

Christopher E. Saxer

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SUMMARY

Optical Engineering Expertise – over 10 years experience with optical systems design and testing, photonic components, lens design, nonimaging optics, polarized light, cameras, detectors and opto-mechanical components.

Practical Experience with interferometry, microscopy, optical coherence tomography, fiber optics, optical fabrication, electronics, and machining.

Leadership to coordinate multi-disciplinary teams, to plan and execute product development and one-of-a-kind projects.

PROFESSIONAL EXPERIENCE

Technical Project Manager

Abengoa Solar PV, Lakewood, CO 2007–2008

Project coordinator and technical contributor to R&D project for high-efficiency, concentrating photovoltaic solar modules.

Accomplishments

- ♦ Contributed to design and analysis of non-imaging optics for low- and high-concentration photovoltaic solar modules.
- ♦ Coordinated teams from universities, NREL and an illumination software vendor in the development of novel optical configurations.
- ♦ Managed project documentation and infrastructure.

Senior Optical Engineer

ADE Phase Shift, Tucson, AZ 2000–2007

Product manager for interference microscope product line. Responsible for continued development of product line and implementation of custom projects. Engineering support to manufacturing for optics and camera testing equipment.

Accomplishments

- ♦ Solved technical issues to eliminate fine artifacts in maps of sub-Å optical surfaces which led to the sale of multiple custom microscope workstations.
- ♦ Produced optical and mechanical design of novel, low-coherence interferometer for Angstrom-level roughness measurements of aspheric micro-lithography mirrors. Managed project from concept through testing and delivery.
- ♦ Optimized assembly and test procedures for athermal microscope objectives and SMPM fibers.
- ♦ Designed illumination optics for broadband microscopy tool used for roughness and film thickness measurements on Si-wafers.
- ♦ Performed service and upgrades of custom, infrared LUPI interferometers.

Post-Graduate Position

Beckman Laser Institute and Medical Clinic, Irvine, CA 1998–1999

- ♦ Designed and constructed fiber-based, polarization sensitive optical coherence tomography (OCT) system for research in burn depth assessment.
- ♦ Engineered, modeled and built rapid-scanning optical delay lines for OCT systems.
- ♦ Engineered and built scanning hand pieces for OCT systems.

Consultant**LightWorks Optics, LLC, Garden Grove, CA Winter 1997–98**

- ♦ Developed interferometric instrumentation and control program to align custom zoom lenses for the International Space Station.

Lens Design Teaching Assistant**The Institute of Optics, Rochester, NY Summers 1991 & 92**

- ♦ Code V instruction for the summer school lens design course.

EDUCATION**Ph.D. Optics University of Rochester**

"Interferometric Characterization of the Chromatic Dispersion of Gradient-Index Glasses"

- ♦ Courses emphasized optical design and engineering: geometrical optics, lens design, physical optics, radiometry and detectors, optics fabrication and testing, and entrepreneurship in optics.
- ♦ Research group projects included construction of automated Hartmann test and gradient-index lens design using Code V.

B.S. Physics Harvey Mudd College

Graduated with honors and distinction. Senior research project in Fourier transform spectroscopy. Dean's List all semesters.

SOFTWARE TOOLS

Zemax, Code V, LightTools, MS Office, Igor Pro, MatLab, LabVIEW, Visual BASIC

LANGUAGES

Fluent in French, German and the Swiss dialect of German.

PUBLICATIONS & PRESENTATIONS

- C.E. Saxer and K. Freischlad, "Interference microscope for sub-Angstrom surface roughness measurements," SPIE International Symposium on Optical Metrology, paper 5144-4, June 23-26, 2003.
- C.E. Saxer et al., "High-speed fiber-base polarization-sensitive optical coherence tomography of *in vivo* human skin," Optics Letters, vol. 25, 1355-57 (2000).
- B.H. Park, et al., "Burn depth determination by high-speed fiber-based polarization sensitive optical coherence tomography at 1.3 micrometers," Proceedings of SPIE v. 3915, 243-248 (2000).
- C.E. Saxer et al., "Fiber-based polarization-sensitive optical coherence tomography," Proceedings of SPIE v. 3915, 68-75 (2000).
- C.E. Saxer and D.T. Moore, "Chromatic dispersion of selected gradient-index glasses," GRIN 1994 Technical Digest, paper GWA5, Rochester, NY, June 7-8, 1994.
- C.E. Saxer and D.T. Moore, "Harmonic phase-shifting interferometry," Optical Fabrication and Testing Workshop, OSA 1992 Technical Digest Series Vol. 24, paper WA8, Boston, MA, Nov. 17-19, 1992.
- C.E. Saxer and D.T. Moore, "New interferometer for measuring chromatic dispersion of gradient-index materials," GRIN 1992 Technical Digest, paper T.6.2, Santiago de Compostela, Spain, October 4-6, 1992.