Recent publications
PROFESSOR EMERITUS JOSEPH SHAMIR

Date: January 2006

Reviewed Publications in Scientific and Professional Journals:

1. Y. Baharav, B. Spektor, J. Shamir, D. G. Crowe, W.T. Rhodes and R. Stroud "Wavefront Sensing by Pseudo Phase-Conjugate Interferometry", Appl. Opt. Vol. 34, pp. 108-113, (1995)
2. U.-S. Rhee, H.J. Caulfield, C.S. Vikram and J. Shamir, "Dynamics of hologram recording on Du Pont photopolymer" Appl. Opt. Vol. 34, pp. 846-853, (1995)
3. E. Silvera, T. Kotzer and J. Shamir, "Adaptive pattern recognition with rotation, scale and shift invariance." Appl. Opt. Vol. 34, pp. 1891-1900, (1995)
4. Y. Baharav and J. Shamir, "Increase in compensated field of view using a double-conjugate adaptive optics system" Appl. Opt. Vol. 34, pp. 2102-2110, (1995).
5. T. Kotzer, N. Cohen and J. Shamir, "Image reconstruction by a novel parallel projection onto constraint set method" (also EE Publ. 919), Opt. Lett. Vol. 20, pp. 1172-1174, (1995)
6. B. Spektor and J. Shamir, "Wave front analysis using Fresnel lens arrays", Opt. Lett. Vol. 20, pp. 1504-1506, (1995)
7. T. Kotzer, J. Rosen and J. Shamir, "Application of serial and parallel projection methods to correlation filter design" Appl. Opt. Vol. 34, pp. 3883-3895, (1995)
8. J. Shamir and N. Cohen, "Root and power transformations in optics". J. Opt. Soc. Am. A, Vol. 12, pp. 2415-2423, (1995).
9. J. Shamir, "Iterative methods in efficient holographic information storage" J. Opt. Mem. & Neur. Nets Vol.4, No. 3, pp.211-222 (1995)— **INVITED**.
10. L. Singher, Y. Segal and J. Shamir, "Analysis of guided wave interaction with a cylindrical flaw by the method of moments," Ultrasonics Vol. 33, pp. 281-287, (1995);
11. D. Levy, L. Singher, J. Shamir and Y. Leviatan, "Step height determination by a focused Gaussian beam," Opt. Eng. Vol. 34, pp. 3303-3313, (1995)
12. B. Spektor, R. Piestun and J. Shamir, "Dark beams with a constant notch," Opt. Lett. Vol. 21, pp. 456-458, (1996) (also p. 911)
13. R. Srinivasan. J. Kinser, M. Schamschula, J. Shamir and H.J. Caulfield, "Optical syntactic pattern recognition using fuzzy scoring," Opt. Lett. Vol. 21, pp. 815-817, (1996)
14. Y. J. Schechner and J. Shamir, "Parametrization and orbital angular momentum of anisotropic dislocations" J. Opt. Soc. Am. A Vol. 13, pp. 967-973, (1996)
15. Y. Baharav, E.N. Ribak and J. Shamir, "Wide field analysis of turbulence layers using fringes in the mesosphere" J. Opt. Soc. Am. A, Vol. 13, pp. 1083-1093, (1996)
16. L. Levin, D. Tzach and J. Shamir, "Fiber optic velocity interferometer with very short coherence length light source." Rev. Sci. Instr. Vol. 67, pp. 1434-1437, (1996)
17. R. Piestun, B. Spektor and J. Shamir, "Unconventional Light Distributions in 3-D domains," J. Mod. Opt. Vol. 43, pp. 1495-1507, (1996)

18. Y.Y. Schechner, R. Piestun and J. Shamir, "Wave propagation with rotating intensity distributions," Phys. Rev. E, Vol. 54, pp. R50-R53, (1996).

19. A. Twitto, J. Shamir, A. Notea and A. Bekker "Detection of internal defects using phase shifting holographic interferometry." (NDT & E International, Vol. 29 No. 3, pp. 163-173, (1996).

20. R. Piestun, B. Spektor and J. Shamir, "Wave fields in three dimensions: Analysis and synthesis" J. Opt. Soc. Am. A Vol. 13, pp. 1837-1848, (1996).

21. R. Piestun, B. Spektor and J. Shamir "On-Axis Binary-Amplitude Computer Generated Holograms". Opt. Comm. Vol. 136, pp. 85-92, (1997).

22. R. Piestun, Y. Y. Schechner and J. Shamir, "Self-imaging with finite energy" Opt. Lett. Vol. 22, pp. 200-202, (1997).

23. T. Kotzer, N. Cohen and J. Shamir "A Projection Algorithm for Consistent and Inconsistent Constraints" (EE Publ. 920, Aug. 1994) SIAM J. on Optimization Vol. 7, pp. 527-546, (1997)

24. B. Spektor, J. Shamir and A. Bekker, "Wave front analysis with high accuracy inversion interferometer," Opt. Eng. Vol. 36, pp. 1754-1759, (1997)

25. R. Piestun, J. Shamir, B. Wesskamp and O. Bryngdahl, "On-axis computer generated holograms for 3-D display" Opt. Lett. Vol. 22, pp. 922-924, (1997).

26. M. Friedman, T. Kotzer and J. Shamir, "High-resolution surface reconstruction using optically measured Gabor expansion coefficients." Opt. Eng. Vol. 36, pp. 2068-2073, (1997).

27. L. Singher, Y. Segal and J. Shamir, "The interaction of a guided wave with a non-uniform adhesion bond" Ultrasonics, Vol. 35, pp. 385-391, (1997).

28. J. Shamir, "Adaptive pattern recognition correlators" Opt. Eng. Vol. 36, pp. 2675-2689, (1997)— **INVITED**.

29. M. Friedmann and J. Shamir, "Resolution enhancement by extrapolation of the optically measured spectrum of surface profiles," Appl. Opt. Vol. 36, pp. 1747-1751, (1997).

30. D. Caspi, N. Kiryati and J. Shamir, "Range imaging with adaptive color structured sight," IEEE Trans. on Patt. Anal. Mach. Intel. Vol. 20, pp. 470-480, (1998).

31. R. Piestun, B. Spektor and J. Shamir, "Pattern generation with extended focal depth" Appl. Opt. Vol. 37, pp. 5394-5398, (1998).

32. T. Kotzer, N. Cohen and J. Shamir, "Generalized projection algorithms with applications to optics and signal restoration". (EE Pub. 900) Opt. Comm. Vol. 156, pp. 77-91, (1998)

33. R. Piestun, and J. Shamir, "Generalized Propagation Invariant Wave-Fields" J. Opt. Soc. Am. A, Vol. 15, pp. 3039-3044, (1998).

34. R. Piestun and J. Shamir "Seeking for new propagation invariant wave-fields" Opt. Phot. News, Vol. 9, No. 12, pp. 39-40, (1998)

35. D. Lyszyk and J. Shamir, "Signal Processing under Uncertain Conditions by Parallel Projections onto Fuzzy Sets," JOSA A Vol. 16, pp. 1602 - 1611, (1999).

36. V. Lyubin, M. Klebanov, L. Shapiro, M. Lisiansky, B. Spektor and J. Shamir, "Peculiarities of photorefraction effects in thick glassy As_2S_3 films" J. Optoelectronics and Advanced Materials, Vol. 1, No. 3, pp. 31-35, (Sept. 1999).

37. Y. Y. Schechner, J. Shamir and N. Kiryati, "Vision through semi-reflecting media: Polarization analysis" (CC Pub. 280, May 1999) Opt. Lett. Vol. 24, pp. 1088-1090, (1999).

38. J. Shamir, "Hybrid electro-optic classification of objects", Asian Journal of Physics Vol. 8, No.3, pp. 253-263, (1999) — **INVITED**.

39. Y. Y. Schechner, J. Shamir and N. Kiryati, "Polarization and statistical analysis of scenes containing a semi-reflector" JOSA A, Vol. 17, pp. 276-284, (2000).

40. R. Piestun, Y. Y. Schechner, J. Shamir, "Propagation invariant wave-fields with finite energy" JOSA A, Vol. 17, pp. 294-303, (2000).

41. B. Spektor, M. Lisiansky, J. Shamir, M. Klebanov and V. Lyubin, "Linear holographic recording at 514 nm in amorphous As_2S_3," Appl. Phys. Lett. Vol. 76, pp. 798-800, (2000).

42. B. Spektor, M. Lisiansky, J. Shamir, M. Klebanov and V. Lyubin, "On the linearity of holographic recording in amorphous As_2S_3 films" J. Appl. Phys. Vol. 87, pp. 3234-3239, (2000).

43. Joseph Shamir, "Reconsidering the concepts of (optical) computing ", International Journal of Optical Memory & Neural Networks, Vol. 10, pp. 1-11, (2001).

44. Y. Censor, N. Cohen, T. Kutscher (Kotzer) and J. Shamir. "Summed squared distance error reduction by simultaneous multiprojections and applications" Applied Mathematics and Computation, Vol. 126, pp. 157-179, (2002). (Also, EE Publ. 909, Aug. 1994).

45. R. Piestun and J. Shamir, "Synthesis of three-dimensional light-fields and applications" Proc. IEEE, Vol. 90(2), 220-244, (2002) — **INVITED**.

46. J. Shamir, "On partially absorbing layers and interference, J. Mod. Opt. Vol. 49(9), pp. 1419-1422, June (2002)

47. J. Shamir and K. Wagner, "Generalized Bragg effect in volume holography" Appl. Opt. Vol. 41 (32), pp. 6773-6785 (2002)

48. B. Spektor, J. Shamir, V. Lyubin and M. Klebanov, "Recording on As_2S_3 glassy films by pulsed and continuous illumination — optical evaluation and comparison" Opt. Eng. Vol. 42(11), pp. 32793284, (2003)

49. G. Niederer, H.-P. Herzig, J. Shamir, H. Thiele, M. Schnieper and C. Zschokke, "Tunable, oblique incidence resonant grating filter for telecom" Appl. Opt. **43**(8), 1683-1694, (2004)

50. Y. Parkhomenko, B. Spektor and J. Shamir "Two regions of mode selection in resonators with bi-prism-like elements" Appl. Opt. Vol. 44(13), pp. 2546-2552, (2005).

51. J. Shamir, "Analysis of volume holographic storage allowing large-angle illumination," JOSA B, Volume 22, Issue 5, 975-986 May 2005

In Press

52. J. Shamir, R. Piestun and B. Spektor, "Three-dimensional wave-field engineering" OWLS 2000 proceedings (Sydney).

53. Y. Parkhomenko, B. Spektor and J. Shamir, "Laser mode selection by combining a bi-prism-like reflectors with a narrow amplitude masks" Appl. Opt.

Publications in Refereed Conference Proceedings:

1. J. Shamir, "Teaching Fourier optics for engineers," Proc. ICO Conference on Education and Training in Optics, pp. 47-56, August 16-19, 1993, Pecs, Hungary. Also: Proc. SPIE Vol. 2525, pp. 689-698 (1995) — **INVITED**.

2. R. Piestun, B. Spektor and J. Shamir, "Three dimensional distribution of light generated by a diffractive element." The International Conference on Optical Computing, OC'94, Edinburgh, Aug. 22-25, 1994, Inst. Phys. Conf. Ser. No. 139, Part II pp. 275-278, (1995).

3. E. Silvera, T. Kotzer and J. Shamir, "Rotation scale and shift invariant real time pattern recognition." The International Conference on Optical Computing, OC'94, Edinburgh, Aug. 22-25, 1994. Inst. Phys. Conf. Ser. No. 139, Part III pp. 301-304, (1995).

4. T. Kotzer, N. Cohen, J. Shamir and Y. Censor, "Multi-distance, multi-projection parallel projection method." The International Conference on Optical Computing, OC'94, Edinburgh, Aug. 22-25, 1994. Inst. Phys. Conf. Ser. No. 139, Part III pp. 377-380, (1995).

5. B. Spektor and J. Shamir "Fresnel lens arrays for wave front inspection." Proc. SPIE Vol. 2404: Photonics West, Optoelectronic and Micro-Optical Devices. pp. 166-172, Feb. 4-10, 1995, San Jose.

6. R. Piestun, B. Spektor and J. Shamir "Diffractive Optics for Unconventional Light Distributions." Proc. SPIE Vol. 2404: Photonics West, Optoelectronic and Micro-Optical Devices. pp. 320-326; Feb. 4-10, 1995, San Jose.

7. B. Spektor and J. Shamir, "Interferometry with diffractive optics" Workshop on Diffractive Optics Tech. Digest, p. 88, Prague, 20-13 August, 1995.

8. R. Piestun, B. Spektor and J. Shamir, "Unconventional Light Distributions in 3-D domains" Workshop on Diffractive Optics Tech. Digest, p. 63, Prague, 20-13 August, 1995.

9. M. Friedmann, T. Kotzer and J. Shamir, "High quality surface measurements using the Gabor expansion" Photonics West, San Jose, Feb. 1996. Proc. SPIE Vol. 2651, pp. 117–125.

10. M. Friedmann and J. Shamir, "Optical Gabor transforms for surface reconstruction" ICO 17, Taejon, Korea, Aug. 19-23, (1996).

11. R. Piestun, Y. Y. Schechner, and J. Shamir, "Self-imaging with finite effective apertures", ICO 17, Taejon, Korea, Aug. 19-23, (1996).

12. M. Friedmann, R. Piestun, E. Paquet and J. Shamir. "Surface analysis using multiple coherent beams," The Nineteenth Convention of Electrical and Electronics Engineers in Israel, IEEE Proceedings, 537-540, November 1996.

13. H. J. Caulfield, and J. Shamir, "Holography of world lines," Proc. SPIE Vol. 2866, International Conference on Holography and Optical Information Processing (ICHOIP '96), Guoguang Mu; Guofan Jin; Glenn T. Sincerbox; Eds., pp. 154-159, (1996).

14. M. Friedman and J. Shamir, "Surface feature investigation using the optical sliding window spectrum" Proc. SPIE Vol. (in print) The 10th Meeting on Optical Engineering in Israel, March 2-6, 1997, Jerusalem.

15. J. Shamir, R. Piestun and B. Spektor,"3D light structuring and some applications," *Optics and Optoelectronics: Theory, Devices and Applications*, O.P. Nijhawan, A.K. Gupta, A.K. Musla and K. Singh, Eds., Narosa Publishing House, New Delhi, 1998, pp. 238-244. — **INVITED**

16. Y. Y. Schechner, N. Kiryati and J. Shamir"Separation of Transparent Layers by Polarization Analysis" in Proc. 11th Scandinavian Conference on Image Analysis (SCIA'99), pp. 235-242, B.K. Ersboll and P. Johansen, Ed., June 7-11, 1999, Kangerlussuaq, Greenland.

17. J. Shamir, R. Piestun and Y. Y. Schechner, "Propagation-invariance and 3D light fields" (ICO 18, *Optics for the Next Millennium*, pp. 108-109, August 1999, San Francisco) — **Invited**

18. M. Lisiansky, B. Spektor, J. Shamir, M. Klebanov and V. Lyubin, "Linear recordig in amorphous As_2S_3 films." Annals of the Israel Physical Society, **14**, pp. 142-145, (Proc. Int. Meeting on Electro-Optics and Microelectronics in Israel, Tel-Aviv, Novemeber 9-11) 1999.

19. Y. Y. Schechner, J. Shamir and N. Kiryati, "Polarization-based decorrelation of transparent Layers: The inclination angle of an invisible surface." Proc. IEEE ICCV, pp. 814-819, (1999).

20. J. Shamir, "Optics in computing, - 40 year later", *Critical Technologies for the Future of Computing*, Proc. SPIE Vol. 4109, San Diego, 30 July - 4 August 2000. — **Invited** paper 4109-05

21. Y. Y. Schechner, N. Kiryati and J. Shamir, "Blind recovery of transparent and semireflected scenes", IEEE Computer Society Conference on Coputer Vision and Pattern Recognition (CVPR) Vol. 1, pp. 38-43, South Carolina, June 2000.

22. Y. Y. Schechner, N. Kiryati and J. Shamir, "Multi-Valued Images and their Separation", in Multi-Image Analysis, 10th International Workshop on Theoretical Foundations of Computer Vision, Dagstuhl Castle, Germany, March 12-17, 2000, R. Klette, T. Huang, G. Gimel'farb (Eds.) LNCS 2032, pp. 129-141, (2001) Springer-Verlag, Berlin Heidelberg, 2001. (http://link.springer.de/link/service/series/0558/tocs/t2032.htm)

23. G. Toker, A. Brunfeld, J. Shamir, and B. Spektor, "In-line optical surface roughness determination by laser scanning," Proc. SPIE Vol. 4777, *Interferometry XI: techniques and analysis*, pp. 323-329, (July 2002) – **INVITED**.

24. B. Spektor, G. Toker, J. Shamir, M. Friedman and A. Brunfeld "High-resolution surface evaluation using multi-wavelength optical transforms", Proc. SPIE Vol. 4777, *Interferometry XI: techniques and analysis*, pp. 345-351, (July 2002).

25. J. Shamir and K. Wagner, "New look at volume holography," Proc. SPIE vol. 4737, *Holography: A tribute to Yuri Denisyuk and Emmett Leith*, pp. 64-76, (April 2002).

26. B. Spektor, Y. Parkhomenko and J. Shamir, "Intracavity beam shaping for nanoscale surface metrology," Proc. SPIE VOl. 5144, *Optical Measurement Systems for Industrial Inspection III*, pp. 17-25, (June, 2003).

27. A. Tavrov, N. Kerwien, R. Berger und H. Tiziani, B. Spektor und J. Shamir and G. Toker, "Vector simulations of dark-beam interaction with nanoscale surface features." Proc. SPIE Vol. 5144, *Optical Measurement Systems for Industrial Inspection III*, pp. 26-36, (June, 2003).

28. B. Spektor, J. Shamir and Y. Parkhomenko "Optical Wave Engineering for nano-scale surface metrology," Proc. SPIE Vol. 5182, *Wave-Optical Systems Engineering II* pp. 197-205, August 2003, San Diego— **INVITED**.

29. B. Spektor, Y. Parkhomenko and J. Shamir, "Bi-prism-like optical elements in intra-cavity mode selection" Proc. SPIE 5525, paper 18 OPTICAL SCIENCE AND TECHNOLOGY, SPIE'S 49TH ANNUAL MEETING, Denver. 2 - 6 August, 2004

30. J. Shamir, "Volume holographic recording of narrow-band information," Proc. SPIE Vol. 6252, Holography '05 — International Conference on Holography, Optical Recording and Processing of Information, May 21-25, Varna, Bulgaria 2005 — **Invited**.

31. Y. Parkhomenko, B. Spektor, J. Shamir, "Improving the mode selection of bi-prism-like reflectors with intracavity amplitude masks" Proc. SPIE Vol. 5876, pp. 221-226, *50th annual meeting*, San Diego, July 31-Aug. 4, 2005.

Book:

J. Shamir, *Optical Systems and Processes*, SPIE Press, Bellingham, 1999. Reprinted by Prentice-Hall India, 2004.

Book Chapters:

1. J. Shamir, "Signal processing and storage using hybrid electro-optical procedures", in *Trends in Optics – ICO Vol. 3* A., Consortini Ed., pp. 237-262, Academic Press, London, (1996)

2. J. Shamir, "Iterative procedures in electrooptical pattern recognition," in *Optical Pattern Recognition*, F.T.S. Yu, Ed., pp. 221-261, Cambridge University Press, Cambridge, UK, (1998).

3. H. J. Caulfield, J. Ludman and J. Shamir, "Fuzzy metrology" in *Fuzzy Theory Systems: Techniques and Applications* Vol. 2, C. T. Leondes, Ed., pp. 747-758, Academic Press, San Diego, (1999).

4. J. Shamir, "Storage of 3D information on 2D diffractive elements," in *Unconventional optical elements for information storage, processing and communications*, N. A. Vainos, Ed., pp. 29-37, Kluver Academic Publishers, Netherlands, 2000.

5. H. J. Caulfield and J. Shamir, "Holograms of real and virtual point trajectories" in *Three-Dimensional Holographic Imaging*, C. J. Kuo and M. H. Tsai, Eds., pp. 5-19, John Willey & Sons, New York 2002.

6. J. Shamir and R. Piestun, "Sculpturing of three-dimensional light-fields by iterative optimization" in *Holography for the next millennium*, J. Ludman, H. J. Caulfield and J. Riccobono Eds., pp. 121-153, Springer, New York, 2002
7. J. Shamir, "On beam splitters, beam combiners, phases, interference and energy," *Perspectives in Modern Optics, Photonics and Optical Instrumentation*, pp. 156-162, January 2002, New Delhi
8. J. Shamir, "Fourier Optics" in *Dekker Encyclopedia of Optical Engineering*, 2003
9. J. Shamir, "Holograms of Volumes and Volume Holograms" in *The Art and Science of Holography: A Tribute to Emmett Leith and Yuri Denisyuk*, H. J. Caulfield Ed., Chapt 14, pp. 239-260, SPIE press PM124, Bellingham, 2004.

Conference Presentations:

Display Manufacturing Technology Conference, Jan. 31-Feb. 2, 1995, Santa Clara:

1. G. Toker, A. Brunfeld and J. Shamir, "High resolution inspection for in-line surface testing."

Photonics West, Optoelectronic and Micro-Optical Devices. Feb. 4-10, 1995, San Jose:

2. B. Spektor and J. Shamir "Fresnel lens arrays for wave front inspection."
3. R. Piestun, B. Spektor and J. Shamir "Diffractive Optics for Unconventional Light Distributions."

Workshop on Diffractive Optics, Prague, 20-13 August, 1995:

4. B. Spektor and J. Shamir, "Interferometry with diffractive optics"
5. R. Piestun, B. Spektor and J. Shamir, "Unconventional Light Distributions in 3-D domains"

OSA Annual Meeting 1995. Portland, Oregon, Sept. 10-15, 1995:

6. R. Piestun, B. Spektor and J. Shamir "On-Axis Binary-Amplitude Computer Generated Holograms"
7. B. Spektor, R. Piestun and J. Shamir "Dark beams: Generation and Applications"
8. Y. J. Schechner and J. Shamir, "Orbital angular momentum of anisotropic dislocations"

AFIRST workshop, Feb. 12-13, 1996, Paris:

9. J. Shamir, "High Speed Optically Addressed Smectic Liquid Crystal Spatial Light Modulators and Applications."

Photonics West, San Jose, Jan. 29-Feb. 2, 1996:

10. M. Friedman, T. Kotzer and J. Shamir, "High quality surface measurements using the Gabor expansion".

ICHOIP'96, Nanjing, China, 26-28 August 1996

11. H. J. Caulfield and J. Shamir, "Holography of world lines." — **INVITED**

CLEO/Europe'96, Hamburg, Sept. 8-13, 1996.

12. M. Friedmann, E. Paquet and J. Shamir, "Surface feature reconstruction using scanning beams."
13. R. Piestun, I. Zaoui, E. Tamir, B. Spektor and J. Shamir, "On-line synthesis of diffractive elements by optical-computer feedback."

2nd Binational German-Israel Symposium on Optical Signal Processing, Jena, Germany, 7-8 October, 1996

14. J. Shamir, "3-D distributions of light and applications." — **INVITED**

19th IEEE Convention in Israel, Jerusalem, Nov. 5-6, 1996

15. M. Friedmann, R. Piestun, E. Paquet and J. Shamir. "Surface analysis using multiple coherent beams,"

The First Annual Meeting in Israel of URSI, Tel-Aviv, Dec. 11-12, 1996.

16. J. Shamir, "Light structuring with applications to nanotechnology" URSI Workshop on Electromagnetic Metrology and Nanotechnology,"— **INVITED**

AFIRST workshop, Feb. 23-25, 1997, Dead Sea.

17. J. Shamir, "Application of structured light for high resolution surface feature analysis"

10th Meeting on Optical Engineering, 2-6 March 1997, Jerusalem, Israel

18. K. Rabinovich, R. Dahan, G. Toker, L. Singher and J. Shamir, "Fast scanning ellipsometer for thin film thickness inspection"

19. M. Friedman and J. Shamir, "Surface feature investigation using the optical sliding window spectrum"

2nd International Austrian-Israeli Technion Symposium cum Industrial Forum, 4-6 June 1997, Graz, Austria.— **INVITED**

20. M. Friedmann, R. Piestun and J. Shamir, "3D Light Structures Applied for Surface Analysis,"

2nd Status Workshop on Non-Conventional Optics, Jerusalem, June 9, 1997

21. J. Shamir and B. Spektor, "3-D Light structures and applications in high resolution metrology and lithography."

22. R. Piestun, B. Spektor and J. Shamir, "Diffractive Optics for the generation of light structures with extended focal depth."

European Optical Society TOPICAL MEETING ON DIFFRACTIVE OPTICS — DO-97, July 7-9, 1997, Savonlinna, Finland

23. R. Piestun, B. Spektor and J. Shamir "Diffractive Optics for the generation of light structures with extended focal depth,"

24. R. Piestun, M. Friedmann, B. Spektor and J. Shamir "Diffractive Elements for Surface Investigation with Light Structures,"

25. B. Wesskamp, O. Bryngdahl, R. Piestun and J. Shamir, "Computer-based generation of on-axis near-field holograms for 3-D display,"

26. R. Piestun, Y. Y. Schechner and J. Shamir "Generalized Self-Imaging in Free Space,"

OSA Annual Meeting, Long Beach, October 12-17, 1997.

27. M. Friedmann, R. Piestun and J. Shamir, "Mutibeam analyzis of surface features below diffraction limit,"

28. R. Piestun, Y. Y. Schechner and J. Shamir, "Rotating Waves and the Generalized Self-Imaging Effect,"

29. B. Spektor, R. Piestun and J. Shamir, "Precision 3D pattern generation by diffractive optics,"

ISPRS Workshop: Theoretical and Practical Aspects of Surface Reconstruction and 3-D Object Extraction September 9-11, 1997, Technion - Israel Institute of Technology, Haifa, Israel

30. D. Caspi, N. Kiryati and J. Shamir, "Adaptive Color Structured Light."

NATO-Mediterranean Dialogue Advanced Research Workshop on Unconventional Optical Elements for Information Storage, Processing and Communications October 19-21, 1998, Kiryat Anavim, Israel.

31. J. Shamir, "Storage of 3D information on 2D diffractive elements."

MVA'98 Conference, Tokyo 17-19 November 1998.

32. D. Caspi, N. Kiryati and J. Shamir, "Adaptive Color Structured Light"

AGIL '98 - The Second Conference on Material Science and Technologies, Ramat Gan, November 25-26, 1998

33. B. Spektor, M. Lisiansky, J. Shamir, A. Arsh, M. Klebanov and V. Lyubin, "Diffraction gratings recording in films of chalcogenide glassy semiconductors."

OII'98 ICO Topical Meeting, Aug. 3-6, 1998, Tianjin, China

34. J. Shamir, R. Piestun and B. Spektor, "Light patterning in 3D space and applications," — **INVITED**

International Conference on Optics & Optoelectronics, ICOL-98, Dec. 9-12, 1998, Dehra Dun, India

35. J. Shamir, R. Piestun and B. Spektor,"3D light structuring and some applications" — **INVITED**

11th Scandinavian Conference on Image Analysis (SCIA'99), June 7-11, 1999, Kangerlussuaq, Greenland

36. Y. Y. Schechner, N. Kiryati and J. Shamir"Separation of Transparent Layers by Polarization Analysis" .

ICO 18-Optics for the Next Millennium, August 1999, San Francisco

37. J. Shamir, R. Piestun and Y. Y. Schechner, "Propagation-invariance and 3D light fields" — **INVITED**

DO'99, Jena, August 1999

38. B. Spektor and J. Shamir, "Split-phase diffractive optical elements: design and fabrication".

ICCV, Corfu, Sept. 1999.

39. Y. Y. Schechner, J. Shamir and N. Kiryati, "Polarization-based decorrelation of transparent Layers: The inclination angle of an invisible surface."

OSA 1999 Annual Meeting/ILS-XV, September 26-30, 1999, Santa Clara

40. B. Spektor and J. Shamir, "Optical lithography on three-dimensional surfaces" (WW3).

41. B. Spektor, J. Shamir Y. Nemirovsky, M. Klebanov and V. Lyubin "Implementation of optical lithography on three-dimensional surfaces" (Tuxx5).

Conference on Optical Engineering, Tel-Aviv, Novemeber 9-11, 1999

42. M. Lisiansky, B. Spektor, J. Shamir, M. Klebanov and V. Lyubin, "Linear recordig in amorphous As_2S_3 films."

43. B. Spektor, M. Klebanov, V. Lyubin and J. Shamir, "Single pulse (¡ 10 ns) optical recording in As-S glassy films,"

44. B. Spektor, J. Shamir, M. Klebanov, and V. Lyubin, "All-opical modeling of diffractive phase elements,"

45. B. Spektor, J. Shamir, A. G. Poleshchuk, V. P. Korolkov, V. V. Chrkashin, "Israeli-Russian joint project for optical 2-D and 3-D submicron structuring"

LEOS'99, San Francisco, November 8-11, 1999.

46. J. Shamir and B. Spektor, "An alternative approach to the design and fabrication of diffractive optical elements," TuF 0005.

Photonics West, Optoelectronics 2000, Jan. 22-28, 2000, San Jose.

47. B. Spektor, M. Lisiansky, J. Shamir, M. Klebanov and V. Lyubin, "Chalcogenide glassy films as linear phase recording materials" (3951-09)

48. B. Spektor, V. Lyubin, M. Klebanov and J. Shamir, "Enhanced photosensitivity of As-S glassy films by short pulse (¡10 ns) optical recording," (3951-08).

Optics Within Life Sciences - OWLS VI, 22-24 February 2000, Sydney Australia

49. J. Shamir, "3D light structuring and some applications" — **INVITED**

Dagstuhl Workshop on Theoretical Foundations of Computer Vision (2000), March 2000, Germany.

50. Y. Y. Schechner, N. Kiryati and J. Shamir, "Multi-Valued Images and Their Separation"

IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR) June 2000, South Carolina

51. Y. Y. Schechner, N. Kiryati and J. Shamir, "Blind recovery of transparent and semireflected scenes",

Critical Technologies for the Future of Computing, SPIE's International Symposium on Optical Science and Technology in San Diego next summer (co-sponsored by Electronic Engineering Times) 30 July - 4 August 2000

52. J. Shamir, "Optics in computing, - 40 year later" (paper 4109-05) — **INVITED**

2nd International Photonics Conference IPC 2000, December 12-15, 2000 National Chiao Tung University, Hsinchu, Taiwan ROC

53. J. Shamir, "Considerations of analog-digital, optical-electronic signal processing", — **INVITED**.

Lasers 2001 (paper FC 6), Tucson, December 3-7, 2001

54. B. Spektor and J. Shamir, "Unconventional optical elements"

Holography: A tribute to Yuri Denisyuk and Emmett Leith, within AeroSense - SPIE's Annual International Symposium, Orlando, April 1-5, 2002.

55. J. Shamir and K. Wagner, "New view on volume holograms" — **INVITED**

Interferometry XI: techniques and analysis, Seattle, 8-10 July 2002.

56. G. Toker, A. Brunfeld, J. Shamir, and B. Spektor "In-line optical surface roughness determination by laser scanning" – **INVITED**.

57. B. Spektor, G. Toker, J. Shamir, M. Friedman and A. Brunfeld "High-resolution surface evaluation using multi-wavelength optical transforms".

7th International Symposium on Laser Metrology - LM 2002, Novosibirsk, Russia, 9-13 September , 2002.

58. Boris Spektor and Joseph Shamir, "A new optical method for sub-wavelength surface feature evaluation"

Optical Measurement Systems for Industrial Inspection III, Munich, 23-26 June, 2003.

59. A. Tavrov, N. Kerwien, R. Berger und H. Tiziani, B. Spektor und J. Shamir and G. Toker, "Sub-micron images by Dark-Beam microscopy: evaluation of resolution and polarization effects,"

60. Boris Spektor, Yurij Parkhomenko and Joseph Shamir "Analysis of intracavity beam shaping for scanning beam microscopy."

Wave-Optical Systems Engineering II, August 2003, San Diego.

61. B. Spektor, J. Shamir and Y. Parkhomenko "Optical Wave Engineering for nano-scale surface metrology," — **INVITED**.

European Optical Society Topical Meeting on Advanced Imaging Techniques, Delft, The Netherlands, 20-23 October 2003.

62. B. Spektor and J. Shamir, "Dark (singular) beam scanning microscopy, — a new approach to sub-wavelength imaging."

Optical Science and Technology, SPIE'S 49th Annual Meeting, Denver, 2 - 6 August 2004.

63. B. Spektor, Y. Parkhomenko and J. Shamir, "Bi-prism-like optical elements in intra-cavity mode selection"

International Conference on Holography, Optical Recording and Processing of Information May 21-25, Varna, Bulgaria 2005

64. J. Shamir, "Volume holographic recording of narrow-band information," — **Invited**.

50th Annual Meeting of the SPIE, San Diego, July 31-Aug. 4, 2005

65. Y. Parkhomenko, B. Spektor, J. Shamir, "Improving the mode selection of bi-prism-like reflectors with intracavity amplitude masks" paper 5876-26.