

## Published Work

**Journal Publications**

1. F. Hoos, T.P. Meyrath, S. Li, B. Braun, and H. Giessen, "Femtosecond 4.9 W Yb:KGW slab laser oscillator pumped by a single broad-area diode for supercontinuum generation," submitted (2008).
2. D.M.B. Kunert, T.P. Meyrath, and H. Giessen, "Fabrication of a fiber-based microcavity with spherical concave fiber tips," submitted (2008).
3. T.P. Meyrath, T. Zentgraf, C. Rockstuhl, H. Giessen, "Electromagnetic Induction in Metamaterials" Appl. Phys. B (2008), in press.
4. H. Guo, T.P. Meyrath, T. Zentgraf, N. Liu, L. Fu, H. Schweizer, and H. Giessen, "Optical resonances of bowtie slot antennas and their geometry and material dependence," Opt. Express 16, 7756-7766 (2008).
5. F. Hoos, S. Li, T.P. Meyrath, B. Braun, and H. Giessen, "Thermal lensing in an end-pumped Yb:KGW slab with high power single emitter diodes," Opt. Express 16, 6041 (2008).
6. C. Rockstuhl, T. Zentgraf, T.P. Meyrath, H. Giessen, and F. Lederer, "Resonances in complementary metamaterials and nanoapertures," Opt. Express 16, 2080 (2008).
7. C. Rockstuhl, T. Pertsch, F. Lederer, T. Zentgraf, T.P. Meyrath, and H. Giessen, "Transition from thin film to bulk properties of metamaterials," Phys. Rev. B 77, 035126 (2008).
8. H. Guo, N. Liu, L. Fu, T.P. Meyrath, T. Zentgraf, H. Schweizer, and H. Giessen, "Resonance hybridization in double split-ring resonator metamaterials," Optics Express, 15, 12095-12101 (2007).
9. T. Zentgraf, T.P. Meyrath, A. Seidel, S. Kaiser, H. Giessen, C. Rockstuhl and F. Lederer, "Babinet's principle for optical frequency metamaterials," Phys. Rev. B 76 033407 (2007).
10. T.P. Meyrath, T. Zentgraf, and H. Giessen, "Lorentz Model for Metamaterials: Optical Frequency Resonance Circuits," Phys. Rev. B 75, 205102 (2007).
11. C-S. Chuu, F. Schreck, T.P. Meyrath, J.L. Hanssen, G.N. Price, M.G. Raizen, "Direct Observation of Sub-Poissonian Number Statistics in a Degenerate Bose Gas," Phys. Rev. Lett., 95, 260403, December 2005.
12. T.P. Meyrath, F. Schreck, J.L. Hanssen, C-S. Chuu, and M.G. Raizen, "Bose-Einstein Condensate in a Box," Phys. Rev. A, 71, 041604(R), April 2005.
13. T.P. Meyrath, F. Schreck, J.L. Hanssen, C-S. Chuu, and M.G. Raizen, "A High Frequency Optical Trap for Atoms Using Hermite-Gaussian Beams," Optics Express, 13, 2843-2851, April 2005.
14. J.L. Hanssen, V. Milner, T.P. Meyrath, M.G. Raizen, "Real-time Control of Atomic Motion Using Feedback," *Coherence and Quantum Optics VIII*, pp. 233-240, 2003.
15. T.P. Meyrath, D.F.V. James, "Theoretical and Numerical Studies of the Positions of Cold Trapped Ions," Physics Letters A 240 pp. 37-42, 1998.

## Theses

1. T.P. Meyrath, "Experiments with Bose-Einstein Condensation in an Optical Box," Doctoral Dissertation, May 2005. [george.ph.utexas.edu/~quantopt/thesis/todd\\_diss.pdf](http://george.ph.utexas.edu/~quantopt/thesis/todd_diss.pdf)
2. T.P. Meyrath, "Two-Dimensional Magneto-Optical Trap as a Low Velocity Source of Atomic Sodium," Master's Thesis, 2000.

## Books

1. Georg A. Klein, "Industrial Color Physics," 2nd revised Ed., translated by T.P. Meyrath (German to English), Springer, New York, 2009 (in preparation).

## Electronics Designs (These few designs have been put into the Public Domain for academic use)

1. T.P. Meyrath, "Multipurpose Analog PID Controller," Informal publication [george.ph.utexas.edu/~meyrath/informal](http://george.ph.utexas.edu/~meyrath/informal), May 2005.
2. T.P. Meyrath, F. Schreck, "A Laboratory Control System for Cold Atom Experiments: Hardware and Software," Informal publication [george.ph.utexas.edu/~control](http://george.ph.utexas.edu/~control), March 2004. Includes an analog and digital output system as well as a direct digital synthesis radio frequency source. Our system has been adopted by a number of other research groups worldwide.
3. T.P. Meyrath, "An Analog Current Controller Design for Laser Diodes," Informal publication [george.ph.utexas.edu/~meyrath/informal](http://george.ph.utexas.edu/~meyrath/informal), November 2003.
4. T.P. Meyrath, "Inexpensive Mechanical Shutter and Driver for Optics Experiments," Informal publication [george.ph.utexas.edu/~meyrath/informal](http://george.ph.utexas.edu/~meyrath/informal), May 2003.
5. T.P. Meyrath, "Precision Analog Optocoupler," Informal publication [george.ph.utexas.edu/~meyrath/informal](http://george.ph.utexas.edu/~meyrath/informal), July 2002.