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Scott A. Lerner, Ph.D.

Professional Experience

2019-Present	Principal Engineer/Imaging Optics, Synopsys OSG
2017-2019	Optical Design Consultant/Imaging, Novel Optics Group
2015-2017	Camera Engineer, Snap, Inc.
2013-2015	Senior Optical Designer, Carl Zeiss AG
2011-2012	Principal Optical Engineer, nLight
2004-2011	Senior Optical Engineer, Hewlett-Packard
2000-2004	Optical Engineer, Lawrence Livermore National Laboratory
1997-2000	Research Associate, University of Arizona
1993-1997	Electrical Engineer, Hughes Missile Systems Company

Education

2000	Ph.D. Degree in Optics, University of Arizona
1998	M.S. Degree in Optics, University of Arizona
1993	B.A. Degree in Physics, University of California, Berkeley

Dr. Scott Lerner's experience with optical systems spans from early concept through to mass production. He has a passion for collaborating with clients to help them reach their goals. He especially enjoys finding unique and practical solutions that challenge pre-existing assumptions.

His work spans wavelengths from soft x-rays through long wave infrared, lens focal lengths from millimeters to meters, and applications from space optics to mass-produced novel consumer cameras. His onsite experience with vendors has resulted in optimized designs that enable as-built performance, high yields, and cost-effective approaches.

His professional portfolio includes a variety of successfully implemented and commercialized designs: imaging spectrometers, augmented/ virtual reality optics, mobile cameras, high power lasers, projection lenses, objective lenses, and illumination/non-imaging optical designs.

Patents

US 10,212,356	Parallel high dynamic exposure range sensor
US 10,204,451	Multi-optical surface optical design
US 10,033,151	Laser module with meniscus collimating lens
US 9,455,552	Laser diode apparatus utilizing out of plane combination
US 9,429,742	High power laser imaging systems
US 9,409,255	High power laser imaging systems
US 8,891,579	Laser diode apparatus utilizing reflecting slow axis collimators
US 8,831,396	Homogenizing optical fiber apparatus and systems employing the same
US 8,816,188	Photovoltaic devices with electrically coupled supports
US 8,307,822	High efficiency solar energy devices and methods
US 7,963,658	Light modulator assembly

US 7,695,146 Projection assembly
US 7,621,646 Curved band-pass filter
US 7,545,555 Projection device
US 7,545,446 Offner relay for projection system
US 7,530,696 Projectors and operation thereof
US 7,527,381 Optical system architecture
US 7,497,579 Active color wheel
US 7,497,577 Light modulator assembly
US 7,458,688 Prism
US 7,453,454 Image display system and method
US 7,441,909 Optical assembly for a projection system
US 7,436,571 Micro-displays
US 7,434,940 Light coupling system and method
US 7,396,131 Projection assembly
US 7,387,389 Image display system and method
US 7,380,949 Light modulator device
US 7,359,122 Prism assembly
US 7,318,645 Beam splitter
US 7,312,928 Projection system field lens
US 7,310,186 Uniform multiple light source etendue
US 7,306,343 Image rotator
US 7,300,156 Prism assembly for separating light
US 7,295,293 Apparatus and method for testing a reflector coating
US 7,293,882 Optical relay
US 7,283,289 Projection system modulator reducing distortion and field curvature effects of projection system lens
US 7,281,804 Prism assembly for separating light
US 7,239,386 Compact imaging spectrometer utilizing immersed gratings
US 7,224,533 Optically retro-reflecting sphere
US 7,204,599 Offset projection system
US 7,188,962 Light modulator device
US 7,175,289 Optical relay
US 7,167,316 Projection lens assembly
US 7,167,314 Projector with total cross total internal reflection (TIR) prisms
US 7,136,209 Light modulators
US 7,073,909 Optical systems and methods
US 7,016,038 Compact imaging spectrometer utilizing immersed gratings
US 7,016,037 Imaging spectrometer utilizing immersed gratings with accessible entrance slit
US 7,006,217 Compact catadioptric imaging spectrometer utilizing immersed gratings
US 6,985,226 Compact imaging spectrometer utilizing an immersed grating and anamorphic mirror
US 6,980,295 Compact catadioptric imaging spectrometer utilizing reflective grating
US 6,977,727 Compact imaging spectrometer utilizing immersed gratings
US 6,922,240 Compact refractive imaging spectrometer utilizing immersed gratings

Publications

“Explorations of the Concentrating Photovoltaic Landscape,” SAIC International Non Imaging Optics Workshop, (2009)

“Design of a new optical system for Alcator C-Mod motional Stark effect diagnostic,” (with J Ko, S. Scott, M Bitter), Review of Scientific Instruments, (2009)

“Fabrication and characterization of hollow metal waveguides for optical interconnect applications,” (with R. Bicknell, L. King, C. E. Otis, J. S. Yeo, N. Meyer, P. Kornilovitch, and L. Seals), Appl. Phys. A, (2009)

“Optimization of the optical design of the ITER MSE diagnostic,” (with M. A. Makowski, S. L. Allen, C. T. Holcomb), Review of Scientific Instruments, (2008)

“System Design of the MSE Diagnostic for ITER,” (with M. A. Makowski, S. L. Allen, M. Gu, C. T. Holcomb, et. al.), APS, 49th Annual Meeting of the Division of Plasma Physics (2007)

“Etendue and optical system design,” (with B. Dahlgren), Proc. SPIE 6338, (2006)

“Use of an expert system for optimization of optical systems,” Proc. SPIE 5174, (2003)

“Optical design with parametrically defined aspheric surfaces,” (with J. M. Sasian), Laser Focus World, (May 2001)

“Ray and van Citter-Zernike characterization of spatial coherence,” (with J. M. Sasian), Appl. Opt. 40, 7 (2001)

“Multilayer-coating-induced aberrations in Extreme Ultraviolet Lithography optics,” (with C. Liang, M. R. Descour, J. M. Sasian), Appl. Opt. 40, 1 (2001)

“Surface Figure Metrology for CELT Primary Mirror Segments,” (with G. Sommargren, D. Phillion, L. Seppala), Technical Report (2001)

“Optical design with parametric surfaces,” (with J. M. Sasian), Appl. Opt. 39, 28 (2000)

“The use of implicitly defined optical surfaces for the design of imaging and illumination systems,” (with J. M. Sasian), Opt. Eng. 39, 7 (2000)

“Design approach and comparison of projection cameras for EUV lithography,” (with J. M. Sasian, M. R. Descour), Opt. Eng. 39, 3 (2000)

“Optical design using novel aspheric surfaces,” (with J. M. Sasian), SPIE, Annual Meeting, San Diego, (August 2000)

“The Use of Implicitly Defined Aspheric Null Correctors for the Testing of Conformal Optical Elements,” (with Anurag Gupta, et. al.), OSA, Optical Fabrication and Testing Topical Meeting, (June 2000)

“Novel surface representation for conformal optics,” (with J. M. Sasian, et. al.), EMWS, (April 2000)

“Interferometric metrology of conformal domes,” (with J. M. Sasian, et. al.), Proc. SPIE 3705, (April 1999)

“Certification of a null corrector via a diamond turned asphere: design and implementation,” (with J. M. Sasian, J. H. Burge), Proc. SPIE 3749, (August 1999)

“Design and tolerancing of null correctors for testing an 8.4 m diameter mirror,” (with J. M. Sasian, J. H. Burge), Proc. SPIE 3739 (May 1999)

“Design of EUV projection cameras,” (with J. M. Sasian), OSA Annual Meeting, Baltimore, MD (1998)

“Test modeling of conformal surfaces,” (with J. M. Sasian), OSA Annual Meeting, Baltimore, MD (1998)

Professional Societies

Member Optical Society of America

Member Society of Photo-Optical Instrumentation Engineers

Professional Activities

Co-chair, 2014 International Optical Design Conference

Chair, 2006-2008 Optical Society of America, Optical Instrumentation Division

Chair, 2004-2006 Optical Society of America, Optical Design Technical Group

Reviewer, Optical Engineering