MADALINA I. FURIS

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EDUCATION

UNIVERSITY AT BUFFALO, STATE UNIVERSITY OF NEW YORK, Buffalo, New York

Ph. D in Physics, February 2004
Advisors: Professors Bruce D. McCombe and A. N. Cartwright – Center for Advanced Electronic and Photonic Materials (CAPEM) and the Laboratory for Spectroscopic Evaluation (LASELAB)
Thesis: "Time –Resolved Photoluminescence Spectroscopy of Nitride Emitters"

UNIVERSITY OF BUCHAREST, Bucharest, Romania
M.S in Semiconductor Physics, June 1997
Advisor: Professor Ioan Licea-Faculty of Physics, Division of Solid State Physics
Thesis: "Hot Electrons Distribution Function and Breakdown Ionization in Semiconductors"

UNIVERSITY OF BUCHAREST, Bucharest, Romania
B.S in Solid State Physics, June 1996
Advisor: Professor Ioan Licea-Faculty of Physics, Division of Solid State Physics
Thesis: "Poole-Frankel Effect in Amorphous Chalcogenides"

Professional Society Affiliations:

American Physical Society, Materials Research Society

EXPERIENCE

UNIVERSITY OF VERMONT-PHYSICS DEPARTMENT Aug. 2006-present
Assistant Professor

- Magneto-optical microscopy studies of electron states in organic semiconductors
- Mapping spin transport in semiconductors using magneto-optical Kerr effect spectroscopy

NATIONAL HIGH MAGNETIC FIELD LABORATORY-LOS ALAMOS Mar. 2004- Aug. 2006
Post-Doctoral Associate – Optics and Lasers Operations
Supervisor: Dr. Scott A. Crooker

- Mapping the exciton fine structure in CdSe colloidal nanocrystals through CW and time-resolved photoluminescence spectroscopy in high magnetic fields (< 33T).

- Imaging spin currents in ferromagnet-semiconductor lateral spin transport devices using magneto-optical Kerr effect spectroscopy.
- Operation of DC superconducting magnets, CW and ultrafast lasers.

UNIVERSITY AT BUFFALO, STATE UNIVERSITY OF NEW YORK Sept. 2001-Feb. 2004
Research Assistant – Institute for Lasers, Photonics and Biophotonics and the Center for Advanced Photonics and Electronics Materials (CAPEM)
Advisors: Dr. A. N. Cartwright and Dr. Bruce. D. McCombe

- Continuous wave and ultrafast optical properties of GaN/AlN quantum well heterostructures and AlGaN epilayers
- Alignment and maintenance of the CAPEM ultrafast laser facility (Ti-sapphire oscillator, regenerative amplifier, OPAs)
- CW and time-resolved photoluminescence studies of GaP and InP nanoparticles grown by colloidal chemistry (a collaboration with the Institute for Lasers, Photonics, and Biophotonics at UB).
- Market analysis and scientific evaluation of a laser spectrum analyzer system (a collaboration with the UB Technology Incubator and Imaging and Sensing Technologies, PI: A.N. Cartwright)

UNIVERSITY AT BUFFALO, STATE UNIVERSITY OF NEW YORK Jan. 1999-Sept. 2001
Research Assistant- Center for Advanced Photonics and Electronics Materials
Advisors: Dr. Athos Petrou and Dr. Bruce D. McCombe.

- Magneto-photoluminescence, reflection and transmission studies of ferromagnetic GaAs/Mn digital layers and Mn –doped GaAs epilayers grown by molecular beam epitaxy.(DARPA SpinS-Program- PI: Dr. Bruce D. McCombe)
- Magneto-photoluminescence and electroluminescence studies of recombination mechanisms in ZnMnSe/GaAs/AlGaAs Spin-LED's.
- Optically detected resonance experiments on diluted magnetic II-VI semiconductors: internal transitions of negatively charged excitons and spin flip transitions in CdTe and CdMnTe quantum wells.

UNIVERSITY AT BUFFALO, STATE UNIVERSITY OF NEW YORK Sept.1997-Jan. 1999
Teaching Assistant – Physics Department

Teaching Assignments:

Fall '06 PHYS 11- College Physics 1 (recitation)
Spring '07 PHYS 296-Physical Optics (Lecture- New Course)
Fall '07 PHYS 214- Electromagnetism II (Lecture)
Fall'07 PHYS 42 Physics for Engineers II (Recitation)
Fall '07 PHYS 21 Introductory Laboratory
Spring' 08 PHYS 213 Electromagnetism I (Lecture)
Spring '08 PHYS 31 Physics for Engineers I (Recitation)
Fall '08 PHYS 214 Electromagnetism II (Lecture)
Fall '08 PHYS 51 - Intro Phys for Physics Majors (Recitations and Labs, New Course)
Spring '09 PHYS 213 Electromagnetism I (Lecture)
Fall '09 PHYS 51 - Intro Phys for Physics Majors (Lectures and Labs)
Fall '09 PHYS 196- Contemporary Issues in Physics (Lecture-New Course)

MEMBERSHIP IN THESIS COMMITTEES

Hua Zhang (PhD Material Science -UVM)
Konstantin Afanasyev (Masters in Physics-UVM)
Nathan Mahany (Masters in Medicinal Chemistry-UVM)
Songtao Wo (PhD Material Science-UVM)

ADVISEES

Zhenwen Pan (PhD Material Science – UVM)
Naveen Rawat (PhD Material Science-UVM)
Lane Manning (BS Physics -UVM- URECA awardee) (research mentor)
Margaret Sutton (BS Physics-UVM) (research mentor)
Christopher Gordon Libby (BS Physics-UVM) (research mentor)
Eli Kinigstein (BS Physics-UVM) (summer experience mentor)

DEPARTAMENT AND COLLEGE ACTIVITIES

2006-2007 Chair search committee member
2007-2008 Physics Colloquium Committee Chair
2007 Participant in the Material Science Program review
2007-2008 Member in the CAS Faculty Development Award proposal review panel
Feb 2008 Attended the APS Conference on graduate education
2008-2009 Member in the Faculty Search Committees for the Theoretical and Experimental Condensed Matter Physics Junior Faculty positions
2008-2010 Physics Colloquium co-organizer
2008-2010 Member in the CAS APLE, Suiter and Faculty Development award proposal review panels (Fall and Spring semesters)

SYNERGISTIC ACTIVIES

Jumpstarted the Women in Physics Club at UVM (Fall '08)
Organized and ran the Physics and Material Science Journal Club at UVM (Fall '08/spring '09)
Participated in the “Spin Electronics” proposal review panel at NSF (ECCS division-March ’07)
Member of the National High Magnetic Field (NHMFL) Users Committee since fall ‘07.
Member of the National High Magnetic Field Laboratory (NHMFL) Users Executive Committee since Fall '08
Member of the Graduate Faculty at the University of Vermont since Fall ‘06.
Co-organizer of the " Optical Spectroscopy in the Florida Helix" Workshop hosted at the National High Magnetic Field Laboratory in Tallahassee Florida, Oct 1st 2009
Ad-hoc proposal reviewer for NSF –DMR division
Ad-hoc reviewer for Physical Review Letters and Physica E

PUBLICATIONS

Book Chapters:

1. "*Quantum Dot Devices*", M. Furis and A. N. Cartwright, in *Encyclopedia of Optical Engineering*, Marcel Dekker Inc., New York , pp. 2188-2196 (2003).

Peer –Reviewed Journals:

1. *"Anomalous Circular Polarization of Photoluminescence Spectra of Individual CdSe Nanocrystals in an Applied Magnetic Field"* H. Htoon, S. A. Crooker, M. Furis, S. Jeong, Al. L. Efros, and V. I. Klimov, Phys Rev. Lett 102, 017402 (2009). (1 citation, impact factor 7)
2. *"Linearly Polarized 'Fine Structure'of the Bright Exciton State in Individual CdSe Nanocrystal Quantum Dots"* H. Htoon, M. Furis, S. A. Crooker, S. Jeong, and V. I. Klimov Phys. Rev B **77**, 035328 (2008). (3 citations, impact factor 3.1)
3. *"Local Hanle-effect studies of spin drift and diffusion in n : GaAs epilayers and spin-transport devices"(invited)* M. Furis, D. L. Smith, S. Kos, E. S. Garlid, K. S. M. Reddy, C. J. Palmstrøm, P .A. Crowell, and S. A. Crooker, New J. Phys. **9**, 347 (2007) (5 citations, impact factor 3.3)
4. *"Optical and electrical spin injection and spin transport in hybrid Fe/GaAs devices",* S. A. Crooker, M. Furis, X. Lou, P. A. Crowell, D. L. Smith, C. Adelmann, and C. J. Palmstrøm, J. Appl. Phys. **101**, 081716 (2007) (5 citations, impact factor 2.3)
5. *"Bias-Dependent Electron Spin Lifetimes in n-GaAs and the Role of Donor Impact Ionization",* M. Furis, D. L. Smith, S. A. Crooker, and J. L. Reno, Appl. Phys. Lett. **89**, 102102 (2006). (8 citations, impact factor 4)
6. *"Bright Exciton Fine- Structure and Anisotropic Exchange in CdSe Nanocrystal Quantum Dots",* M. Furis, S. A. Crooker, T. D. Barrick, M. Petruska, V. I. Klimov, Phys. Rev. B **73**, 241313 (2006) (15 citations, impact factor 3.1)
7. *"Electrical Detection of Spin Accumulation at a Ferromagnet-Semiconductor Interface",* X. Lou, C. Adelmann, M.Furis, S. A. Crooker, C. J. Palmstrøm, and P. A. Crowell, Phys. Rev. Lett. **96**, 176603 (2006) (30 citations, impact factor 7)
8. *"Excitons in Carbon Nanotubes with Broken Time-Reversal Symmetry",* S. Zaric, G. N. Ostojic, J. Shaver, J. Kono, O. Portugall, P. H. Frings, G. L. J. A. Rikken, M. Furis, S.A. Crooker, X. Wei, V. C. Moore, R. H. Hauge, and R.E. Smalley, Phys. Rev. Lett. **96**, 016406 (2006). (39 citations, impact factor 7)
9. *"Imaging Spin Injection and Accumulation in Lateral Ferromagnet/Semiconductor Devices",* S. A. Crooker, M. Furis, X. Lou, C. Adelmann, D. L. Smith, C. J. Palmstrøm, and P. A. Crowell, Science **309**, pp.2191-2195 (2005). (95 citations, impact factor 30)
10. *"Magneto-Optical Spectroscopy of Carbon Nanotubes",* S. Zaric, G. N. Ostojic, J. Shaver, J. Kono, X. Wei, M. Furis, S. A. Crooker, O. Portugall, P. H. Frings, G. L. J. A. Rikken, V. C. Moore, R. H. Hauge, and R. E. Smalley, Physica E **29**, pp. 469-474 (2005). (7 citations, impact factor 1)
11. *"Time and Polarization-Resolved Optical Spectroscopy of Colloidal CdSe Nanocrystal Quantum Dots in High Magnetic Fields",* M. Furis, J. Hollingsworth, V. I. Klimov, and S. A. Crooker, J. Phys. Chem. B **109**, pp.15332-15338 (2005). (9 citations, impact factor 4.1)

12. *"Mono-dispersed InP Quantum Dots Prepared By Precursor Based Colloidal Chemistry in a Non-coordinating Solvent*", D. W. Lucey, D. J. MacRae, M. Furis, Y. Sahoo, A. N. Cartwright, P. N. Prasad , Chem. Mat. **17**, pp. 3754-3762 (2005). (26 citations, impact factor 5.1)
13. *"Growth of InN on Ge Substrates by Molecular Beam Epitaxy*", E. Trybus, G. Namkoong, W. Henderson, W. A. Doolittle, R. Liu, J. Mei, F. Ponce, M.Cheung, F. Chen, M. Furis, and A. Cartwright, J. Cryst. Growth, **279**, pp. 311-315 (2005). (5 citations, impact factor 1.8)
14. *"Spectral and Temporal Evolution of Recombination from Multiple Excitation States in Modulation Doped AlGaN/GaN Multiple Quantum Well Heterostructures",* M. Furis, A. N. Cartwright, E. L. Waldron, and E. F. Schubert, Appl. Phys. Lett. 86, pp.162103 (2005). (1 citation impact factor 4)
15. *"Exciton Spin States in Nanocrystal Quantum Dots Revealed by Spin-Polarized Resonant Photoluminescence and Raman Spectroscopy",* M. Furis, T. Barrick, S. A. Crooker, M. Petruska, V. Klimov, and Al. L. Efros, Intl. J. Mod. Phys B 18, pp. 3769-3774 (2004). (4 citations, impact factor 0.4)
16. "*Room Temperature UV Emission from GaN/AlN Multiple Quantum Wells Heterostructures*", M. Furis, A. N. Cartwright, H. Wu, and W. J. Schaff, Appl. Phys. Lett. **83**, pp.3486-3488 (2003). (13 citations, impact factor 4)
17. "*Many Body Effects and Internal Transitions of Confined Excitons in GaAs and CdTe Quantum Wells*", C. J. Meining, H. A. Nickel, A. B. Dzyubenko, A. Petrou, M. Furis, D. R. Yakovlev, and B. D. McCombe, Solid State Comm. **127,** pp. 821-827 (2003). (1 citation, impact factor 1.5)
18. "*Surfactant-Imposed Interference in the Optical Characterization of GaP Nanocrystals* ", M. Furis, A. N. Cartwright, Y. Sahoo, D. J. MacRae, and P. N. Prasad, J. Phys. Chem B **107**, pp.11622-11625 (2003). (4 citations, impact factor 4.1)
19. "*Optical phonon spectra of GaP nanoparticles*", F. S. Manciu, Y. Sahoo, D. J. MacRae, M. Furis, B. D. McCombe, and P. N. Prasad, Appl. Phys. Lett. **82**, pp. 4059-4061 (2003). (7 citations, impact factor 4)
20. **"***Ultrafast Differential Transmission Spectroscopy of Excitonic Transitions in InGaN/GaN Multiple Quantum Wells*", F. Chen, M. C. Cheung, P. M. Sweeney, W. D. Kirkey, M. Furis, and A. N. Cartwright, J. Appl. Phys. **93**, pp. 4933-3935 (2003). (8 citations, impact factor 2.3)
21. **"***Excitonic field screening and bleaching in InGaN/GaN multiple quantum wells***",** F. Chen, W. D. Kirkey, M. Furis, M. C. Cheung, and A. N. Cartwright, Solid State Comm. **125**, pp.617-622 (2003). (impact factor 1.5)
22. "*Si Doping of High-Al-Mole Fraction* $Al_xGa_{1-x}N$ *Alloys with RF Plasma-Induced Molecular Beam Epitaxy*", J. Hwang, W. J. Schaff, L. F. Eastman, S. T. Bradley, L. J. Brillson, D. C. Look, J. Wu, W. Walukiewicz, M. Furis, and A. N. Cartwright, Appl. Phys. Lett. **81**, pp.5192-5194 (2002). (14 citations, impact factor 4)
23. "*Interaction of an Electron Gas with Photoexcited Electron-Hole Pairs in Modulation-Doped GaAs and CdTe Quantum Wells*", H. A. Nickel, T. Yeo, C. J. Meining, D. R. Yakovlev, M. Furis, A. B. Dzyubenko, B. D. McCombe, and A. Petrou, Physica E **12**, pp.499-502 (2002). (1 citation impact factor 1)
24. "*Quantifying Electrical Spin Injection:Component-Resolved Electroluminescence from Spin- Polarized Light-Emitting Diodes*", B. T. Jonker, A. T. Hanbicki, Y. D. Park, G.

Itskos, M. Furis, G. Kioseoglou, and A. Petrou, Appl. Phys. Lett. **79**, pp.3098-3100 (2001). (48 citations, impact factor 4)

25. "*Electrical Spin Injection Across Air-Exposed Epitaxially Regrown Semiconductor Interfaces*", Y. D. Park, B. T. Jonker, B. R. Bennett, G. Itskos, M. Furis, G. Kioseoglou, and A. Petrou, Appl. Phys. Lett. **77**, pp.3989-3991 (2000). (47 citations, impact factor 4)

Peer-Reviewed Conference Proceedings:

1. *"Spin-Polarized PL and Raman Spectroscopy of Nanocrystal Quantum Dots in High Magnetic Fields",* M. Furis, P. D. Robbins, T. Barrick, M. Petruska, V. I. Klimov, and S. A. Crooker, Proceedings of the 27th International Conference on the Physics of Semiconductors A **772,** pp.709-10 (2005).
2. *"Time-Resolved Photoluminescence of Si-Doped High Al Mole Fraction AlGaN Epilayers Grown by Plasma-Enhanced Molecular Beam Epitaxy"*, M. Furis, A. N. Cartwright, J. Hwang, and W. J. Schaff, MRS Fall Meeting Conference Proceedings **798**, pp. 667-672, Dec 1st-5th Boston, Massachusetts (2003).
3. *"Emission Mechanisms in UV Emitting GaN/AlN Multiple Quantum Well Structures",* M. Furis, A. N. Cartwright, H. Wu, W. J. Schaff, MRS Fall Meeting Conference Proceedings **798**, pp. 35-40, Dec 1st-5th Boston, Massachusetts (2003).
4. *"Spectroscopy Studies of InP Nanocrystals Synthesized Through a Fast Reaction",* M. Furis, D. J. MacRae, D. W. Lucey, Y. Sahoo, A. N. Cartwright, and P. N. Prasad, MRS Fall Meeting Conference Proceedings **789**, pp. 89-94, Dec 1st-5th Boston, Massachusetts (2003).
5. *"Ultrafast Dynamics in Nanostructured Materials",* A. N. Cartwright, W. D. Kirkey, M. Furis, X. G. Li, Y. Q. He, D. J. MacRae, Y. Sahoo, M. T. Swihart, and P. N. Prasad, Proceedings of the SPIE-The International Society for Optical Engineering **5222**, pp.134-139, Nanocrystals and Organic and Hybrid Nanomaterials, Aug 4-8 2003, San Diego, California.
6. "*Room-Temperature Time-Resolved Photoluminescence of UV Emission from GaN/AlN Quantum Wells*", M. Furis, F. Chen, A. N. Cartwright, H. Wu, and W. J. Schaff, MRS Fall Meeting Conference Proceedings **743** pp.689-694, Dec 2nd-6th Boston, Massachusetts (2002).
7. "*Time-Resolved Optical Studies of InGaN Layers Grown on LGO* ", M. Cheung, F. Chen, M. Furis, A. N. Cartwright, G. Namkoong, MRS Fall Meeting Conference Proceedings **743** pp.659-664, Dec 2nd-6th Boston, Massachusetts (2002).
8. "*Femtosecond Pump and Probe Spectroscopy of Optical Nonlinearities in an InGaN/GaN Heterostructure*", F. Chen, P. M. Sweeney, W. D. Kirkey, M. Furis, and A. N. Cartwright, 2002 MRS Fall Meeting Conference Proceedings **L11.8**, Dec 2nd-6th Boston, Massachusetts (2002).
9. "*Molecular Beam Epitaxial Growth of AlN/GaN Multiple Quantum Wells*", H. Wu, W. J. Schaff, G. Koley, K. A. Mkhoyan, J. Silcox, M. Furis, A. N. Cartwright, W. Henderson, W. A. Doolittle, and A. V. Osinsky, MRS Fall Meeting Conference Proceedings **743** pp.375-80, Dec 2nd-6th Boston, Massachusetts (2002).
10. "*Internal Transitions of Charged Magneto- Excitons in II-VI Quantum Well Heterostructures*", C. J. Meining, M. Furis, H. A. Nickel, D. R. Yakovlev, W. Ossau, A. Petrou, and B. D. McCombe, The 25th International Conference on the Physics of Semiconductors ICPS25 **H086**, Sept. 17th-22nd, Osaka, Japan (2000).

Oral Presentations:

• American Physical Society Meetings

1. *"Exciton Recombination in Nanometer-Wide GaN/AlN Quantum Wells"*, Z. Pan, M. Furis, W.J. Schaff and A.N. Cartwright, The 2009 APS March Meeting, Pittsburgh Convention Center, Pittsburgh, Pennsylvania (March 2009).
2. *"Bias-Depended Electron Spin Lifetimes in n-type GaAs and the Role of Donor Impact Ionization",* M. Furis, D. L. Smith, S. A. Crooker and J. L. Reno, The 2007 APS March Meeting, Denver Convention Center, Denver, Colorado (March 2007).
3. *"Bright Exciton Fine Structure Observed in Single CdSe Nanocrystal Quantum Dots",* S. A. Crooker, M. Furis, H. Htoon, .M. A. Petruska, V. I. Klimov, The 2006 APS March Meeting ,Baltimore Convention Center, Baltimore, Maryland (March 2006).
4. *" Scanning Kerr Rotation Microscopy of Lateral Spin Transport Devices",* M. Furis, D. L. Smith, S. A. Crooker, X. Lou, C. Adelmann, C. J. Palmstrom, and P. A. Crowell, The 2006 APS March Meeting ,Baltimore Convention Center, Baltimore, Maryland (March 2006)
5. *"Mapping Exciton Spin States in CdSe Nanocrystals with Spin-Polarized, Resonant Photoluminescence Spectroscopy"*, M. Furis, T.D. Barrick, S.A. Crooker, M. Petruska, V. I. Klimov, Al. L. Efros, The 2005 APS March Meeting **W15.00012**, March 21st-25th, Los Angeles Convention Center, Los Angeles, California (2005).
6. *"Interband Magneto-Optics in Carbon Nanotubes in Pulsed High Magnetic Fields",* S. Zaric, G. N. Ostojic, J. Kono, O. Portugall, P. Frings, G. Rikken, S. A. Crooker, M. Furis, X. Wei, H. U. Mueller, M. Von Ortenberg, V. C. Moore, J. Shaver, R. H. Hauge, and R. E. Smalley, The 2005 APS March Meeting **B27.00002**, March 21st-25th, Los Angeles Convention Center, Los Angeles, California (2005).
7. "*Recombination Processes in GaAs/AlGaAs Spin Light Emitting Diodes (SpinLEDs*)", M. Furis, G. Itskos, G. Kioseoglou, A. Petrou, Y. D. Park, B. T. Jonker, A. Hanbicki, B. R. Bennett, X. Wei, The 2001 APS March Meeting **J25.009**, March 12-16th, Washington Convention Center, Seattle, Washington (2001).
8. "Efficiency of Electrical Spin Injection in GaAs-based Spin Light Emitting Diodes (SpinLEDs)", G. Itskos, M. Furis, G. Kioseoglou, A. Petrou, Y. D. Park, B. T. Jonker, R. Stroud, A. Hanbicki, and B. R. Bennett, The 2001 APS March Meeting **J25.007**, March 12-16th, Washington Convention Center, Seattle, Washington (2001).
9. "*Effects of Interfacial Microstructure on Spin Injection Efficiency in ZnMnSe/AlGaAs-GaAs Spin-LEDs*", R. Stroud, Y. D. Park, A. Hanbicki, B. R. Bennett, B. T. Jonker, M. Furis, G. Itskos, G. Kioseoglou, A. Petrou, The 2001 APS March Meeting **J25.008**, March 12-16th, Washington Convention Center, Seattle, Washington (2001).
10. "*Optical, Transport, Structural and Magnetic Properties of Digital Alloys of GaAs/Mn*", X. Chen, M. Furis, G. Itskos, K. P. Mooney, F. Lehmann, G. Kioseoglou, Y. L. Soo, S. Kim, H. Luo, B. D. McCombe, A. Petrou, Y. H. Kao, Y. Sasaki, X. Liu, and J. K. Furdyna, The 2001 APS March Meeting **L25.008**, March 12-16th, Washington Convention Center, Seattle, Washington (2001).
11. "*Internal Transitions of Charged Magneto-Excitons in II-VI Quantum Well Heterostructures*", C. J. Meining, M. Furis, H. A. Nickel, A. Petrou, B. D. McCombe, D.

R. Yakovlev, and W. Ossau, The 2001 APS March Meeting **G30.005**, March 12-16th, Washington Convention Center, Seattle, Washington (2001).

12. "*Optically Detected Resonance Spectroscopy of Modulation-Doped GaAs/AlGaAs Multiple Quantum Well Structures*", H. A. Nickel, T. M. Yeo, G. Comanescu, H. D. Cheong, M. Furis, B. D. McCombe, and A. Petrou, The 2000 APS March Meeting **V32.008**, March 20-24th, Minneapolis, Minnesota (2000).
13. "*Magneto-Optical Study of Interface Roughness in type-II AlGaAs/AlAs Quantum Well Structures*", M. Furis, H.D. Cheong, G. Kioseoglou, A. Petrou, M. Dutta, J. Pamulapati, Y. J. Wang, and X. Wei, The 2000 APS March Meeting **V32.006**, March 20-24th, Minneapolis, Minnesota (2000).
14. "*Optically Detected Resonance of an n-Type Edge Doped GaAs/AlGaAs Quantum Well*", H. D. Cheong, T. Yeo, M. Furis, G. Itskos, A. Petrou, B. D. McCombe, and W. J. Schaff, The 2000 APS March Meeting **Y29.014**, March 20-24th, Minneapolis, Minnesota (2000).

• Invited Talks

1. *"Magneto-Optical Microscopy of Spin-Polarized Electrons Dynamics in Semiconductor Nanostructures and Spin-Transport Devices"* Physics Department Seminar, Clark University Nov 2008
2. "*Magneto-Optical Kerr Effect (MOKE) Studies of Spin Drift and Diffusion in n:GaAs Epilayers and Spin-Transport Devices",* Physics Department Seminar, University of Massachusetts at Amherst, May 2008
3. "*Magneto-Optical Kerr Effect (MOKE) Spectroscopy of Spin-Polarized Electron Transport in Semiconductors*", Magnetic Excitations in Semiconductors Conference, March 6th-9th 2008, Buffalo, New York, USA.
4. " *Magneto-Optical Kerr Effect (MOKE) Studies of Spin Drift and Diffusion in n:GaAs Epilayers and Spin-Transport Devices*", Physics and Engineering Joint Department Seminar, McGill University October 2007
5. *"Imaging the Injection, Accumulation and Flow of Spin- Polarized Electrons in Lateral Ferromagnet/Semiconductor Structures"*, M. Furis, MORIS2006 Workshop on Thermal and Optical Magnetic Materials and Devices, Jun 6th-8th 2006, Chiba, Japan.
6. *"Probing the Bright Exciton Fine Structure and Anisotropy Exchange in CdSe Colloidal Nanocrystal Quantum Dots"* Physics Department Seminar Texas A&M, April 2006
7. *"Probing the Bright Exciton Fine Structure and Anisotropy Exchange in CdSe Colloidal Nanocrystal Quantum Dots"*- Physics Department Seminar, University of Vermont March 2006
8. *"Probing the Bright Exciton Fine Structure and Anisotropy Exchange in CdSe Colloidal Nanocrystal Quantum Dots"*- Physics Department Seminar, Ohio University, March 2006
9. *Probing the Bright Exciton Fine Structure and Anisotropy Exchange in CdSe Colloidal Nanocrystal Quantum Dots"*- Physics Department Seminar, Rochester Institute of Technology, February 2006
10. *Probing the Bright Exciton Fine Structure and Anisotropy Exchange in CdSe Colloidal Nanocrystal Quantum Dots*- Physics Department Seminar Georgia State University, February 2006

11. *Probing the Bright Exciton Fine Structure and Anisotropy Exchange in CdSe Colloidal Nanocrystal Quantum Dots"*-Physics Department Seminar Boise University, February 2006
12. *"Probing the Bright Exciton Fine Structure and Anisotropy Exchange in CdSe Colloidal Nanocrystal Quantum Dots"* –School of Optical Sciences Seminar, University of Arizona, Decenber 2005.
13. *"Probing the Bright Exciton Fine Structure and Anisotropy Exchange in CdSe Colloidal Nanocrystal Quantum Dots"*- Physics Department Seminar, University of South Carolina, December 2005
14. *"Probing Exciton Spin States in CdSe Colloidal Nanocrystals: Resonant Photoluminescence Spectroscopy Experiments at B < 33 T",* National High Magnetic Field Laboratory seminar, Florida State University. October 2005
15. *"Exciton Spin States in Nanocrystal Quantum Dots Revealed by Spin-Polarized Resonant Photoluminescence and Raman Spectroscopy",* M. Furis, T. Barrick, S. A. Crooker, M. Petruska, V. Klimov, and Al. L. Efros, 16th International Conference on High Magnetic Fields in Semiconductor Physics, SEMIMAG16, Aug 2nd-6th 2004, Tallahassee, Florida.
16. *"Photolumiescence Studies of CdSe Colloidal Nanocrystals in High Magnetic Fields",* M. Furis, S. A. Crooker, M. Petruska, J. Hollingsworth, and V. I. Klimov, Physical Phenomena in High Magnetic Fields V, PPHMF-V, Aug. 4th-9th 2005, Tallahassee, Florida

• Peer-Reviewed Conferences

1. *"Bright Exciton Fine Structure Observed in Single CdSe Nanocrystal Quantum Dots",* M. Furis, S. A. Crooker, H. Htoon, M .A. Petruska, and V. I. Klimov, International Conference on the Physics of Semiconductors (ICPS), July 22nd-27th, Viena, AUSTRIA (2006)
2. *"Probing Exciton Spin States in CdSe Nanocrystals Using Resonant Photoluminescence",* M. Furis, T. Barrick, P. D. Robbins, S. A. Crooker, M.Petruska, J, Hollingsworth, and V. I. Klimov, Excited State Processes in Nano- and Bio-Materials, August 8th-11th, Hotel Santa Fe, Santa Fe, New Mexico, USA (2005)
3. *"Photolumiescence Studies of CdSe Colloidal Nanocrystals in High Magnetic Fields",* M. Furis, S. A. Crooker, M. Petruska, J. Hollingsworth, and V. I. Klimov, Physical Phenomena in High Magnetic Fields V, PPHMF-V, Aug. 4th-9th 2005, Tallahassee, Florida.
4. "*Insights into Electrical Spin Injection from Spin-LED Structures*", B. T. Jonker, Y. D. Park, A. Hanbicki, B. R. Bennett, G. Itskos, M. Furis, G. Kioseoglou, and A. Petrou, The 200th Meeting of the Electrochemical Society and the 52nd Annual Meeting of the International Society of Electrochemistry **no.1251**, Sept. 2nd-7th, San Francisco, California (2001).
5. "*Interaction of an Electron Gas with Photoexcited Electron-Hole Pairs in Modulation-Doped GaAs and CdTe Quantum Wells*", H. A. Nickel, T. Yeo, C. J. Meining, A. B. Dzyubenko, M. Furis, D. R. Yakovlev, B. D. McCombe, and A. Petrou, The 14th International Conference on the Electronic Properties of Two Dimensional Systems **MB.2**, July 30th-Aug. 3rd, Prague, Czech Republic (2001).

6. " *Growth and Characterization of Digital Alloys of GaAs/MnGa and GaInAs/MnGa*", X. Chen, K. P. Mooney, T. Yeo, M. Furis, L. Guo, H. Luo, B. D. McCombe, A. Petrou, S. Lee, Y. Sasaki, X. Liu, and J. K. Furdyna, The International Conference on the Physics and Applications of Spin-Related Phenomena in Semiconductors PASPS2000 **K2**, Sept. 13-15th, Sendai, Japan (2000).
7. "*Transmission Electron Microscopy Studies of ZnMnSe/AlGaAs/GaAs Spin-LEDs*", R. M. Stroud, Y. D. Park, B. T. Jonker, B. R. Bennett, G. Itskos, M. Furis, G. Kioseoglou, and A. Petrou, 2001MRS Spring Meeting **T6.6**, April 16-20th San Francisco, California (2001).
8. "*Efficient Electrical Spin Injection and Realization of Spin-LED*", B. T. Jonker, Y. D. Park, A. Hanbicki, R. M. Stroud, B. R. Bennett, G. Itskos, M. Furis, G. Kioseoglou, and A. Petrou, 2001 MRS Spring Meeting **T6.3**, April 16-20th San Francisco, California (2001).
9. "*Growth and Characterization of Digital Alloys and Heterostructures of GaAs/Mn*", X. Chen, K. P. Mooney, T. Yeo, M. Furis, H. Luo, B. D. McCombe, and A. Petrou, 2000 MRS Fall Meeting **I1.3**, Nov. 27th – Dec. 1st, Boston, Massachusetts (2000).

Poster Presentations:

• Material Research Society Meetings (peer-reviewed)

1. "*Effect of Different II-VI Shells on the Photoluminescence of InP Nanoparticles*", M. Furis, W. D. Kirkey, G. Singh, A. N. Cartwrigh, D. W. Lucey, and P. N. Prasad, MRS Fall Meeting Conference Dec 1st-5th Boston, Massachusetts (2004).
2. *"Time-Resolved Photoluminescence of Si-Doped High Al Mole Fraction AlGaN Epilayers Grown by Plasma-Enhanced Molecular Beam Epitaxy"*, M. Furis, A. N. Cartwright, J. Hwang, and W. J. Schaff, MRS Fall Meeting Conference Dec 1st-5th Boston, Massachusetts (2003).
3. *"Emission Mechanisms in UV Emitting GaN/AlN Multiple Quantum Well Structures",* M. Furis, A. N. Cartwright, H. Wu, W. J. Schaff, MRS Fall Meeting Conference, Dec 1st-5th Boston, Massachusetts (2003).
4. *"Spectroscopy Studies of InP Nanocrystals Synthesized Through a Fast Reaction",* M. Furis, D. J. MacRae, D. W. Lucey, Y. Sahoo, A. N. Cartwright, and P. N. Prasad, MRS Fall Meeting Conference, Dec 1st-5th Boston, Massachusetts (2003).
5. "*Room-Temperature Time-Resolved Photoluminescence of UV Emission from GaN/AlN Quantum Wells*", M. Furis, F. Chen, A. N. Cartwright, H. Wu, and W. J. Schaff, 2002 MRS Fall Meeting Conference Proceedings **L11.14**, Dec 2nd-6th Boston, Massachusetts (2002).
6. "*Time-Resolved Optical Studies of InGaN Layers Grown on LGO* ", M. Cheung, F. Chen, M. Furis, A. N. Cartwright, G. Namkoong, W. A. Doolittle, and A. Brown, 2002 MRS Fall Meeting Conference Proceedings **L11.6**, Dec 2nd-6th Boston, Massachusetts (2002).
7. "*Femtosecond Pump and Probe Spectroscopy of Optical Nonlinearities in an InGaN/GaN Heterostructure*", F. Chen, P. M. Sweeney, W. D. Kirkey, M. Furis, and A. N. Cartwright, 2002 MRS Fall Meeting Conference Proceedings **L11.8**, Dec 2nd-6th Boston, Massachusetts (2002).
8. "*Molecular Beam Epitaxial Growth of AlN/GaN Multiple Quantum Wells*", H. Wu, W. J. Schaff, G. Koley, K. A. Mkhoyan, J. Silcox, M. Furis, A. N. Cartwright, W. Henderson,

W. A. Doolittle, and A. V. Osinsky, 2002 MRS Fall Meeting Conference Proceedings **L6.2**, Dec 2nd-6th, Boston, Massachusetts (2002).

• Other Peer- Reviewed Conferences

1. "*Magneto-Optical Kerr Effect (MOKE) Spectroscopy at the University of Vermont*" Z. Pan, L.Zhou, H.Zhou, R Headrick, H. Zeng and M. Furis, Magnetic Excitations in Semiconductors", March 6th-9th, 2008 Buffalo, New York
2. "Exciton *Dynamics in Nanometer-Wide GaN/AlN Quantum Wells and Si:AlGaN Epilayers",* M Furis, A. N. Cartwright and W. J. Schaff, Multifunctional Nanomaterials and Nanodevices, May18th-19th, 2007 Buffalo, New York
3. "*Imaging Spin Injection and Spin Accumulation in Lateral Ferromagnet/Semiconductor Devices*", S. A. Crooker, M. Furis, X. Lou, C. Adelmann, D. L. Smith, C. J. Palmstrom, P. A. Crowell, Physical Phenomena in High Magnetic Fields V, PPHMF-V, Aug. 4th-9th 2005, Tallahassee, Florida
4. "*Optical and Transport Studies of GaAs Doped with Mn and GaAs/Mn Digital Alloys*", M. Furis, G. Comanescu, M. H. Na, A. Petrou, B. D. McCombe, H. Luo, Y. Sasaki, X. Liu, and J. K. Furdyna, The 1st International Conference and School on Spintronics and Quantum Information Technology SpinTech-I **no. 018,** May 13-18th, Maui, Hawaii (2001).