

UNC Charlotte Optics Faculty
Publications 2003-2005

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U. Shahid and **M.A. Fiddy**, "Minimum phase constraint: a solution to the inverse scattering problem," Proc. Optics in the South East, p98 (2004).

P. Shoghi and **J. G. Naeini**, "Multi-wavelength Raman Fiber Amplifiers," The Undergraduate Research Conference, UNC-Charlotte, (2005).

Sisk, W.N. (2003, November). *Photostability enhancement of PM597 via toxic amines*. Paper presented at the Optics in the Southeast meeting of the Optical Society of America, Orlando, FL

J. Srikant, **M. Y. A. Raja**, K. Ahmad, and **S. Williams**, "C- and L-Band Prototype Optical Amplifier Based on Er:Yb Co-Doped Active Fibers", presented and extended abstract in OISE'04, Optics in South East , (2004).

Stokes, E.B. (2004, February 6). *Wide bandgap optoelectronic devices: quantum dots and deep acceptors*. Presentation at Department of Chemistry and Biochemistry, Duquesne University, Pittsburgh, PA.

Stokes, E.B. (2004, January 15). *Wide-bandgap semiconductor research at UNC Charlotte*. Presentation at General Electric Global Research Center, Niskayuna, NY.

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T.D. Visser, H.F. Schouten, **G. Gbur** and D. Lenstra, “Optical vortices and the radiation pattern of subwavelength slits,” OSA Annual Meeting, Rochester, NY, (2004).

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Grants Awarded 2003 – 2005

THOMAS DUBOIS	Chemistry	
BERNADETTE DONOVAN-MERKERT	Chemistry	
KENNETH GONSALVES	Chemistry	
CRAIG OGLE	Chemistry	
DANIEL RABINOVICH	Chemistry	
NSF		\$250,445
RUI/MRI - Purchase of a 400 MHz NMR Spectrometer		
MAHNAZ EL-KOUEDI	Chemistry	
Oak Ridge Associated Universities		\$5,000
Porous Aluminum Oxide Based Nanotechnology		
KENNETH GONSALVES	Chemistry	
Intel Corp		\$79,662
Kinetics & Diffusion Studies in Polymer-bound PAG Resists for EUVL		
KENNETH GONSALVES	Chemistry	
Intel Corp		\$30,000
Kinetics & Diffusion Studies in Polymer-bound PAG Resists for EUVL		
JORDAN POLER	Chemistry	
NSF		\$99,933
NER: Diameter Specific Separations of Carbon Nanotubes for 3D Nanoassembling		
WEI CAI	Mathematics and Statistics	
DOD/Air Force/Office of Scientific Research		\$14,823
International Conference on the Research Trend in PDE Modeling and Computation		
WEI CAI	Mathematics and Statistics	
DOD/Army/Army Research Office		\$10,000
International Conference on the Research Trend in PDE Modeling and Computation		
WEI CAI	Mathematics and Statistics	
NSF		\$231,673
Numerical Methods for Maxwell Equations in Dispersive and Loss in Homogeneous Media		
WEI CAI	Mathematics and Statistics	
Dept of Energy		\$180,049
Algorithms for Nonlinear Maxwell Equations in Nonhomogeneous Media and Photonic Resonant Waveguides with Coupled Microspheres		
MICHAEL KLIBANOV	Mathematics and Statistics	
North Atlantic Treaty Organization		\$12,182
Methods of Optimization of Layered Structures for Protection of the Personnel		
MICHAEL KLIBANOV	Mathematics and Statistics	
DOD/Army/Army Research Office		\$45,000
Globally Convergent Numerical Methods for Coefficient Inverse Problems		
STANISLAV MOLCHANOV	Mathematics and Statistics	
BORIS VAINBERG	Mathematics and Statistics	
NSF		\$156,378
Wave Propagation and Scattering for Periodic and Randomly Perturbed Periodic media		
VASILY ASTRATOV	Physics and Optical Science	
Duke University		\$20,000
Synthetic Opals for Multimodal Spectroscopy of Diffusive Sources of Light		
ANGELA DAVIES	Physics and Optical Science	
NSF		\$236,251
GOALI: A Symmetry-Based Group Theory Approach to Data Reduction for Micro Optics Manufacturing		

ANGELA DAVIES NSF CAREER: Self-Calibration Metrology Advances for Micro-Optics Manufacturing	Physics and Optical Science \$400,000
ANGELA DAVIES Northrop Grumman Corp Characterization of Optical Materials with a Zygo MST Interferometer	Physics and Optical Science \$5,619
ANGELA DAVIES ROBERT HOCKEN Eastman Kodak Co Ultra Precision Coordinate Measuring Machine	Physics and Optical Science Mechanical Engineering & Engineering Science \$192,736
ANGELA DAVIES NSF REU Supplemental Request for CAREER: Self-Calibration Metrology Advances for Micro-Optics Manufacturing, award No.0348142	Physics and Optical Science \$12,000
MICHAEL FIDDY Oak Ridge Associated Universities ORAU Visiting Industrial Scholars Program	Physics and Optical Science \$600
MICHAEL FIDDY DOD/Defense Advanced Research Projects Agency Advanced Integrated Technologies	Physics and Optical Science \$2,287,500
MICHAEL FIDDY TOM SULESKI Duke University Compressive Optical MONTAGE Photography Initiative	Physics and Optical Science Physics and Optical Science \$74,091
MICHAEL FIDDY UNC Office of the President North Carolina Photonics Initiative Phase II	Physics and Optical Science \$20,000
MICHAEL FIDDY TOM SULESKI Duke University Compressive Optical MONTAGE Photography Initiative	Physics and Optical Science Physics and Optical Science \$74,091
GREGORY GBUR DOD/Air Force/Office of Scientific Research Developing 'superbeams' for improved propagation through turbulence	Physics and Optical Science \$35,232
PATRICK MOYER Optocon Inc Simulation and Measurement for Optocon	Physics and Optical Science \$5,797
M YASIN RAJA NSF International Workshop on High Capacity Optical Networks and Enabling Technologies	Physics and Optical Science \$32,000
ROBERT TYSON Boeing Co Phase Diversity Wavefront Sensing	Physics and Optical Science \$30,000
ROBERT TYSON Brashear LP Adaptive Optics Tool Development	Physics and Optical Science \$79,329
ROBERT TYSON Intellite Inc Development of an Adaptive Optics System for Improved Viewing	Physics and Optical Science \$30,573

ROBERT TYSON Brashear LP Adaptive Optics Tool Development	Physics and Optical Science \$55,720
JAMES CONRAD IVAN HOWITT Frontline Test Equipment Inc Test specification and test case development of communication protocols	Electrical & Computer Engineering Electrical & Computer Engineering \$38,872
JAMES CONRAD IVAN HOWITT Frontline Test Equipment Inc Communication Protocol Decoder and Test Data Development	Electrical & Computer Engineering Electrical & Computer Engineering \$6,432
JAMES CONRAD Institute of Electrical and Electronics Engineers Web site Development and Maintenance for 2005	Electrical & Computer Engineering \$1,000
MICHAEL FIDDY DOD/Air Force/Office of Scientific Research Support for workshop on Inverse Scattering	Electrical & Computer Engineering \$3,000
EDWARD STOKES MOHAMMED-ALI HASAN Dot Metrics Technologies Nanostructured Active Layers for Deep-green Light Emitting Diodes (LED)	Electrical & Computer Engineering Electrical & Computer Engineering \$26,893
EDWARD STOKES MOHAMMED-ALI HASAN Dot Metrics Technologies Novel Active Layer Nanostructures for White Light Emitting Diodes	Electrical & Computer Engineering Electrical & Computer Engineering \$27,764
EDWARD STOKES MOHAMMED-ALI HASAN Dot Metrics Technologies Phase 2 SBIR: Nanostructured active layers for deep-green light emitting diodes(LEDs)	Electrical & Computer Engineering Electrical & Computer Engineering \$57,000
EDWARD STOKES Dept of Commerce/NIST 2005 NIST Summer Undergraduate Research Fellowship Maryland	Electrical & Computer Engineering \$20,382
EDWARD STOKES RF Micro Devices Metal organic chemical vapor deposition (MOCVD) reactor donation	Electrical & Computer Engineering \$363,517
RAPHAEL TSU SVT Association Inc. Development of III-V Terahertz Quantum Cascade Laser	Electrical & Computer Engineering \$30,000
RAPHAEL TSU Nanodynamics Inc Reduction of Defects and Growth Temperature by the Use of Ultrasound	Electrical & Computer Engineering \$19,875
RAPHAEL TSU DOD/Army/Army Research Office Structural and Electrical - Optical Characterizations of Semiconductor - Atomic Superlattice	Electrical & Computer Engineering \$84,999
RAPHAEL TSU SVT Association Inc. Development of III-V Terahertz Quantum Cascade Laser	Electrical & Computer Engineering \$27,565
RAPHAEL TSU Northrop Grumman Corp SiC Superlattice Nano Science for Military Electronics Applications	Electrical & Computer Engineering \$149,916
RAPHAEL TSU	Electrical & Computer Engineering

DOD/Army/Army Research Office	\$35,000
Structural and Electrical - Optical Characterizations of Semiconductor - Atomic Superlattice	
RAPHAEL TSU	Electrical & Computer Engineering
KASRA DANESHVAR	Electrical & Computer Engineering
JOHN HUDAK	Cameron Applied Research Center
Northrop Grumman Corp	\$568,856
Silicon-Carbide Superlattice Device Development	
FALIH AHMAD	Engineering Technology
DOD/Army/Corps of Engineers	\$67,174
Investigations in MI, SAR, ISAR, and InSAR Systems: Techniques, Measurements and Algorithms for Composite Materials	
FALIH AHMAD	Engineering Technology
DOD/Army/Corps of Engineers	\$32,825
Analysis of SAR Measurement Techniques	
MATTHEW DAVIES	Mechanical Engineering & Engineering Science
EDWARD STOKES	Electrical & Computer Engineering
Dept of Commerce/NIST	\$13,704
Summer Undergraduate Research Fellowship	
MATTHEW DAVIES	Mechanical Engineering & Engineering Science
ANGELA DAVIES	Physics and Optical Science
MICHAEL FIDDY	Physics and Optical Science
PATRICK MOYER	Physics and Optical Science
NSF	\$430,501
MRI: Nano-solid Freeform Generator for Micor-Optics Replication	
MATTHEW DAVIES	Mechanical Engineering & Engineering Science
Suresight LLC	\$15,628
Donation of Long Distance Laser Measurement Systems	
ROBERT HOCKEN	Mechanical Engineering & Engineering Science
ANGELA DAVIES	Physics and Optical Science
MATTHEW DAVIES	Mechanical Engineering & Engineering Science
PATRICK MOYER	Physics and Optical Science
SCOTT SMITH	Mechanical Engineering & Engineering Science
NSF	\$120,000
Supplement: I/UCRC International Collaboration for Production for Precision Micro-Optic Components	
ROBERT HOCKEN	Mechanical Engineering & Engineering Science
ANGELA DAVIES	Physics and Optical Science
EDWARD MORSE	Mechanical Engineering & Engineering Science
ROBERT WILHELM	Mechanical Engineering & Engineering Science
NSF	\$86,000
Industry/University Cooperative Research Center for Precision Metrology	
ROBERT HOCKEN	Mechanical Engineering & Engineering Science
TERRILL MAYES	Physics and Optical Science
PATRICK MOYER	Physics and Optical Science
NSF	\$24,513
A Near-field Scanning, Phase-contrast Microscope	
ROBERT HOCKEN	Mechanical Engineering & Engineering Science
University of California at Los Angeles	\$73,040
NSEC: Center for Scalable and Integrated NAno Manufacturing (SINAM)	
ROBERT HOCKEN	Mechanical Engineering & Engineering Science
University of California at Los Angeles	\$30,000
Nano-Linear Optical Encoder	
BRIGID MULLANY	Mechanical Engineering & Engineering Science
Northrop Grumman Corp	\$11,200
Donation of a polisher and a wire saw from Northrop Grumman Synoptics	