SYNOPSYS®

Synopsys, Inc.
Optical Solutions Group
199 S. Los Robles Avenue, Suite 400
Pasadena, CA 91101

T 626.795.9101
F 626.795.9102
synopsys.com/optical-solutions

Scott W. Sparrold

Professional Experience

2022-Present	Optical Engineer, Synopsys OSG
2017	Adjunct Professor, Rowan University
2007-2022	Principal Optical Engineer Edmund Optics
2005-2007	Senior Optical Engineer, Wavefront Research Inc
2002-2005	Principal Systems Engineer, Raytheon Missile Systems
2000-2002	Senior Optical Engineer, Tera Beam
1992-2000	Senior Systems Engineer, Raytheon / Hughes Missile Systems

Education

1997	M.S. Degree in Optics, University of Arizona
1992	B.S. Optical Engineering, University of Arizona

Scott William Sparrold is an experienced optical engineer with extensive experience in lens design, analysis, and tolerancing in visible through long-wavelength IR in the military, commercial, and optical research applications. Background spans the full engineering life cycle from research into freeform optics, diffractives, and compact imaging spectrometers (hyperspectral) to manufacturing engineering for optical production systems with drop-together processes. Currently pursuing prototype active alignment and active centering design for apochromatic microscope objectives with tooling and processes suitable for production.

Patents

U.S. 7,498,558	Scintillation Hardened Semi Active Laser Sensor
U.S. 7,145,734	Windowed Optical System Having a Tilted Optical Element to Correct Aberrations
U.S. 6,912,360.	Free space point-to-multipoint optical communication system and apparatus
U.S. 6,678,079	Transceiver for a wireless optical telecommunication system
U.S. 6,867,889	Transceiver for a wireless optical telecommunication system
U.S. 6,552,318	Sensor system with rigid-body error correcting element
U.S. 6,344,937	Beam steering optical arrangement using Risley prisms with surface contours for aberration correction
U.S. 6,343,767	Missile seeker having a beam steering optical arrangement using Risley prisms
U.S. 6,313,951	Optical system with Zernike-shaped corrector
U.S. 6,310,730	Optical system with asymmetric optical corrector
U.S. 6,270,697	Method of fabricating a blur film assembly
U.S. 6,201,230	Sensor system with dynamic optical corrector
U.S. 6,180,938	Optical system and method for providing corrected optical images
U.S. 6,028,712	Optical system with a window having a conicoidal inner surface and testing of the optical system
U.S. 5,867,307	Blur film assembly for infrared optical applications

Publications

S. Sparrold “Thick Lens Chromatic Effective Focal Length Variation Versus Bending”, in Optical Design and Fabrication 2017 (Freeform, IODC, OFT), OSA Technical Digest (online) (Optical Society of America, 2017), paper IM3A.4.

J. Morris, S. Vandendriessche, S. Sparrold “Acrhotech: achromat cost versus performance for conventional, diffractive and GRIN components” Proc SPIE 9947 Current Developments in Lens Design and Optical Engineering XVII, Sept 2016.

R. H. Shepard, S. Sparrold “An efficient Method of Reducing Glass Dispersion Tolerance Sensitivity”, International Optical Design Conference 2014.

E. Herman, A. Czajkowski, D. Stroschine, S. Sparrold “System design process for refractive simultaneous short and long wave infrared imaging” , Applied Optics Vol. 52, Issue 12, pp. 2761-2772.

Oka, K., S. Sparrold “Asphere Design for Dummies”, SPIE, Novel Optical System Design and Optimization XV, 2012.

Schwertz, K., Dillon, D., S. Sparrold “Graphically selecting optical components and housing material for color correction and passive athermalization”, SPIE, Current Developments in Lens Design and Optical Engineering XIII, 2012.

K. Schwertz, A Bublitz, S. Sparrold “Advantages of using engineered chalcogenide glass for color corrected, passively athermalized LWIR imaging systems”, SPIE, Infrared Technology and Applications XXXVIII, 2012.

S. Sparrold, Foreman, Geoffrey “Hybrid Optical Components Deliver Benefits for System Design”, Laser Focus World, December 2011. http://www.laserfocusworld.com/articles/print/volume-47/issue-12/features/optics-hybrid-optical-components-deliver-benefits-for-system-design.html

S. Sparrold, Lansing, A. “Spherical Aberration Compensation plates”, Photonik International 2011. English reprint of previous German publication below.

S. Sparrold, Herman, E., Czajkowski, A., O’Shea, K., “Refractive lens design for simultaneous SWIR and LWIR imaging”, SPIE, Infrared Technology and Applications XXXVII, 2011.

S. Sparrold, Lansing, A. ‘Kompensation Spharischer Aberration mit Standardkomponenten”’, February 2011.

S. Sparrold ‘Aspheres in a Double Gauss: Rehashing an Old Study’, International Optical Design Conference, June 2010.

S. Sparrold ‘Using Aspheres to Increase Optical System Performance’, NASA Tech Briefs, April 2010, Vol. 34, No. 4, pg 47. http://www.ptbmagazine.com/features/2010/feat1_0410.html

Shepard, R. A, S. Sparrold ‘Material Selection for Color Correction in the Short-Wave Infrared’, Current Developments in Lens Design and Optical Engineering IX SPIE Vol 7060, 2008.

Manhart, P. K, S. Sparrold ‘Leveraging off genetic algorithms for optimizing AGRIN lenses’, SPIE 4092, Optical Science and Technology, August 2000.

S. Sparrold, Mills, J.P., Knapp, D.J., Ellis, K.S., Mitchell, T.A., Manhart, P.K., ‘Conformal Dome Correction with Counter Rotating Phase Plates’., Optical Engineering, July 2000.

S. Sparrold, Knapp, D.J., Manhart P.K., Elsberry, K.W., ‘Capabilities of an Arch Element for Correcting Conformal Optical Domes’, SPIE 3779, Current Developments in Optical Design and Optical Engineering VIII, July 1999.

S. Sparrold ‘Arch Corrector for Conformal Optical Systems’, SPIE 3705, Window and Dome Technologies and Materials VI, April 1999.

Mills, J.P., S. Sparrold, Mitchell, T.A., Ellis, K.S., Knapp, D.J., Manhart, P.K., ‘Conformal Dome Aberrations Correction with Counter Rotating Phase Plates’, SPIE 3705, Window and Dome Technologies and Materials VI, April 1999.

S. Sparrold ‘Correcting Dynamic Third Order Astigmatism in Conformal Missile Domes with Gimballed Seekers’, Master’s Thesis, University of Arizona, Optical Sciences, 1997.

Awards

Edmund Optics MVP 2020 (elected by peers)
Edmund Optics Mentoring Award 2010
Raytheon Technical Mentoring Program October 2004
Raytheon 6 Sigma qualified specialist November 2002
Advance Technology Team Award November 1999
Hughes Electro Optic Sensor Technology Network (EOSTN) Team Award, August 1997
Hughes Aircraft Company Masters Fellowship, August 1995

Professional Societies

Member, SPIE The International Society for Optical Engineering

Professional Activities

Theta Tau Professional Engineering Fraternity.