CURRICULUM VITAE

Marija Strojnik (married Scholl), Ph.D.
SNI Emerita

Name: **Marija Strojnik (Scholl)**

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Experience

Jan. 94 - Pres. Investigador Titular E, Centro de Investigaciones en Optica 37150 León, Gto., México (equivalent to Regent's professor in USA).

Feb. 1987 - Dec. 93 Senior Optical Scientist, Jet Propulsion Laboratory, California Institute of Technology, Pasadena, California.

Nov. 1981 - Feb. 87 Staff Scientist, Corporate Technology Center for Displays, Sperry/Honeywell, Phoenix, Arizona.

Ago. 1978 - Nov. 81 Manager and Senior Member of Technical Staff, Optics Technology, Rockwell International, Rocketdyne Division, Canoga Park, CA.

Ago. 1975 - Nov. 78 Research Associate/Assistant, Optical Sciences Center, University of Arizona, Tucson, Arizona.

Ago. 75 - June 72 Fellow, Research Associate/Assistant, Physics Dept., Arizona State University, Tempe, Arizona.

Sept. 70 June 72 Teaching Assistant, Mathematics Dept., Arizona State University, Tempe, Arizona.

Education

Ph.D. Optical Sciences, 1979, University of Arizona, Tucson, AZ.
M.S. Engineering (Engineering Executive Program), 1981, University of California, Los Angeles, California.
M.S. Optical Sciences, 1977, University of Arizona, Tucson, AZ.
M.S. Physics, 1974, Arizona State University, Tempe, Arizona.
B.S. Physics, 1972, Arizona State University, Tempe, Arizona.
Engineering Physics 69/70, University of Ljubljana, Ljubljana, Slovenia.
Matura *Classical* High School, 1969, Klasicna Gimnazija, Ljubljana, Slovenia.
Thesis: *Electron Microscopy*

Journal Editorial Activities

2020 – pres. Deputy Editor, 2nd term, *Optics Express,* OSA, USA
2019-2020 Lead Guest Editor, *Applied Optics,* Advanced Infrared Technology and Applications, OSA, USA
2017 – 2020. Deputy Editor, 1st term, *Optics Express,* OSA, USA
2017 – 2018 Lead Guest Editor, *Applied Optics,* Advanced Infrared Technology and Applications, OSA, USA
2017 – 2018 Associate Editor, 2nd term, *Optics Express,* OSA, USA
2015 – 2016 Lead Guest Editor, *Applied Optics,* Advanced Infrared Technology and Applications, OSA, USA
2013 – 2016 Associate Editor, 1st term, *Optics Express,* OSA, USA
2013 – 2014 Lead Guest Editor, *Journal of Applied Remote Sensing*, Special issue on Infrared Remote Sensing and Instrumentation, SPIE, USA
2012 – pres. Remote Sensing News, Contributing Editor, SPIE, USA
2012 – 2015 Editor, *Scientific World Journal*, Optics
2011 – 2013. Guest Editor, Journal, *Advances in Optical Technologies,* Special issue *on Advanced Infrared Technology and Applications, 2011*
2002 – pres. Editorial Board, *Journal of Ronchi Foundation*, Italy
1996 – 2000 Topical Editor Term II, *Applied Optics,* (OSA), Infrared Optics
1996 Feature Editor, *Applied Optics,* Infrared Optics, OSA, USA
1994 – pres. Editorial Board, *Infrared Physics & Technology*, Elsevier, Europe
1994 (March) Guest Editor, *Optical Engineering*, Infrared Technology, Part 2, SPIE
1994 (Jan.) Guest Editor, *Optical Engineering*, Infrared Technology, Part 1, SPIE
1992 – 1995 Topical Editor Term I, *Applied Optics* (OSA), Infrared Optics

Awards and Honors

2017 Featured in Temporary Exhibition of Slovenain Technical Museum of 13 scientists
-2019 Featured in booklet accompanying Exhibition of Slovenain Technical Museum
2017 About 15 tributes posted to the OSA honor board to honor MS as a mentor
1999 Fellow of Optical Society of America, USA
1996 SPIE George W. Goddard Award, SPIE, USA
1994 Fellow of SPIE, USA
1982 Election to the American Association for Advancement of Science, USA
1982 Election to Sigma Xi, Scientific Honor Society, USA

Profiled in:

2003 Featured in the first SPIE Calendar, Women in Optics
2002 Great Women of the 21st Century
2002 500 Leaders of Influence
2001 Influential Scientists of 21st century
2000 Outstanding Scientists of the 20th Century
1998 Who's Who in the World
1994 Who's Who of American Women
1992 Who's Who in America
1982 Who's Who in Science and Engineering

Awards

2018 Election to SNI Emerita (220 in total Mexico)
2016 - 2017 Visiting Scholar, University of Guadalajara, College of Sciences and Engineering, Guadalajara, Mexico
2009 Award, *Academia* Mexicana de Óptica
2002 Election to SNI III
2001 Election to membership in *Academia Mexicana de Ciencia*
1995 Election to SNI II
1995 CONACyT Cátedra Patrimonial Nivel II
1994 CONACyT Cátedra Patrimonial Nivel II

91-94 Member, Standards Committee, Optical Society of America, USA
1989 Community College Teaching Certificate, State of California, USA
1987 Visiting Scientist, Optical Sciences Center, The University of Arizona, USA
1981 Lidership Certificate, Los Angeles, California, Women in leadership, USA
74/75 Arizona State University Graduate Fellowship, USA

NASA Certificates for creative development and technological innovations.

1. Intelligent vision system for autonomous vehicle operations.
2. Application of miniaturized optical correlator for docking in space.
3. Digital-optical correlator for automatic target recognition of its infrared signature.
4. Experimental investigation of far field diffraction by normally illuminated circular apertures of wavelength dimension.
5. Spot detection algorithms applicable to correlation image analysis.
6. Use of BRDF for Slope Estimation in Machine Vision

Appointments to International Committees

2019 pres Member, OSA Frederic Ives Medal/ Jarus W. Quinn Prize
2016 pres Member, Fellow Committee of the SPIE, USA
2012 – pres. Member, AITA Award Committee, Ronchi Foundation, Florence, Italy
2010 Member of Fellows Committee, OSA, USA
2005 - 2012 Member, Awards Committee, SPIE, USA
1996 Member, Committee for Allen Prize, OSA, USA
1996 Member, Executive Program Committee Aerosense 96, SPIE, USA
1994 Member, Committee for Born Award, OSA, USA
1992 – pres. Member, Technical Committee, Annual Meeting, San Diego, CA, SPIE
1992 – 2006 Member, Technical Committee, Defense, Florida SPIE
1988 - 1992 Member, Technical Committee for Optical Contamination 92, USA
1991 Member, Standards Committee for Optical Engineering, USA
1986 - 1987 Board of Directors, Treasurer, The Children's Center, AZ, USA

Languages: English, Spanish, Slovenian

CIO and CONACYT Committees

2019 Chair, Double titulation comittee, U of Dayton – CIO
2018 CIO Graduate program coordinator, Optical Engineering
2001 Member, Committee CONACYT to evaluate graduate schools in Mexico
Admissions Committee, CIO, León, Gto., México
Internal Council, CIO, León, Gto., México.

Professional Affiliations

Optical Society of America (Fellow),
SPIE (Fellow),
Sigma Xi, Member
Mexican Academy of Science

Former Member: AAAS; IEEE; American Physical Society; Electro-Chemical Society;
Society for Information Display; Former Senior member, Society of Women Engineers

Teaching – doctoral level CIO

1995 – present Radiometry (Wyatt; Boyd);
1996 -- present Infrared Technology (Lloyd; Wolfe & Zissis)
1997 -- present Optical Engineering (Smith)
1998 – present Visible and IR detectors (Dereniak & Crowe; Smith, Jones & Chasmar)
1999 – pesent Modern Optical Systems (Welford)
2000 – present Optical Information Processing (Goodman; Gaskill)

Teaching – USA

University of Southern California, Los Angeles, California, Adjunct Profesor
1989-1991 Optics (senior level)

LaVerne University, LaVerne, California, Professor
1988-1992 Radiometry, Infrared System Design, Infrared Technolgy and Applications

Pasadena City College, Pasadena, California, Professor
1988 -1992 Algebra, Intermidiary Algebra, Advanced Algebra

Short courses at SPIE and OSA meetings since 1992

Consulting

Alenka Associates, Tempe, AZ, USA

86 - 87 LLNL, Livermore, CA (O-group), Wide-angle optical systems
85 - 86 Alfred E. Mann Foundation for Scientific Research, Los Angeles, CA, Medical optics

Book Chapters

1. M. S. Scholl, M. S. Shumate, R. L. Hartman, J. A. Sloan and D. Small, "Miniaturized Optical Correlator," in *Selected Papers on Optical Correlators*, ISBN: 9780819412935, Suganda Jutamulia, Ed., SPIE Optical Engineering Press, SPIE Milestone Series **76** (1993).

2. M. S. Scholl, "Autonomous Star Field Identification for Solar System Exploration," International Conference, From Galileo's "occhialino" to opto-electronics, Paolo Mazzoldi, Ed., 802-807, World Scientific, New Jersey (1993).

3. M. Strojnik, G. Paez, "Phase Reconstruction from high Fringe-Density Interferograms," in *Optical Engineering*, Ed. Research Singpost, Vol 2, 37-45 (1999).

4. M. Strojnik, G. Paez, "Rotational-Shearing Interferometer," *in Fabrication & Testing of Aspheres*, Ed. OSA Vol 24(1999)

5. M. Strojnik, G. Paez, "Radiometry," in *Handbook of Optical Engineering*, ISBN: 0-8247-9960-7, D. Malacara, B. Thompson, Eds., 649-700, Marcel Dekker (2001).

6. G. Paez, M. S. Strojnik, "Telescopes," in *Handbook of Optical Engineering*, ISBN: 0-8247-9960-7, D. Malacara, B. Thompson, Eds., 207-256, Marcel Dekker (2001).

7. G. Paez, M. Strojnik, "Evaluation of Future Telescopes," in *Recent Research Developments in Optics*, Ed. Research Singpost (2002).

8. M. Strojnik, G. Paez, M. Mantravadi, "Lateral Shearing Interferometry," in *Optical Shop Testing*, ISBN: 978-0-471-48404-2 D. Malacara, Eds., pp 122-176, John Wiley & Sons, Inc (2007).

9. M. Strojnik, G. Paez, "Interferometry to Detect Planets Outside Our Solar System," *Interferometry Applications in Topography and Astronomy*, ISBN 978-953-51-0404-9, Ed. I. Padron, pp 195–220, InTech Pub. Co., Rijeka, Croatia (2012).

10. M. Strojnik, "Remembering Prof. Dr. H. John Caulfield – A Man for All Seasons," in *Advances in Optical Computing IV, Invited*, S. Dolev, M Oltean, Eds., Optical supercomputing OSC12, Book **7715**, Springer-Verlag, Berlin & Heidelberg, 131-134 (2013).

11. M. S. Strojnik, M. S. Kirk, "Telescopes," in *Fundamentals and basic optical instruments*, D. Malacara, B. Thompson, Eds., 325-375; ISBN: 9781498720748 (hardback), ISBN 9781315119984 (e-book) 207-26, CRC Press, New York, New York (2018).

12. M. Strojnik, M. Kujawinska, D. Malacara, "Metrology of full-field methods," Advanced optical instruments and techniques, D. Malacara, B. Thompson, Eds., 213-244; ISBN: 9781498720670 (hardback), ISBN 9781315119977 (e-book), CRC Press, New York, New York (2018).

Book Chapters –cont.

13. M. Strojnik, M. K. Scholl, "Radiometry," in *Advanced optical instruments and techniques*, D. Malacara, B. Thompson, Eds., 459-717; ISBN: 9781498720670 (hardback), ISBN 9781315119977 (e-book), CRC Press, New York, New York (2018).

Conference organization

1991- 2003 SPIE, Infrared Technology Series, Chair and Proceedings Editor
1993 – pres. SPIE, Infrared Remote Sensing Series, Chair and Proceedings Editor (annual)
2003 – pres. International Infrared Technology and Applications (AITA), Ronchi Foundation, Firenze, Italy (biannual)

Lectures

1. Optics in everyday life, School in Himalayas, Nov. 2019.
2. New Delhi Institute of technology, Physics department, Nov 2019
3. University of New Delhy, Physics Department, Nov. 2019
4. University of Washington, Physics Department, Nov. 2015
5. Univ. of Arizona, Optical Sciences Center, Sept. 2005
6. Naval Academy, Monterrey, Feb. 1991
7. JPL, Nov. 1986
8. LLNL, Oct. 1986

Lectures in Spanish

1. University Benemerita, Puebla, 2019
2. Optical research center, Leon (2019)
3. University Aguas Calientes, 2019
4. Optical research center, Leon (2018)
5. University of Guadalajara, 2017
4. High School, Guadalajara, 2017
5. University of Guadalajara, 2016
9. University Iberoamerica, 1998
10. University of Leon, 1997
11. Technologico de Aguas Calientes, 1996
12. University Iberoamerica, 1996
13. Two high schools in Leon, Mexico
14. High-scool outside Leon, Mexico
15. Elementary school, Leon, Mexico
16. University Iberoamerica, 1995

Hobbies

Photography, Clothing Constructions, Assuming role of Father (raising three children alone)

Refereed Publications with Impact factor

1. M. S. Scholl, "Measured Spatial Properties of the CW Nd-YAG Laser Beam," ISSN: 2155-3165 Appl. Opt., **19** (21), 3655-3659 (1980). https://doi.org/10.1364/AO.19.003655

2. M. S. Scholl, "Temperature Calibration of an Infrared Radiation Source," ISSN: 2155-3165, Appl. Opt., **19** (21), 3622-3625 (1980). https://doi.org/10.1364/AO.19.003622

3. M. S. Scholl, W. L. Wolfe, "Infrared Target Design - Fabrication Considerations," ISSN: 2155-3165, Appl. Opt., **20** (12), 2143-2152 (1981). https://doi.org/10.1364/AO.20.002143

4. M. S. Scholl, "Thermal considerations in the design of a dynamic IR target," ISSN: 2155-3165, Appl. Opt., **21** (4), 660-667 (1982). https://doi.org/10.1364/AO.21.000660

5. M. S. Scholl, "Spatial and Temporal Effects due to Target Irradiation: A Study," ISSN: 2155-3165, Appl. Opt., **21** (9), 1615-1620 (1982). https://doi.org/10.1364/AO.21.001615

6. M. S. Scholl, "Errors in Radiance Simulation and Scene Discrimination," ISSN: 2155-3165, Appl. Opt., **21** (10), 1839-1843 (1982). https://doi.org/10.1364/AO.21.001839

7. M. S. Scholl, "Target Temperature Distribution Generated and Maintained by a Scanning Laser Beam," ISSN: 2155-3165, Appl. Opt., **21** (12), 2146-2152 (1982). https://doi.org/10.1364/AO.21.002146

8. M. S. Scholl, J. R. Trimmier, "Luminescence of YAG:TM:Tb," ISSN: 1945-7111, J. Electrochem. Soc., **133** (3), 643-648 (1986). http://doi.org/10.1149/1.2108636

9. M. S. Scholl, G. N. Lawrence, "Diffraction modeling of a space relay experiment," ISSN: 1560-2303 Opt. Eng., **29** (3), 271-278 (1990). https://doi.org/10.1117/12.55581

10. M. S. Scholl, Y. Wang, J. E. Randolph, J. A. Ayon, "Site certification imaging sensor for Mars exploration," ISSN: 1560-2303, Opt. Eng., **30** (5), 590-597 (1991). https://doi.org/10.1117/12.55842

11. M. S. Scholl, "Autonomous Star Field Identification for Solar System Exploration," International Conference, From Galileo's "occhialino" to opto-electronics, Paolo Mazzoldi, Ed., 802-807, World Scientific, New Jersey (1993).

12. M. S. Scholl, "Star field identification algorithm," ISSN: 1539-4794, Opt. Lett., **18** (3), 399-401, (1993). https://doi.org/10.1364/OL.18.000399

13. M. S. Scholl, "Experimental demonstration of a star field identification algorithm," ISSN: 1539-4794 Opt. Lett. **18** (6), 402-404, (1993). https://doi.org/10.1364/OL.18.000402

Refereed Publications with Impact factor – cont.

14. M. S. Scholl, S. Eberlein, "Automated site characterization for robotic sample acquisition systems," ISSN: 1560-2303 Opt. Eng., **32** (4), 840-846 (1993). https://doi.org/10.1117/12.61197

15. M. S. Scholl, "Optical processing for semi-autonomous terminal navigation and docking," ISSN: 2155-3165, Appl. Opt., **32** (26), 5049-5055 (1993. https://doi.org/10.1364/AO.32.005049

16. M. S. Scholl, "Autonomous star field identification using intelligent CCD-based cameras," ISSN: 1560-2303 Opt. Eng., **33** (1), 134-139 (1994). https://doi.org/10.1117/12.155380

17. M. S. Scholl, "Stray light issues for background-limited far-infrared telescope operation," ISSN: 1560-2303 Opt. Eng., **33** (3), 681-684 (1994). https://doi.org/10.1117/12.163401

18. Y. Wang, M. S. Scholl, "Experimental investigation of far-field diffraction by means of normally and non-normally illuminated elliptical apertures of wavelength dimension," ISSN: 1560-2303 Opt. Eng., **33** (3), 692-696 (1994). https://doi.org/10.1117/12.159345

19. M. S. Scholl, "Experimental verification of a star field identification algorithm," ISSN: 1560-2303 Opt. Eng. **33** (4), 1120-1124 (1994). https://doi.org/10.1117/12.165152

20. M. S. Scholl, "Six-Feature Star Pattern Identification Algorithm," ISSN: 2155-3165 Appl. Opt., **33** (20), 4459-4464 (1994). https://doi.org/10.1364/AO.33.004459

21. M. S. Scholl, "Star field identification for autonomous attitude determination," ISSN: 0731-5090, The Journal of Guidance, Control and Dynamics, 1**8** (1), 61-65 (1995). https://doi.org/10.2514/3.56657

22. M. S. Scholl, "Architecture for object identification--incorporating an optical correlator and digital processing for display and recording of optical data," ISSN: 1560-2303, Opt. Eng., **34** (3), 887 - 895 (1995). https://doi.org/10.1117/12.188592

23. M. S. Scholl, "Ray Trace through a Corner Cube Retroreflector with Complex Reflection Coefficients," ISSN: 1084-7529, J. Opt. Soc. Am. A. **12** (7), 1589- 1592 (1995). https://doi.org/10.1364/JOSAA.12.001589

24. M. S. Scholl, G. Paez-Padilla, Yaujen Wang, "Design of a high resolution telescope for an Imaging sensor to characterize a (Martian) landing-site," ISSN: 1560-2303, Opt. Eng., **34** (11), 3222-3228 (1995). https://doi.org/10.1117/12.213606

25. M. S. Scholl, G. N. Lawrence, "Adaptive optics for in-orbit aberration correction -- feasibility study," ISSN: 2155-3165, Appl. Opt., **34** (31), 7295-7301 (1995). https://doi.org/10.1364/AO.34.007295

Refereed Publications with Impact factor – cont.

26. M. S. Scholl, "Experimental verification of a star field identification algorithm," ISSN: 1560-2303, Opt. Eng., **35** (2), 384- 390 (1996). https://doi.org/10.1117/12.165152

27. M. S. Scholl, "Design parameters for a two-mirror telescope for stray-light sensitive infrared applications," ISSN. 1350- 4495 Infr. Phys. & Tech., **37**, 251 - 257 (1996). https://doi.org/10.1016/1350-4495(95)00048-8

28. M. S. Scholl, "Infrared signal generated by a planet outside the solar system discriminated by rotating rotationally-shearing interferometer," ISSN. 1350- 4495 Infr. Phys. and Tech. **37**, 307 - 312 (1996). https://doi.org/10.1016/1350-4495(95)00068-2

29. M. S. Scholl, "Signal detection by an extra-solar-system planet detected by a rotating rotationally-shearing interferometer," ISSN:1084-7529 J. Opt. Soc. Am. A, 13 (7), 1584- 1592 (1996). http://doi.org/10.1364/JOSAA.13.001584

30. M. S. Scholl, "Recursive exact ray trace equations through the foci of the tilted off-axis confocal prolate spheroids," ISSN 0950 -340, J. Modern Opt., **43** (8), 1583- 1588 (1996). https://doi.org/10.1080/09500349608232831

31. M. S. Scholl, "Figure error produced by the coating-thickness error," ISSN. 1350- 4495 Infr. Phys. & Tech., **37**, 427 - 437 (1996). https://doi.org/10.1016/1350-4495(95)00117-4

32. M. S. Scholl, G. Paez-Padilla, "Using the y, y-bar diagram to control stray light noise in IR systems," ISSN. 1350- 4495, Infr. Phys. & Tech., **38**, 25-30 (1997). https://doi.org/10.1016/S1350-4495(96)00009-6

33. S. Calixto, M. S. Scholl, "Relief optical microelements fabricated with dichromated gelatin," ISSN: 2155-3165 Appl. Opt., **36**(10) 2101-2106 (1997). https://doi.org/10.1364/AO.36.002101

34. M. S. Scholl, G. Paez-Padilla, "Push - broom Reconnaissance Camera with Time Expansion for a (Martian) landing - site certification," ISSN: 1560-2303 Opt. Eng., **36**(2) 566-573 (1997). https://doi.org/10.1117/1.601228

35. M. S. Scholl, G. Paez-Padilla, "Image-plane incidence for a baffled infrared telescope," ISSN. 1350- 4495 ISSN. 1350- 4495, Infr. Phys. & Tech., **38**, 87-92 (1997). https://doi.org/10.1016/S1350-4495(96)00040-0

36. M. S. Scholl, G. Garcia-Torales, "Two Beam Laser Illumination For Shape Classification Feasibility Study," ISSN 0035-001X, Revista Mexicana De Fisica **43**, 926-939 (1997).

37. G. Páez Padilla, M. Strojnik Scholl, "Recursive relations for ray-tracing through three-dimensional reflective confocal prolate spheroids," ISSN 0035-001X Revista Mexicana de Física, **43**(6), p 875-886 (1997).

Refereed Publications with Impact factor – cont.

38. G. Paez, M. Strojnik, "Convergent, recursive phase reconstruction from noisy, modulated intensity patterns using synthetic interferograms," ISSN: 1539-4794 Opt. Lett. **23**(6) 406-408 (1998). https://doi.org/10.1364/OL.23.000406

39. G. Paez, M. Strojnik, "Fringe analysis and phase reconstruction from modulated intensity patterns," ISSN: 1539-4794 Opt. Lett., **22**(22), 1669-1971 (1997). https://doi.org/10.1364/OL.22.001669

40. M. S. Scholl, G. Paez, J. Flores, "Phase Reconstruction with Line-integration of noisy, high-spatial-frequency Intensity Patterns," *Special issue* on *Optics for Information Infrastructure, J. Optoelecxtronics, Laser (JOEL),* Vol. 9 Suppl., pp 385-387 (1998).

41. G. Paez, M. S. Scholl, "Phase-shifted interferometry without phase unwrapping: reconstruction of a decentered wavefront," ISSN:1084-7529 J. Opt. Soc. Am. A, **16** 475-480 (1999). https://doi.org/10.1364/JOSAA.16.000475

42. G. Páez, M. Strojnik-Scholl, "Thermal contrast detected with a thermal detector," ISSN. 1350-4495 Infr. Phys. & Technol., **40**, 109-116 (1999). https://doi.org/10.1016/S1350-4495(98)00050-4

43. G. Paez, M. S. Scholl, "Thermal contrast detected with a quantum detector," ISSN. 1350- 4495 Infr. Phys. & Technol., **40**, 261-265 (1999). https://doi.org/10.1016/S1350-4495(98)00057-7

44. J. Flores, G. Paez, M. Strojnik, "Design of a diluted-aperture mirror using the practical cut-off frequency," ISSN: 2155-3165 Appl. Opt. **38** (28), 6010 -6018 (1999). https://doi.org/10.1364/AO.38.006010

45. M. Strojnik, G. Paez, "Simulated interferometric patterns generated by a nearby star-planet system and detected by a rotationally-shearing interferometer," ISSN: 1084-7529 J. Opt. Soc. Am. A, **16** (8), 2019-2024 (1999). https://doi.org/10.1364/JOSAA.16.002019

46. M. Strojnik-Scholl, G. Paez, "*Cancellation* of star-light generated by a nearby star-planet system upon detection with a rotationally-shearing interferometer," ISSN. 1350- 4495 Infr. Phys. & Technol., **40**, 357-365 (1999). https://doi.org/10.1016/S1350-4495(99)00025-0

47. G. Paez, M. Strojnik, "Phase reconstruction from Undersampled intensity pattern(s)," ISSN:1084-7529 J. Opt. Soc. Am. A, **17** (1), 46-52 (2000). https://doi.org/10.1364/JOSAA.17.000046

48. G. Paez, M. Strojnik, G. García-Torales, "Vectorial shearing interferometer," ISSN: 2155-3165 Appl. Opt., **39** (28), 5172-5178 (2000). https://doi.org/10.1364/AO.39.005172

Refereed Publications with Impact factor – cont.

50. G. García-Torales, G. Paez, M. Strojnik, "Simulations and experimental results with a vectorial shearing interferometer," ISSN: 1560-2303 Opt. Eng., **40** (5), 767-773 (2001). https://doi.org/10.1117/1.1360707

51. P. Arguijo, M. Strojnik, G. Paez, "Diffraction patterns formed by an off-axis paraboloidal surface," ISSN: 2155-3165 Appl. Opt., **40** (17), 2909-2916 (2001). https://doi.org/10.1364/AO.40.002909

52. G. García-Torales, M. Strojnik, G. Paez, "Risley prisms to control wave-front tilt and displacement in a vectorial shearing interferometer," ISSN: 2155-3165 Appl. Opt, **41** (7) 1380-1384 (2002). https://doi.org/10.1364/AO.41.001380

53. J. Castrellon, M. Strojnik, G. Paez, "Radiometric analysis of a fiber optic temperature sensor," ISSN: 1560-2303 Opt. Eng., **41** (6) 1255-1261 (2002). https://doi.org/10.1117/1.1476690

54. J. Castrellon, G. Paez, M. Strojnik, "Remote temperature sensor employing erbium-doped silica fiber," ISSN. 1350- 4495 Infr. Phys. & Technol., **43**, 219-222 (2002). http://dx.doi.org/10.1016/S1350-4495(02)00142-1

55. G. Paez, M. Strojnik, "Erbium-doped optical fiber fluorescence temperature sensor with enhanced sensitivity, a high signal-to-noise ratio, and a power ratio in the 520-530- and 550-560-nm bands," ISSN: 2155-3165 Appl. Opt., **42** (16), 3251-3258 (2003). https://doi.org/10.1364/AO.42.003251

56. I. Moreno, G. Paez-Padilla, M. Strojnik, "Dove prism with increased throughput for implementation in rotational shearing interferometer," ISSN: 2155-3165 Appl. Opt., **42** (22), 4514-4521 (2003). https://doi.org/10.1364/AO.42.004514

57. J. L. Flores, G. Paez-Padilla, M. Strojnik, "Optimal aperture configuration for segmented and partially diluted extremely large telescope," ISSN 0950-340 J. of Mod. Opt., **50** (5), 729-742 (2003). https://doi.org/10.1080/09500340308235181

58. P. Arguijo, M. Strojnik Scholl, "Exact ray-trace beam for an off-axis paraboloidal surface," ISSN: 2155-3165 Appl. Opt., **42** (16), 3284-3289 (2003). https://doi.org/10.1364/AO.42.003284

59. M. Strojnik, G. Paez, "Comparison of linear and rotationally shearing interferometric layouts for extrasolar planet detection from space," ISSN: 2155-3165 Appl. Opt., **42** (29), 5897 - 5905 (2003). https://doi.org/10.1364/AO.42.005897

60. J. Muñoz, M. Strojnik, G. Paez, "Phase recovery from a single undersampled interferogram," ISSN: 2155-3165 Appl. Opt., **42** (34), 6846 - 6855 (2003). http://doi.org/10.1364/AO.42.006846

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29. M. Strojnik, "Infrared Spaceborne Remote Sensing XI - Introduction," *(Invited)* Infrared Spaceborne Remote Sensing XI Proc. SPIE **5152**, p. IX -XI (2003). ISBN: 9780819450258

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50. Human and Machine Vision, NotiCIO, Spanish (Dec. 2019).

51. P. Bison, M. D'Acunto, X. Maldague, D. Moroni, V. Raimondi, A. Rogalski, T. Sakagami, and M. Strojnik, 15th International Workshop on Advanced Infrared Technology and Applications (AITA), Proceedings 2019, 27, 53; Publisher MDPI, Basel, Switzerland. https://doi.org/10.3390/proceedings2019027053

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53. Contributor to the booklet, Knowledge without borders, Exhibition of Slovenain Technical Museum of 15 scietists and innovators, English & Slovenian, Published Technical Museum, Slovenia, Ljubljana, Slovenia, 2017.

Presentations with Short Abstracts

1. M. S. Scholl, "Infrared Imaging of Self-Radiating Objects by an Optical System with a Large F-Number," 1979 Annual Meeting of the Optical Society of America, Journal of the Optical Society of America, December 1979.

2. M. S. Scholl, Carl K. Shumway, "Fabrication Errors in Reflection - Enhanced Coating on an Optical Element," 1981 Annual Meeting of the Optical Society of America, published in the Journal of the Optical Society of America, Dec. 1981.

3. M. S. Scholl, "Technological Changes - Can Anybody Keep Up With Them," 1981 Annual Meeting of the Society of Woman Engineers, June 25-28, 1981, Anaheim, California, published in the SWE Proceedings (1981).

4. M. S. Scholl, J. Robert Trimmier, "Luminescence of YAG:Tm, YAG:Tb, YAG:Tm:Tb," Fall 1984 Meeting of the American Electrochemical Society, New Orleans, Louisiana, October 1984.

5. M. S. Scholl, "Complex Reflectivity of a Corner Cube Retroreflector," 1988 Annual Meeting of the Optical Society of America, OSA Technical Digest 1988. https://doi.org/10.1117/12.185850

6. M. S. Scholl, Yaujen Wang, "Diffraction Effects Due to an Occulting Aperture: Comparison of Theories," 1989 Annual Meeting of the Optical Society of America, OSA Technical Digest 1989.

7. M. S. Scholl, "Imaging Approaches for Certification of Planetary Landing Sites," 1989 Annual Meeting of the Optical Society of America, OSA Technical Digest 1989.

8. M. S. Scholl, Suraphol Udomkesmalee and Michael S. Shumate, "Spot Detection in Optical Correlation Plane," 1990 Annual Meeting of the Optical Society of America, OSA Technical Digest 1990.

9. M. S. Scholl, M. S. Shumate, J. A. Sloan, "Optical Cross Corre-lation for Changing Illumination Conditions," 1990 Annual Meeting of the Optical Society of America, OSA Technical Digest 1990.

10. M. S. Scholl, "Hybrid-digital optical correlator - from laboratory instrument to autonomous sensor," Gordon research conference, Holographic Image Processing, June 1991.

11. M. S. Scholl, "Use of BRDF for Slope Estimation in Machine Vision," 1991 Annual Meeting of the Optical Society of America, OSA Technical Digest 1991.

12. G. N. Lawrence, M. S. Scholl, "Adaptive Optics for in-orbit aberration correction," 1992 Annual Meeting of the Optical Society of America, OSA Technical Digest 1992.

Presentations with Short Abstracts - cont.

13. M. S. Scholl, Luisa De Antonio, Edwin W. Dennison, James W. Alexander, Randy K. Bartman**,** "Star-field recognition," 1992 Annual Meeting of the Optical Society of America, OSA Technical Digest 1992.

14. M. S. Scholl, "High performance displays for all-glass (virtual) cockpit environment," 1992 Annual Meeting of the Optical Society of America, OSA Technical Digest 1992.

16. M. S. Scholl, "An algorithm for approximate matching of patterns of point intensities," 1993 Annual Meeting of the Optical Society of America, OSA Technical Digest 1993.

17. M. S. Scholl, "Control of thermal noise in infrared optical system," 1994 Annual Meeting of the Optical Society of America, OSA Tech. Digest 1994.

18. M. S. Scholl, "Ray-trace in three-dimensions through reflective confocal prolate spheroids," 1995 Annual Meeting of the Optical Society of America, OSA Tech. Digest 1995. https://doi.org/10.1117/12.231033

19. M. Strojnik, G. Paez, "Sensitivity of a temperature sensor, employing ratio of fluorescence power in a band," Advanced Infrared Technology and Applications, September 2003, Pisa, Italia, Ed. Fondazione Giorgio Ronchi (2003).

20. G. Paez, M. Strojnik, "Er-doped silica dynamic IR-to-visible image converter," Advanced Infrared Technology and Applications, September 2003, Pisa, Italia, Ed. Fondazione Giorgio Ronchi (2003).

21. P. Vacas Jacques, M. Strojnik, and G. Paez, "Tissue entropy and Low- coherence transillumination interferometry," Biophotonics 07, Ven, Sweden, Backafallsbyn, Ven (2007).

22. M. Strojnik, G. Paez, "Bi-spectral imaging in mid-IR at 1000 frames per second," Advanced Infrared Technology and Applications, L'Aquila, Italy, Ed. Fondazione Giorgio Ronchi (September 2011).

Awards and Honors, Slovenian

Castni Pokrovitelj, Slovenski festival znanosti (Honorary Chair, Slovenian Science Festival), 2019

Zvezda poljudno-znanstvene komunikacije, Slovenska znanstvena fundacija (Star of science popularizacion, Slovenian Scientific Foundation), 2017

Lectures in Slovenian

1. Slovenski Festival Znanosti (Slovenian festival of science), Infrardece sevanje za zdravje in znanost (Infrared radiation in science and health), Ljubljana, Slovenia, Nov. 11, 2020 (virtual).

2. Plenarno Predavanje (Plenary Lecture), Slovenski Festival Znanosti (Slovenian festival of science), Veliki telskopi na Atacama planoti (Large telescopes on the Atacama plane), Ljubljana, Slovenia, Sept. 25, 2019.

3. Drustvo slovenskih klasikov (Slovenian society of klasicists), Opticna znanost in klasicni jeziki (Optical science and classical languages) June 25, 2019.

4. Tehnicni muzej Slovenije (Technical museum of Slovenia), Spominjam se prve clovekove stopinje na Luni (Remembering the first human step on the Moon), June 26, 2019.

5. Slovensko Druztvo za manj vidne (Slovenian society for people with decreased vision), Cloveski vid brez svetlobe (Human vision without light), Sept 2018.

6. Osnovna Sola Medvode (elementary school Medvode), Iskanje planetov izven soncnega sistema, Extra-solar system planet exploration), Sept. 2018.

7. Uvodno predavanje pri otvoritvi razstave Znanje brez meja, Introductory address at the Opening of exhibition, Knowledge without Frontiers, Technicni muzej Slovenije (Technical Museum Slovenia), March 3, 2018.

8. Javno predavanje naslednji dan po otvoritvi razstave Znanje brez meja, Moje zivljenje kot znanstvenica (My life as a scientist, lecture for general participants day after the formal Opening of exhibition, Knowledge without Frontiers), Technicni muzej Slovenije (Technical Museum Slovenia), March 4, 2018.

9. Plenarno Predavanje (Plenary Lecture), Slovenski Festival Znanosti (Slovenian festival of science), Iskanje planetov izven soncnega sistema (Search for planets outside our solar system), Ljubljana, Slovenia, Nov. 25, 2017.

Graduated Doctoral Students

1. Dr. Gonzalo Paez: Deteccion de Senales en Infrarrojo (Infrared Signal Detection), Sept. 2000; Investigador Titular C y Director de Tecnologia, Centro de Investigaciones en Optica, SNI III

2. Dr. Guillermo García Torales: Diseño, fabricación y caracterización del interferómetro de desplazamiento vectorial (Design, fabrication and characterization of the vectorial shearing interferometer), Dic. 2001; Professor/ Investigador y Coordinador de posgrado, Departamento de Electronica y Comunicaciones, Universidad de Guadalajara, Guadalajara, Mexico, SNI I

3. Dr. Jorge L. Flores, Análisis y optimización de un espejo de abertura diluida (Analysis and optimization of a mirror with diluted aperture), Dic. 2001; Professor / Investigador, Departamento de Electronica y Comunicaciones, Universidad de Guadalajara, Guadalajara, Mexico, SNI II

4. Dr. Jesús Castrellón: Caracterización de un sensor de fibra óptica para el monitoreo remoto (Characterization of a fiber-optic sensor for remote sensing of temperature), Marzo 2002; Professor / Investigador, University of Morelia, Morelia, Mexico, SNI I

5. Dr. Simon Pedro Arguijo, Alineación de las supeficies asimétricas usando los patrones de difracción, (Alignment of asymmetric surfaces using diffraction patterns), April 2001; Universidad de Morelia, SNI I

6. Dr. Jesús Munoz, Reconstrucción de imagenes de patrones de intensidad sub-mostreados y/o sub-detectados (Image reconstruction from the interferometric patterns with under-sampled intensity), Dic. 2003; Professor/ Investigador, University of Guadalajara, Silao, Mexico, SNI I

7. Dr. Paulino Vacas Jacques: Transiluminación Biomédica con Fotones Balísticos (Biomedical tranillumination with ballistic photons), Oct. 2009; Postdoctoral Fellow, Wellmann Center for Biomedicine, Boston University Medical Center, Massachusetts, USA; SNI I

8 Dr. Claudio Ramírez, Interferometro de desplazamiento lateral con sensitividad ajustable (Lateral shearing interferometer with adjustable sensitivivity), July 2011; Assistant Professor, Universidad autonoma de Mexico City, Mexico, Mexico City; SNI I

9 Dr. Enoch Gutierrez Herrera, Interferometro de dezplazamiento rotacional (Rotational shearing interferometer), Dic. 2011, Investigador Titular A, Universidad autonoma de Mexico City, Mexico; SNI I

10. Dr. Héctor Hugo Torres Ortega, Modelado de un dispositivo para cuantificación de amplificación de ADN (A device for DNA amplification and its performance assessment), Feb.12, 2017; Instructor, University of Guadalajara, Guadalajara, Jalisco, Mexico

11. Dr. Manuel Salvador Beethoven Bravo Medina, Retardador de fase utilizando prismas de risley en en interferometro de desplazamiento (Phase retarder using risley prisms in the displacement interferometer); Assistant profesor, University of Guadalajara, Guadalajara, Jalisco, Mexico

Graduated Doctoral Students – cont.

12. Maximiliano Galan Gonzalez, "Limitas de deteccion de planetas extra-solares con un interferometro de desplazamiento rotacional: condiciones" (Limits in planet detection using a rotational shearing interferometer: conditions), June 2019, Technologico de Monterrey, Leon, Mexico

Doctoral Students graduated in IR group under Dr. Strojnik's Mentorship

13. Dr. Iván Moreno, "Development of rotational shearing interferometer" (2003); Profesor, University of Zacatecas, Mexico

14. Dr. Jaime Sandoval González, "Dynamic convertor of IR to visible images, based in Si:Er " (2005); Instructor, Canada

15. Dr. Eduardo López, "Reabsortion time constant in excited state" (2006); researcher, IberoAmerican University

16. Dr. Arturo Aranda, "Tomography of dispersive materials" (2008); Instructor, Universidad autonoma de Mexco City, Mexico

17. Dr. Camille Vazquez, "Oxymetry as an non-invasive technique" (2011); patent attorney in Switzerland

18. Dr. Juan Carlos Ramirez, "Non-invasive monitoring techniques in IR" (2011); Instructor, University of Guanajuato, Mexico

19. Dr. Mariana Alfaro, "Visible-to-infrared converter" (2012); Assistant professor, University of Aguascalientes, Mexico

Graduated Master-of-Science Students

1. Dr. Claudio Narciso Ramirez, Trazo exacto a traves de prismas risley para su aplicación en un interferometro de desplazamiento vectorial (Exact ray trace through Risley prisms for applications in a vectorial shearing interferometer), Oct. 2004; Assistant Professor, UNAM, Mexico City; SNI I

2. Dr. Enoch Gutierrez Herrera, Trazo exacto de rayas en un prisma Dove para su aplicación en un interferometro de desplazamiento rotacional (Exact ray trace through Dove prisms for applications in a rotationally shearing interferometer), August 2005; Assistant Professor, UNAM; SNI I

3. Maximiliano Galan Gonzalez, Deteccion de planetas extra-solares con un interferometro de desplazamiento rotacional: condiciones (Planet detection using a rotational shearing interferometer: conditions), August 2005, Technologico de Monterrey, Leon, Mexico

Graduated Master-of-Science Students - Cont.

4. Dr. Paulino Vacas Jacques, Diagnostico mediante tecnicas interferometricas de fotones no atenuados (Diagnosis using interferometry with non-attenuated transmitted photons), August 2005; Postdoctoral Fellow, Wellmann Center for Biomedicine, Boston University Medical Center, Massachusetts, USA; SNI I

5. Eduardo Alatorre Alvarez, Modelado matemático y verificación de la ablación de tejido dental (Laser ablation of dental tissue – mathematical model and its verification), August 2005; employed in industry

6. Rebecca Baltazar Barron, "Deteccion de planetas extra-solares con un interferometro de desplazamiento rotacional" (Detection of planet around a nearby star, using rotationally shearing interferometer). Doctoral student

7. Alejandro Reynoso Álvarez, "Caracterización de un modulador espacial de luz para la compensación de fase," (Characterization of a Spatial Light Modulator for Phase Compensation), Jan 31, 2018; Librarian, University of Guadalajara, Guadalajara, Mexico

8. Brenda Mireya Guzman Valdivia, "Transilluminacion a traves de tres tejidos," (Transillumination through three tissues), May 2018. Doctoral student

9. Sergio G. Angulo, "All-in-focus image reconstruction robust to ghosting effect", Feb 2019. Doctoral Sstudent.

10. Erick Fabian Ipus Bados, "Limite de aplicacion del metodo de fotones balistocos en tejido bilologico" (Limit of application of the method of balistic photons in biological tissue), Sept. 2019. Doctoral student

11. Marcos Valero, "Comparison," Nov. 23, 2020. Optical Research Center; Dec. 15, 2020, Electro-optics, University Of Dayton. Doctoral student.

Master's degree Students graduated in IR group under Dr. Strojnik's Mentorship

10. Juan Arturo Aranda, "Development of a tomography system in IR" (2003); Instructor, Universidad autonoma de Mexco City, Mexico

11. Jaime Sandoval, "IR to visible converter" (2003); Instructor, Canada

12. Eduardo López, "Temperature sensor using optical fiber doped with erbium" (2003); researcher, IberoAmerican University

13. Mariana Alfaro, "Thermal characterization of EuTTA material" (2005); Assistant professor, University of Aguas Calientes, Mexico

14. Antonio Ortega, "Tomography in 2-D" (2005); persuing doctoral degree at University of Michigan, USA

15 Camille Vazquez, "Analysis of oxymetry for its application to detection of brain activities" (2005); patent attorney in Switzerland

16. Juan Carlos Ramirez, "Characterization of flames using two-wavelength thermometry and lateral shearing interferometry" (2006); Asistant Profesor, University of Guanajuato, Mexico

Graduated Bachelor-of-science Student

1. Dr. Jaime Sandoval, Universidad Iberoamericana, Plantel Leon, Gto, Un mecanismo posicionador de un prisma delgado, Jan. 2002, Instructor in Montréal, Canada

Conferencies in Spanish

1. Marija Strojnik Scholl, “Aplicación del interferómetro de desplazamiento rotacional para prueba de segmentos esferoidales fuera de eje en sistemas opticos,” *XXXIX Congreso Nacional de Física, Oaxaca México* 14-18 de octubre de 1996, Sociedad Mexicana de Física (3MC6), p. 83 (1996).

2. Marija Strojnik Scholl, Gonzalo Páez Padilla, “Reconstrucción del frente de onda por medio de la generación de interferogramas sintéticos,” XL*Congreso Nacional de Física, Monterrey, Mexico,* 27-31 de octubre de 1997, Sociedad Mexicana de Física (2SG1), p. 20 (1997).

3. Gonzalo Páez Padilla, Marija Strojnik Scholl, “Reconstrucción del frente de onda por medio de la integración de patrones de intensidad (franjas),” XL*Congreso Nacional de Física, Monterrey, Mexico,* 27-31 de octubre de 1997, Sociedad Mexicana de Física (2SG6), p. 21 (1997).

4. Guillermo García Torales, Marija Strojnik Scholl, “Diseno y fabricación de prismas de Risley”, XL*Congreso Nacional de Física, Monterrey, Mexico,* 27-31 de octubre de 1997, Sociedad Mexicana de Física (1MC4), p. 28 (1997).

5. Jorge L. Flores, Carlos J. Martinez, Marija S. Scholl, S. Pedro Arguijo, “Diseno y fabricación de un espejo parabolico de apertura diluida”, XL*Congreso Nacional de Física, Monterrey, Mexico,* 27-31 de octubre de 1997, Sociedad Mexicana de Física (5SA2), p. 74 (1997).

6. Pedro Arguijo Hernández, Carlos Javier Martínez, Marija S. Scholl, Jorge Luis Flores Nunez, “Análisis de las pruebas ópticas en sistemas afuera de eje”, XL*Congreso Nacional de Física, Monterrey, Mexico,* 27-31 de octubre de 1997, Sociedad Mexicana de Física (3SG2), p. 45 (1997).

7. Marija Strojnik Scholl, Gonzalo Páez Padilla ”Contraste termal detectado con un detector cuántico”, *XLI Congreso Nacional de Física, San Luis Potosí, México*, 26-30 de octubre de 1998, Sociedad Mexicana de Física (2SG6), p. 18 (1998).

8. Gonzalo Páez Padilla, Marija Strojnik Scholl, ”Una aproximación a la ecuación de Planck integrable con error en radiancia menor de 0.1%”, *XLI Congreso Nacional de Física, San Luis Potosí, México*, 26-30 de octubre de 1998, Sociedad Mexicana de Física (2SG2), p. 17 (1998).

9. Jesús Munoz, Marija Strojnik Scholl, ”Dependencia en temperatura de la incidancia de un cuerpo gris en un intervalo espectral con un detector térmico”, *XLI Congreso Nacional de Física, San Luis Potosí, México*, 26-30 de octubre de 1998, Sociedad Mexicana de Física (2SG4), p. 18 (1998).

10. Jorge L. Flores, Marija Strojnik Scholl, ”Diseno conceptual de un interferómetro estelar de desplazamiento rotacional”, *XLI Congreso Nacional de Física, San Luis Potosí, México*, 26-30 de octubre de 1998, Sociedad Mexicana de Física (5SG7), p. 72 (1998).

Conferencies in Spanish - cont.

11. S. Pedro Arguijo, Marija Strojnik Scholl, ” Patrones de difracción generados por superficies ópticas asimetricas”, *XLI Congreso Nacional de Física, San Luis Potosí, México*, 26-30 de octubre de 1998, Sociedad Mexicana de Física (5SF1), p. 70 (1998).

12. Jorge L. Flores, Marija Strojnik Scholl, ”Optimización de un espejo de abertura diluida con un diametro dado”, *XLI Congreso Nacional de Física, San Luis Potosí, México*, 26-30 de octubre de 1998, Sociedad Mexicana de Física (6SG8), p. 97 (1998).

13. Jorge L. Flores, Marija Strojnik Scholl, “Cambios en la forma de un espejo segmentado como funcion de la temperatura” *XLI Congreso Nacional de Física, San Luis Potosí, México*, 26-30 de octubre de 1998, Sociedad Mexicana de Física (1MC10), p. 24 (1998).

14. G. Garcia Torales, Marija Strojnik Scholl, Gonzalo Páez, “Análisis de un interferómetro de desplazamiento vectorial”, *XLI Congreso Nacional de Física, San Luis Potosí, México*, 26-30 de octubre de 1998, Sociedad Mexicana de Física (5SG3), p. 72 (1998).

15. G. Garcia Torales, Marija Strojnik Scholl, Gonzalo Páez, “Sistema de prismas para controlar la posición del frente de onda”, *XLI Congreso Nacional de Física, San Luis Potosí, México*, 26-30 de octubre de 1998, Sociedad Mexicana de Física (5SG5), p. 72 (1998).

16. Jesús Castrellon, Marija Strojnik Scholl, ” Figuras de merito de un sensor de fibra óptica para el monitoreo de instalaciones electricas”, *XLI Congreso Nacional de Física, San Luis Potosí, México*, 26-30 de octubre de 1998, Sociedad Mexicana de Física (6SF2), p. 94 (1998).

17. Brenda Mireya Guzmán Valdivia, Marija Strojnik, “Simulación de transiluminación con fotones balísticos a través de tres tejidos,” Congreso Nacional de Fisica, Leon, Gto, Mexico, Octubre 2-7, 2016.