MICHAEL C. GROSS

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OBJECTIVE

A research position in optical communications.

EDUCATION

Doctor of Philosophy, expected December 2000.
Georgia Institute of Technology, Atlanta, Georgia.
Major (Concentration): Electrical and Computer Engineering (Optics).
Minor: Mathematics.
Grade Point Average: 3.6/4.0.

Master of Science, December 1996.
Georgia Institute of Technology, Atlanta, Georgia.
Major (Concentration): Electrical and Computer Engineering (Optics).
Minor: Mathematics.
Grade Point Average: 3.7/4.0.

Bachelor of Science, May 1995.
Rice University, Houston, Texas.
Major (Concentration): Electrical and Computer Engineering (Opto-Electronics).
Minor: Space Physics and Astronomy.
Grade Point Average: 3.6/4.0.

RESEARCH EXPERIENCE

Graduate Research Assistant, March 1996-Present.
School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, Georgia.
Affiliation: Ultrafast Optical Communications Group.
Advisors: Dr. Carl Verber and Dr. Stephen Ralph
Projects: Gain-switched laser diode with pulse compression, passively mode-locked semiconductor/fiber laser, and optical memory loop.

Contributed to development of a high-rate, optical time-division multiplexing communications system funded by a consortium composed of Georgia Tech, Emory University, BellSouth, Corning, and Nortel:

- Designed and characterized a 5-GHz source of 1-ps pulses. (The subsystem was composed of a gain-switched laser diode with a linear pulse compressor, an adiabatic pulse compressor, and an artificial saturable absorber for pulse truncation. A soliton-effect pulse compressor was also studied.)
- Constructed a model of pulse propagation in optical fiber using the split-step Fourier method.
- Designed and characterized a fiber laser passively mode-locked by a semiconductor saturable absorber.
- Constructed and characterized an optical memory loop for short-term, all-optical data storage.

Graduate Research Assistant, June 1995- March 1996.
Georgia Tech Research Institute, Georgia Institute of Technology, Atlanta, Georgia.
Affiliation: Phosphor Technology Center of Excellence.
Advisors: Dr. Christopher Summers and Dr. Brent Wagner.
Project: Characterization of electroluminescent phosphors used for information display.

TEACHING EXPERIENCE

Graduate Teaching Assistant, October 1996-March 1997.
School of Electrical and Computer Engineering, Georgia Institute of Technology, Atlanta, Georgia.
Assignment: Assisted in teaching two quarters of undergraduate fiber optics laboratorys.

SPECIAL SKILLS

Proficient in the use of many optical and electronic devices and techniques: continuous-wave, gain-switched, and mode-locked lasers, optical and radio-frequency amplifiers, attenuators, tunable filters, isolators, circulators, variable delay lines, fusion splicers, electro-optic modulators and switches, photodetectors, autocorrelators, optical and radio-frequency spectrum analyzers, sampling and analog oscilloscopes, bit-error-rate testers, and data generators and others.

Proficient in the use of many pieces of software: LabVIEW, MATLAB, and others.

PUBLICATIONS AND PRESENTAIONS

T. G. Ulmer, M. C. Gross, W. S. Astar, P. W. Juodawlkis, B. R. Washburn, A. J. SpringThorpe, R. P. Kenan, C. M. Verber, and S. E. Ralph, "Ultrafast optical devices for high-speed optical data links," *Proc. SPIE*, vol. 3803, pp. 51-59, 1999.

T. G. Ulmer, M. C. Gross, K. M. Patel, B. R. Washburn, W. S. Astar, S. E. Ralph, R. P. Kenan, and C. M. Verber, “Optical time-division demultiplexing with resonant-cavity-enhanced surface-emitted second-harmonic generation,” presented at Opt. Soc. Amer. Annual Meeting, WLL141, Sep. 1999.

M. C. Gross, P. W. Juodawlkis, J. S. Rodgers, S. E. Ralph, R. P. Kenan, C. M. Verber, and D. T. McInturff, “Passive mode-locking of a fiber laser by an ultrafast low-temperature-grown InGaAs/InAlAs multiple-quantum-well saturable absorber,” presented at Opt. Soc. Amer. Annual Meeting, WA4, Oct. 1998.

S. S. Prabhu, Y.Chen, S. E. Ralph, P. W. Juodawlkis, M. C. Gross, J. S. Rodgers, C. M. Verber, M. R. Melloch, and D. T. McInturff, “Ultrafast carrier dynamics and optical nonlinearities of low-temperature-grown multiple quantum wells,” *Proc. SPIE*, vol. 3277, pp. 244-254. 1998.

HONORS

Shakleford Research Fellowship, Eta Kappa Nu Membership, National Merit Scholarship, Metz Scholarship, Allen Scholarship, and President's Honor Roll Membership.

PROFESSIONAL ASSOCIATIONS

Photonics Journal Discussion Group (Founding Member), Institute of Electrical and Electronics Engineers (Lasers and Electro-Optics Society), and Optical Society of America.

INTERESTS

Cycling (Georgia Tech Cycling Team: Vice President, 1999-2000; Secretary, 1998-99).
Rugby (Rice Rugby Football Club: Second-Side Captain, 1994-95.)
Weight Training.