographic Microscopy for 3D Imaging of Live Cells Labeled with Gold Nanoparticles," Biomedical Engineering Department's Seminar Series, Department of Biomedical Engineering, Texas A&M University on February 01, 2010.