

Dmitry S. Pestov

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CAREER OBJECTIVE

A postdoc position or equivalent (R&D) in experimental optics or related interdisciplinary fields.

SUMMARY OF QUALIFICATIONS

Three years of experimental research in a femtosecond lab with a variety of instrumentation.

Keywords: coherent anti-Stokes/Stokes Raman scattering (CARS/CSRS), femtosecond CARS, hybrid CARS, ultrashort laser pulses, pulse shaping, detection, time-resolved pump-probe measurements.

EDUCATION

Ph.D. in Physics, Texas A&M University, attending; GPA - 4.00/4

M.S. in Physics (with honors), Nizhniy Novgorod State University, Russia, June 2001

B.S. in Physics (with honors), Nizhniy Novgorod State University, Russia, June 1999

WORK EXPERIENCE

Research Assistant, Physics Dept., Texas A&M University, College Station, TX (Fall 2004 – Present)

Advisor – Dr. Alexei V. Sokolov (e-mail: sokol@physics.tamu.edu)

- Set up and carried out a series of femtosecond CARS experiments on liquids (such as methanol, ethanol, pyridine, benzene, NaDPA solution) and solids (NaDPA powder).
- For strongly scattering media (NaDPA powder), demonstrated selective excitation of molecular vibrations by shaping of the broadband pump-Stokes pulses.
- Co-developed and implemented a hybrid technique for coherent Raman spectroscopy (hybrid CARS/CSRS); performed proof-of-principle experiments on pyridine and NaDPA powder.
- Applied the developed technique for real-time spore detection (on *B. subtilis* spores). Optimized the initial hybrid-CARS setup and improved its detection capabilities by two-to-three orders of magnitude.
- Assembled all-collinear hybrid CARS setup and observed CARS on ambient air and natural gas.
- Set up and carried out femtosecond pump-probe measurements on Cs₂ vapor.

Teaching Assistant and Lab Instructor for PHYS 202 College Physics II (Spring 2004) and PHYS 218 Mechanics (Fall 2003), Physics Dept., Texas A&M University, College Station, TX

- Taught three recitation and lab sections (~70 students/course); graded quizzes, lab reports, exams.

LAB SKILLS

- Experienced/Familiar with the following instrumentation: regenerative amplifier system (*Legend*, Coherent), OPAs (*OPerA-VIS/UV*, *OPerA-SFG/UV*, Coherent; *OPA-800C*, Spectra Physics), pulshaper (*Silhouette*, Coherent), autocorrelator (*PulseCheck*, APE), gated integrator (Stanford Research), ultrafast streak camera (Hamamatsu), LN and ambient-cooled CCD cameras, photomultiplier tubes, spectrometers, oscilloscopes, photodiodes, power meters.
- Lab management: planning, purchasing, installation, maintenance.

COMPUTER SKILLS

- Operating system – Windows; proficient with Microsoft Office (Word, PowerPoint, Excel), OriginPro, Maple; familiar with PSpice, AutoCAD, LabVIEW.

PROFESSIONAL ACHIEVEMENTS/HONORS/AFFILIATIONS

- Six publication in peer-reviewed journals (including *Science Magazine*) and 20 presentations at professional conferences over the period 2005-2007
- Student Presentation Award (Fall 2007 TSAPS meeting)
- 2007 Robert Hyer Award of the Texas Section of the American Physical Society
- FiO Student Presentation Award (OSA's Annual Meeting - Frontiers in Optics, San Jose, 2007)
- Incubic/Milton Chang Travel Award (for OSA's Annual Meeting – Frontiers in Optics), 2007
- TAMU Student Research Award 2007 (1-st prize), 2006 (1-st prize), 2005 (2-nd prize)
- Affiliated with Optical Society of America (OSA), American Physical Society (APS), Sigma Xi