

Lei Zhang, Ph.D.
Visiting Assistant Professor of Physics
Appointed 2002
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Academic Degrees

Ph.D. University of Texas at Arlington 2000 Applied Physics
Dissertation: Electro-optics properties of crystalline materials.
M.S. Louisiana Tech University 1998 Mathematics
M.S. Florida International university 1995 Physics
B.S. University of Science and Technology of China 1988 Space Physics

Professional Experience

Aug. 2002 – Present Elizabeth City State University
Assistant Professor of Physics
May 2002 – August 2002 Louisiana Tech University
Postdoc. Computational modeling on electro-magnetic effect on Biocells
May. 2001 – May. 2002 Avrio Technologies Inc.
Member of technical Staff. Researched on the properties and applications of E/O materials; Designed, simulated (Zemax) and tested optics-electronic components & laser, prototyped 1x2 & 2x2 nano-second optical switches (polymer & crystal & ceramic based).
Jan. 2001 – May 2001 Intelligent Fiber Optics Systems Inc.
Optical Scientist. Tested, designed and simulated optical components, fiber-based subsystems and other optoelectronics devices.
Aug. 2000 – Jan. 2001, Ball semiconductor Inc.
Optics-electronic Engineer, tested and designed maskless photolithograph optical systems.
May 2000 – Aug. 2000 Fresnel Technologies Inc.
Intern. Developed ray tracing program and modeled shrinkage of plastic and polymer materials.
Aug. 1996 – Dec. 2000 University of Texas at Arlington
Half-time Physics labs Instructor.
Nov. 1995 – Aug. 1996 Louisiana Tech University
Half-time Math labs Instructor.
Jan. 1994 – Dec. 1995 Florida International University
Half-time Astronomy labs Instructor.
Aug. 1988 – Dec. 1993 Shanghai salvage training school
Assistant Professor. Teaching Physics-related courses.

Courses taught:

Principle of Physical Science and lab(GE 152 (L)), Optics (Phys 310), Math Methods of Physics (Phys 441 & 442), Modern Physics (Phys 481 & 482), General Physics and lab (phys 181(L) & 182 (L)), Electrical Circuits and lab (Tcel 131 & 132)

Recent faculty Load

Summer Semester 2003

PHYS 181 General Physics I 3 semester hours
MATH-157 Calculus & Analytic Geometry I 3 semester hours
TCEL-132 Electrical Circuits 3 semester hours

Fall Semester 2003

PHYS 181 General Physics I	3 semester hours
GE 152 – 02 Principle of Physical Science	3 semester hours
PHYS 310 –01 Optics	3 semester hours
PHYS 201 –01 Mechanics I	3 semester hours

Faculty committee service

Curriculum Committee (developing biophysics courses and help developing biophysics concentration in both Physics and Biology majors) and Faculty Development Committee

Professional Membership

American Physics Society

Publications (most recent)

“Evidence for droplet reorientation and interfacial charges in a polymer-dispersed liquid crystal cell”, S. C. Sharma, L. Zhang, A.J. Tapiawala, and P. C. Jain, Physical Review Letters **87**, 105501, 2001.

“3-D Optical Switch Architectures”, Victor Joseph, Lei Zhang, Jie Zhou,
United States Patent (pending), 2002.

“Electro-Optical properties of nematic liquid crystalline devices”, L. Zhang and S. C. Sharma, Applied Physics letter (submitted).

Research interests

EO properties of crystalline materials and their applications in fiber-optics telecommunication optical components (switches, modulator, laser, sensors, etc) and photonics devices; Study biological cells by the methods of optical stretcher and optical tweezers. Supervising and involving in undergraduate student’s researches. MEAMP faculty member.

Paper(s) Presented

“Electric field dependence of optical transmission in a polymer-dispersed liquid crystal”,L. Zhang, A.J. Tapiawala, S. C. Sharma, and P. C. Jain, Bull. Am. Phys. Soc. **45**, 102 (2000).

Reference

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- Professor, JianZhong Su
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