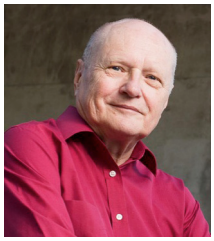
JAMES C. WYANT

Professor Emeritus, College of Optical Sciences
Founding Dean, College of Optical Sciences
University of Arizona
http://wp.optics.arizona.edu/jcwyant/
jcwyant@optics.arizona.edu



Educational Background

University of Rochester	PhD	Optics	1968
	MS	Optics	1967
Case Institute of Technology	BS	Physics	1965

Employment History

Academia

University of Arizona		
College of Optical Sciences	Founding Dean	2005–2012
Optical Sciences Center	Director	1999–2005
	Professor	1979–2013
	Associate Professor	1976–1979
	Assistant Professor	1974–1976
Electrical and Computer Engineering	Professor	1985–2013
Changchun University	Visiting Professor	2005–2010
University of Rochester	Visiting Professor	1983
Lowell Technological Institute	Instructor, Math, and Physics	1970–1974
	Lecturer, Physics	1969–1972

Industry

WYKO Corporation	President	1984–1997
CSIRO	Visiting Scientist	1983
Itek Corporation	Manager, Optical Engineering Section	1974
	Optical Engineer	1968–1974
Libbey-Owens-Ford Glass Co.	Research Assistant	1964–1965 Summers

Company Boards

4D Technology Corporation	Board Chairman	2002–2018
ILX Lightwave	Board Member	1988–2012
Optics 1	Board Member	1999–2008
DMetrix	Board Member	2001–2011

Veeco Instruments	Board Member	1997–1999
WYKO Corporation	Board Chairman	1984–1997
Wyant Measurement Systems	Board Chairman	1981–1984

University Board of Trustees

University of Rochester	Life Trustee	2017–date
	Board of Trustees	2012–2017
Case Western Reserve University	Emeriti Trustee	2021–date
	Board Chair	2016–2020
	Board of Trustees	2010–2021

Awards

Technical Awards

Election to National Academy of Engineering, 2007.

Election to National Academy of Inventors, 2015.

Optica Frederic Ives Medal/Jarus W. Quinn Prize (Highest award given by Optica - formerly OSA), “For pioneering contributions in advancing the science and technology of quantitative interferometric metrology, his leadership as an educator and entrepreneur, and his visionary service to the global optics and photonics community,” 2022.

SPIE Gold Medal (Highest award given by SPIE), "For significant contributions to the field of interferometry and optical testing," 2003.

SPIE Visionary Award, “For his role as founding dean of the College of Optical Sciences at the University of Arizona, for pioneering photonics at WYKO Corporation and 4D Technology, for deeply generous philanthropy to enable education in optics, and for thoughtful investment in the future of photonics,” 2019.

SPIE Charles S. Vikram Award, “For pioneering contributions to the field of quantitative interferometric optical testing and for nurturing the invention of phase-measurement interferometer systems,” 2010.

SPIE Technology Achievement Award (WYKO), "For development of software and instrumentation for optical quality metrology," 1988.

OSA Joseph Fraunhofer Award, "For pioneering work in the development of optical testing technology," 1992.

R&D 100 Award,
"For Model RST Rough Surface Tester," 1993. (WYKO)
“Phase-Cam 1000 – Fizeau Interferometer,” 2004 (4D Technology)
“Phase-Cam 4010-MW – Dynamic multiple wavelength interferometer,” 2005 (4D Technology)
“DX-40 Array Microscope,” 2005 (DMetrix)
“SpeckleCam,” 2006 (4D Technology)

Photonics Circle of Excellence Award,
"Development of multiple-wavelength TOPO," 1988. (WYKO)
"TOPO A/F noncontact surface profiler with autofocus," 1990. (WYKO)
"MicroProbe 3D scanning probe microscope," 1992. (WYKO)
"WYKO rough surface tester," 1993. (WYKO)
“Phase-Cam 4000,” 2004. (4D Technology)

NASA Goddard Achievement in Excellence Award for its contribution to the James Webb Space Telescope (JWST) project, 2006.

Member of the International Order of the Knights of Holography, 2013.

Wolfram (*Mathematica*) Innovator Award, 2021.

Entrepreneurial Awards

University of Arizona College of Business and Public Administration Entrepreneurial Fellow, 1989.

Arizona "Innovator of the Year" Product Award, 1993.

Tom Brown Excellence in Entrepreneurship Award, 2005.

University of Arizona Technology Innovation Award, 2005.

Arizona Technology Council William F. McWhortor Award, 2011.

The David N. Allen Award for Leadership and Vision, 2019.

AccountabilIT Lifetime Achievement Award – Governor’s Celebration of Innovation Awards, 2019

Other Awards

SPIE Governors' Award, 1979.

University of Rochester College of Engineering Distinguished Alumnus Award, 1994.

Doctorado Honoris Causa, Instituto Nacional de Astrofisica, Optica y Electronica, Puebla, Mexico, 2008.

Case Alumni Association Gold Medal Award, 2014.

Case Western Reserve University Athletic Hall of Fame, 2016.

The University of Arizona renamed the College of Optical Sciences the James C. Wyant College of Optical Sciences, 2019.

Case Western Reserve University’s highest form of recognition, The University Medal, for exceptional leadership, dedication, and service to the university, to higher education and to society, 2020.

Honorary Doctor of Science Degree, University of Rochester, 2021.

SPIE Special Tribute to James C. Wyant - The Extraordinaire in Optical Metrology and Optical Education, 2021.

Companies Founded or Co-Founded

Wyant Measurement Systems - 1981
WYKO Corporation - 1982
4D Technology - 2002

Professional Society Affiliations

OSA – The Optical Society	
Presidential Advisory Committee	2012 - date
Immediate Past-President	2011
President	2010
President-Elect	2009
Vice President	2008
Executive Committee	1980–1981, 2008–2011
Board of Directors	1979–1981, 2008–2011
Fellow	1977–date
Member	1966–date
SPIE – International Society for Optics and Photonics	
President's Advisory Committee	1987–date
Immediate Past-President	1987
President	1986
President-Elect	1985
Board of Directors	1978–1984
Fellow	1980–date
Member	1972–date
Optical Society of Japan	
International Advisory Member	1999–2015
Optical Society of India	
Lifetime Fellow	2005–date
Distinguished Fellow	2021–date
Optical Society of Korea	
Honorary Member	2010–date

Journal Editor

Optical Engineering, Sept.-Oct. 1975, "Applications of Holography."
Optical Engineering, July-Aug. 1977, "Metal Optics."
Optical Engineering, Sept.-Oct. 1980, "Holography,"
Associate Editor, Optical Engineering, 1976–1984
Advisory Editor, Optics Letters–1975
Associate Editor, JOSA, 1978–1983
Topical Editor, JOSA, 1983–1986
Associate Editor, Applied Optics, 1983, 1988–1992
Topical Editor, Applied Optics, 1989–1992
Topical Editor, Optics Letters, 1990–1992
Optical Technology Division Editor, Applied Optics, 1992–1997
Associate Editor, Optics Express, 1998–2004
Editor-in-Chief, Applied Optics, 2006–2008

Book Series Editor

Applied Optics and Optical Engineering, **Vol. VII–Vol XI**, Academic Press, (1979–1992) (Co-edited with R. R. Shannon)

Book Author

Field Guide to Interferometric Optical Testing, SPIE, 2006 (Co-authored with Eric Goodwin)

Book Chapter Author

1. "Holographic and moiré techniques," Chap.12 in Optical Shop Testing, D. Malacara, Ed., Wiley-Interscience, New York, 1978.

2. "Adaptive Optics," Chap. 3 in Adaptive Optics and Short Wavelength Sources, S. F. Jacobs, M. Sargent III, and M. O. Scully, Eds., Addison-Wesley, Reading, Massachusetts, 1978.

3. "Diamond turned metal optics," Chap. 6 in Adaptive Optics and Short Wavelength Sources, S. F. Jacobs, M. Sargent III, and M. O. Scully, Eds., Addison-Wesley, Reading, Massachusetts, 1978. (Co-authored with Richard N. Shagam).

4. "Basic wavefront aberration theory for optical metrology," for Applied Optics and Optical Engineering, Vol 11, edited by R. R. Shannon and J. C. Wyant (Academic Press, 1992). (Co-authored with K. Creath).

5. "Holographic and speckle tests," for Optical Shop Testing, 2nd Edition, edited by Daniel Malacara (John Wiley and Sons, 1992). (Co-authored with K. Creath).

6. "Tests using moiré and fringe projection techniques," for Optical Shop Testing, 2nd Edition, edited by Daniel Malacara (John Wiley and Sons, 1992). (Co-authored with K. Creath).

7. "Testing of aspheric wavefronts and surfaces," Chap.12 in Optical Shop Testing, D. Malacara, Ed., Wiley-Interscience, New York, 2007. (Co-authored with D. Malacara, K. Creath, and J. Schmit).

8. "Surface profilers, multiple wavelength, and white light interferometry," Chap.15 in Optical Shop Testing, D. Malacara, Ed., Wiley-Interscience, New York, 2007. (Co-authored with J. Schmit and K. Creath).

9. "Optical metrology of diffuse surfaces," Chap.16 in Optical Shop Testing, D. Malacara, Ed., Wiley-Interscience, New York, 2007. (Co-authored with K. Creath and J. Schmit).

10. “Wacko WYKO,” Chap. 11 in Engineering a High-Tech Business, Jose Miguel Lopez-Higuera and Brian Culshaw, Ed., SPIE Press, Bellingham Washington, 2008.

11. “A wonderful world of holography, interferometry, and optical testing (honorary lecture)” in Fringe 2009, W. Ostenand M. Kujawinska, Ed., Springer, New York, 2009.

12. “Use of Computer Generated Holograms in Optical Testing,” Chapter 14 in OSA Handbook of Optics, Third Edition, Volume II, McGraw-Hill, 2010. (Co-authored with Katherine Creath).

13. "Thin Film Interference," Chapter 23 in College of Optical Sciences, Masud Mansuripur, Ed., 2014.

Wolfram *Mathematica* Demonstrations

Wolfram (*Mathematica*) Innovator Award, 2021

1. James C. Wyant, "Moiré Pattern of Two Fresnel Zone Plates"
   http://demonstrations.wolfram.com/MoirePatternOfTwoFresnelZonePlates/
   Wolfram Demonstrations Project
   Published: June 2007

2. James C. Wyant, "Moiré Pattern of Two Equally Spaced Circular Ring Patterns"
   http://demonstrations.wolfram.com/MoirePatternOfTwoEquallySpacedCircularRingPatterns/
   Wolfram Demonstrations Project
   Published: August 2007

3. James C. Wyant, "Moiré Pattern of Two Straight Line Patterns"
   http://demonstrations.wolfram.com/MoirePatternOfTwoStraightLinePatterns/
   Wolfram Demonstrations Project
   Published: August 2007

4. James C. Wyant, "Wavefront Maps and Profiles of Seidel Aberrations"
   http://demonstrations.wolfram.com/WavefrontMapsAndProfilesOfSeidelAberrations/
   Wolfram Demonstrations Project
   Published: January 4, 2012

5. James C. Wyant, "Plots of Zernike Polynomials "
   http://demonstrations.wolfram.com/PlotsOfZernikePolynomials/
   Wolfram Demonstrations Project
   Published: January 15, 2013

6. James C. Wyant, "Point Spread and Modulation Transfer Functions of Zernike Wavefronts"
   http://demonstrations.wolfram.com/PointSpreadAndModulationTransferFunctionsOfZernikeWavefronts/
   Wolfram Demonstrations Project
   Published: January 25, 2013

7. James C. Wyant, "Point Spread and Modulation Transfer Functions for Seidel Aberrations"
   http://demonstrations.wolfram.com/PointSpreadAndModulationTransferFunctionsForSeidelAberration/
   Wolfram Demonstrations Project
   Published: February 13, 2013

8. James C. Wyant, "Using web*Mathematica* to Solve Optics Problems"
   https://wp.optics.arizona.edu/jcwyant/mathematica/webmathematica/

Research and Development Accomplishments

1. First to use computer generated holograms (CGHs) to test aspheric surfaces (1969). CGHs are now commonly used to test aspheric optics and most high-quality optical systems now use aspheric optics.

2. Developed special shearing interferometer wavefront sensor for use in the correction of atmospheric turbulence (1970).
   Was a member of a team of 3 at the Itek Corporation who were the first to demonstrate what is now called adaptive optics for the correction of atmospheric turbulence. (The work quickly became classified.)

3. Early development of phase-shifting interferometry (1970)
   Essentially all interferometers made today for the measurement of wavefront or surface shape use phase-shifting interferometry.

4. First user-friendly, graphics intensive, software for analysis of interferograms using a personal computer (1982)
   Many copies of this were sold through Wyant Measurement Systems or through Zygo. The software later became the basis of the WYKO Corporation software.

5. First to develop and sell a computerized optical interferometric profilometer for measurement of smooth surfaces in the Angstrom range (1982).
   Thousands of these profilometers have been sold by WYKO and other companies for many different markets.

6. Development of computerized interferometer for measuring optical wavefronts (1983).
   This added user-friendly, graphics intensive, software to classical interferometers for improved optical testing.

7. Development of two-wavelength interferometric techniques for extending the dynamic range of interferometric measurements (1985).
   This increased the dynamic range of computerized optical interferometric profilometers and increased the number of applications for the profilometer.

8. First to develop a computerized interference microscope to measure magnetic read/write disks and heads (1989).
   For a few years, essentially any company in the world who made magnetic read/write heads for hard disk drives used our WYKO profilometer for measuring every single read/write head they manufactured to make sure it met the specifications. Being able to measure the shape of the heads was essential for producing higher capacity, faster, computer disk drives.

9. First to develop a computerized interferometric profiler using coherence peak sensing techniques to measure much rougher surfaces than could be previously measured (1993).
   Extended the dynamic range of the computerized interferometric profiler and greatly increased the applications for the profiler. Thousands of these profilometers have been sold by many different companies for many different markets.

10. Development of interferometric stitching techniques for giving high spatial resolution surface microstructure measurements over a large field-of-view (1996).
    Further increased the applications for the profiler.

11. First to develop practical interferometric metrology having reduced sensitivity to vibration (2000).
    Our reduced sensitivity techniques appear to be a paradigm shift in how large optics is tested. The techniques were used in the testing of the optics for the James Webb Space Telescope and are now being used in most, if not all, of the giant telescopes currently being fabricated. Besides applications in the optics industry, other applications have been found in the machine tool and semiconductor industries, as well as in biomedical engineering.

Patents

1. U.S. Patent No. 3,829,219 "Shearing interferometer," 1974.

2. U.S. Patent No. 4,025,195 "Image subtraction, addition system," co-inventor: J. F. Ebersole, 1977.

3. U.S. Patent No. 4,639,139 "Optical Profiler using improved phase-shifting interferometry," co-inventor: K. Prettyjohns, 1987.

4. U.S. Patent No. 4,832,489 "Two-wavelength phase-shifting interferometer and method," co-inventor: K. Creath, 1989.

5. U.S. Patent No. 5,398,112 "Method for testing an optical window with a small wedge angle," co-inventor: Chiayu Ai, 1995.

6. U.S. Patent No. 5,502,566 "Method and apparatus for absolute optical measurement of entire surfaces of flats," co-inventors: Chiayu Ai, Lian-Zehn Shao, Robert E. Parks, 1996

7. U.S. Patent No. 7,057,737 "Common optical-path testing of high numerical aperture wavefronts," co-inventors: James Millerd, Neal Brock, John Hayes, 2006

8. U.S. Patent No. 7,057,738 "Simultaneous phase-shifting Fizeau interferometer," co-inventor: James Millerd, 2006

9. U.S. Patent No. 7,230,717 "Pixelated phase-mask interferometer," co-inventors: Neal Brock, James Millerd and John Hayes, 2007

10. U.S. Patent No. 7,230,718 "Simultaneous phase-shifting Fizeau interferometer," co-inventor: James Millerd, 2007

Partial List of Courses Taught

- University of Arizona, College of Optical Sciences
  Taught graduate courses in diffraction, interferometry, holography, and optical testing for 40 years.

- Optical Testing and Testing Instrumentation
  Taught course in summer school at Institute of Optics, University of Rochester, for 32 years beginning in 1982.

- Interferometric Optical Testing
  Taught every year at Optical Society of America Annual Meeting - 1982 to 1994.

- Modern Optical Testing
  Taught annually at SPIE Annual Meeting - 1985 to present.
  Taught annually at SPIE Photonics West meeting - 1992 to present.
  Taught at SPIE Optifab meeting every other year – 1989 – 2014.
  Taught at many European and Asian SPIE meetings – 1990 – present.
  Taught every year in the UK for students from all around Europe - 1997 to 2009.

- Interference and Interferometry
  Taught at various SPIE meetings a couple of times each year - 1995 to 2000.

Student Advisor

Adviser of 34 graduated Ph.D. students

Adviser of 25 graduated MS students

Dissertations of Graduated Ph.D. Students

Year	Name and Title
1978	William H. Swantner Optical Design of Coherent Optical Processor
1978	Chungte W. "Bill" Chen Design and fabrication of holographic elements
1979	Nobuhiko "Pooshan" Tamura Feedback systems for image acquisition and processing
1980	Osuk Kwon Infrared interferometric systems
1980	John S. Loomis Applications of computer-generated holograms in optical testing
1980	Lawrence F. Rubin Scatterplate interferometry
1980	Richard N. Shagam Heterodyne interferometric and moiré test methods for surface measurements
1982	Elliott G. Eichen Speckle measurements with a CCD array: Applications to speckle reduction
1982	Cheol J. Kim Polynomial fit of interferograms
1982	Christ L. Koliopoulos Interferometric optical phase measurement techniques
1982	Ken Womack Traditional and synchronous convolution methods for processing fringe pattern images
1984	John B. Hayes Linear methods of computer controlled optical figuring
1984	Sin-Sang "Phil" Lam Real-time two-wavelength holographic interferometry with a Bi12SiO20 crystal
1985	Yeou-Yen Cheng Multiple-wavelength phase-shifting interferometry

1985 Katherine Creath
Digital speckle-pattern interferometry

1987 Chiayu Ai
Phase measurement accuracy limitation in phase-shifting interferometry

1987 Russell Chipman
Polarization aberrations

1987 Donald K. Cohen
Analysis of methods for detecting focus error in optical data storage systems

1988 Eugene R. Cochran III
Extending the measurement range of an optical surface profiler

1988 Scott L. Devore
Analysis and measurement of optical disk drive functions

1992 Walter G. Hahn
Optical measurement of surface profiles of silicon dioxide films on silicon substrates and carbon coatings on magnetic disks

1994 Joseph G. Ambrose
Deconvolution of lateral shear interferograms

1998 Erik L. Novak
Measurement and analysis optimization of large aperture laser Fizeau interferometer

1999 Conrad Wells
Phase-shifting interferometric imaging ellipsometer

2000 Akiko Harasaki
Improved vertical scanning interferometry

2000 Michael North-Morris
Phase-shifting birefringent scatterplate interferometer

2003 Mark Neal
Polarization phase-shifting point-diffraction interferometer

2003 Jay Van Delden
Principles and measurement of polarized light: A novel interferometric approach

2004 Babak Saif
Simultaneous phase shifted digital speckle pattern interferometry

2005 Matt Novak
Micropolarizer phase-shifting array for use in dynamic interferometry

2006 Bradley Kimbrough
Path Matched Vibration Insensitive Fizeau Interferometer

2009 Peter H. Smith
Water at the Phoenix Landing Site

2012 Joshua Thomas Wiersma
Pixelated Mask Polarization Based Spatial Carrier Interference Microscopy

2013 Goldie Goldstein
Smart Temporal Phase Unwrapping for Biological Objects

Selected Publications

1. James C. Wyant and M. Parker Givens, "Effect of the photographic gamma on the luminance of hologram reconstructions," J. Opt. Soc. Am. **58**(3), 357–361, Mar. 1968.

2. James C. Wyant and M. Parker Givens, "Effects of photographic gamma on hologram reconstructions," J. Opt. Soc. Am. **59**(12), 1650–1658, Dec. 1969.

3. J. C. Wyant and M. P. Givens, "Undesired light in a reconstructed hologram image caused by the nonlinearity of the photographic process," Appl. Opt. **9**(4), 810–814, Apr. 1970.

4. J. C. Wyant and A. J. MacGovern, "Computer generated holograms for testing aspheric optical elements," in Applications of Holography, Laboratoire de Physique Generale et Optique, Universite de Besancon, Besancon, France, 1970.

5. A. J. MacGovern and J. C. Wyant, "Computer generated holograms for testing optical elements," Appl. Opt. **10**(3), 619–624, Mar. 1971.

6. J. C. Wyant, "Testing aspherics using two-wavelength holography," Appl. Opt **10**(9), 2113–2118, Sept. 1971.

7. J. C. Wyant and V. P. Bennett, "Using computer generated holograms to test aspheric wavefronts," Appl. Opt. **11**(12):2833–2839, Dec. 1972.

8. J. C. Wyant, "Double frequency grating lateral shear interferometer," Appl. Opt. **12**(9), 2057–2060, Sept. 1973.

9. J. C. Wyant, "White Light Extended Source Shearing Interferometer," Appl. Opt. **13**(1), 200–202, Jan. 1974.

10. J. C. Wyant, P. K. O'Neill, and A. J. MacGovern, "Interferometric method of measuring plotter distortion," Appl. Opt. **11**(7), 1549–1551, July 1974.

11. P. Hariharan, W. H. Steel and J. C. Wyant, "Double grating interferometer with variable lateral shear," Opt. Comm. **11**(3), 317–320, July 1974.

12. John W. Hardy, Julius Feinleib, and James C. Wyant, "Real time phase correction of optical imaging systems," OSA Topical Meeting on Opt. Propagation through Turbulence, Boulder, Colorado, July 1974.

13. J. C. Wyant, "Holographic testing of aspheric optical elements," pp. 643-664 in Proceedings of the Ninth Congress of the International Commission for Optics, National Academy of Science, Washington, D.C., 1974.

14. J. F. Ebersole and J. C. Wyant, "Collimated light acousto-optic lateral shearing interferometer," Appl. Opt. **13**(5), 1004–1005, May 1974.

15. J. C. Wyant and P. K. O'Neill, "Computer generated hologram: null lens test of aspheric wavefronts," Appl. Opt. **13**(12), 2762–2765, Dec. 1974.

16. M. P. Rimmer and J. C. Wyant, "Evaluation of large aberrations using a lateral-shear interferometer having variable shear," Appl. Opt. **14**(1), 142–150, Jan. 1975.

17. J. C. Wyant, "Rotating diffraction grating laser beam scanner," Appl. Opt. **14**(5): 1057–1058, May 1975.

18. J. C. Wyant, "Optical gauging principles," Proceedings of the SPIE Meeting on Solving Quality Control and Reliability Problems with Optics, May 15–16, 1975.

19. J. C. Wyant, "Imaging in astronomy," Optical Society of America Technical Digest, June 18–21, 1975.

20. J. C. Wyant and F. D. Smith, "Interferometer for measuring power distribution of ophthalmic lenses," Appl. Opt. **14**(7), 1607–1612, July 1975.

21. J. C. Wyant, "OTF measurements with a white light source: an interferometric technique," Appl. Opt. **14**(7), 1613–1615, July 1975.

22. J. C. Wyant, "Holographic applications," Guest Editorial, Opt. Eng. **14**(5), 381–382, Sept.-Oct. 1975.

23. J. C. Wyant, "Imaging in astronomy," Appl. Opt. **14**(10), 2322, Oct. 1975.

24. J. C. Wyant, "Use of an ac heterodyne lateral shear interferometer with real- time wavefront corrections systems," Appl. Opt. **14**(11), 2622–2626, Nov. 1975.

25. Poohsan N. Tamura and James C. Wyant, "On-axis coherent optical feedback system for image processing," Proc. SPIE **74**: 57–61, 1976.

26. J. C. Wyant, book review of Principles of Holography, 2nd Ed. J. Opt. Soc. Am. **66**(4): 396, Apr. 1976.

27. J. F. Ebersole and J. C. Wyant, "Real-time optical subtraction of photographic imagery for difference detection," Appl. Opt. **15**(4):871–876, Apr. 1976.

28. J. C. Wyant, "Sensors for adaptive optics," Laser Focus **12**(9):35–40, Sept. 1976.

29. D. A. Thomas and J. C. Wyant, "High efficiency grating lateral shear interferometer" (short communication), Opt. Eng. **15**(5), 477–478, Sept.-Oct. 1976.

30. J. C. Wyant, "A simple interferometric MTF instrument," Opt. Commun. **19**(1):120–121, Oct. 1976.

31. J. C. Wyant, Ed., Proceedings of the SPIE National Seminars on Imaging Through the Atmosphere, **75** (meeting held March 22–23, 1976, Reston, Va.).

32. P. N. Tamura and J. C. Wyant, "Matrix multiplication using coherent optical techniques," Proc. SPIE **83**, 97–104 (1977).

33. D. A. Thomas and J. C. Wyant, "Determination of the dihedral angle errors of a corner cube from its Twyman-Green interferogram," J. Opt. Soc. Am. **67**(4), 467–472, April 1977.

34. R. Shagam, R. Sladky and J. C. Wyant, "Optical figure inspection of diamond turned metal mirrors," Opt. Eng. **16**(4): 375–380, July–Aug. 1977.

35. J. C. Wyant "Guest editorial: metal optics," Opt. Eng. **19**(4): 319, July–Aug. 1977.

36. J. C. Wyant "Image blur for rainbow holograms," Optics Letters, **1**(4): 130–132, October 1977.

37. J. C. Wyant, "Speckle," pp. 395-397 in McGraw Yearbook of Science and Technology, McGraw Hill, New York, 1977.

38. James C. Wyant, "Fringe localization," Appl. Opt. **19**(12), 1853, 15 June 1978.

39. C. Koliopoulos, O. Kwon, R. Shagam, J. C. Wyant and C. R. Hayslett, "Infrared point-diffraction interferometer," Opt. Lett. **3**(3),118–120, Sept. 1978.

40. R. N. Shagam and J. C. Wyant, "Optical frequency shifter for heterodyne interferometers using multiple rotating polarization retarders," Appl. Opt. **17**(19): 3034–3035, Oct. 1978.

41. James C. Wyant and Richard N. Shagam, "Use of electronic phase measurement techniques in optical testing," Proceedings of ICO-II Conference, Madrid, Spain, pp. 659–662, 1978.

42. James C. Wyant, "Interferometric optical testing: past, present and future," Proc. SPIE **192**, 2–5,1979.

43. Osuk Kwon, James C. Wyant and C. R. Hayslett, "Long-wavelength interferometer in the optical shop," Proc. SPIE **192**, 88–92,1979.

44. K. H. Womack, J. A. Jonas, C. Koliopoulos, K. L. Underwood, James C. Wyant, John S. Loomis, and C. R. Hayslett, "A microprocessor-based instrument for analyzing video interferograms," Proc. SPIE **192**, 134–139,1979.

45. Kang M. Leung, T. C. Lee, E. Bernal and James C. Wyant, "Two-wavelength contouring with the automated thermoplastic holographic camera," Proc. SPIE **192**, 184–189,1979.

46. James C. Wyant, "Optical engineering," Encyclopedia Britannica 1979 Yearbook of Science and the Future, pp. 364–367, 1979.

47. Osuk Kwon, J. C. Wyant, and C. R. Hayslett, "10.6 micrometer interferometric testing of infrared optics and aspherics," Proc. SPIE **190**, 99–102, 1979.

48. James C. Wyant, "Recent investigations of interferometry and applications to optical testing," Proc. SPIE **190**, 507–511, 1979.

49. J. C. Wyant, review of Handbook of Optics, Rev. Sci. Instr. **50**(20), 266, Feb. 1979.

50. J. C. Wyant, review of Holographic Interferometry, Appl. Opt. **18**(18), 3155, Sept. 1979.

51. Lawrence F. Rubin and James C. Wyant, "Energy distribution in a scatter-plate interferometer," J. Opt. Soc. Am. **69**(9), 1305–1308, Sept. 1979.

52. James C. Wyant, "Precision optical testing," Science **206**(12), 168–172, Oct. 1979 (invited paper).

53. Osuk Kwon, J. C. Wyant and C. R. Hayslett, "Rough surface interferometry at 10.6 micron," Appl. Opt. 19(11):1862–1869, 1 June 1980.

54. J. C. Wyant, "Holography," in Encyclopedia of Physics, Addison-Wesley, Reading, Massachusetts, 1981.

55. J. C. Wyant, "Interferometry," McGraw-Hill Encyclopedia of Science, McGraw- Hill, New York, 1981.

56. J. C. Wyant, "Speckle," in McGraw-Hill Encyclopedia of Science, McGraw-Hill, New York, 1981.

57. John Hayes, K. L. Underwood, John L. Loomis, Robert E. Parks and James C. Wyant "Testing of nonlinear diamond-turned reflaxicons," Appl. Opt. **20**(2), 235–239, 15 Jan. 1981.

58. James C. Wyant, review of Applied Optics: A Guide to Optical Design, Vol. 2, J. Opt. Soc. Am. **71**(2): 205–206, Feb. 1981.

59. James C. Wyant and Chris L. Koliopoulos, "Phase measurement system for adaptive optics," Agard Conference Proceedings No. **300**, 1981 (invited paper).

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