

Ibrahim Abdulhalim

CURRICULUM VITAE AND LIST OF PUBLICATIONS

1. Personal Details

Name: **Ibrahim Abdulhalim**

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Department of Electrooptic Engineering

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2. Education

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|-------|-----------|---|
| B.Sc. | 1977-1981 | Physics Department – Technion, Israel Institute of Technology, Haifa, Israel. |
| TD | 1981-1982 | Teaching Diploma in Physics from the Division of Science and Technology Teaching - Technion-Israel Institute of Technology, Haifa, Israel. |
| M.Sc. | 1982-1985 | Physics Department - Technion-Israel Institute of Technology, Haifa, Israel.
Name of advisors: Prof. Raoul Weil and Prof. Lucian Benguigui.
Title of thesis: Optical properties of chiral liquid crystals in their SmC phase. |
| D.Sc. | 1985-1988 | Physics Department – Technion, Israel Institute of Technology, Haifa, Israel.
Name of advisors: Prof. Raoul Weil and Prof. Robert Beserman
Title of thesis: CW laser induced structural instabilities in amorphous materials. |

3. Employment History

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| 4/010 - present | Professor, Department of Electrooptics Engineering, Ben-Gurion University, Israel. |
| 8/2007 – present | Head of the Department of the Electrooptic Engineering, Ben Gurion University, Israel. |
| 10/05 – 3/010 | Associate Professor, Department of Electrooptics Engineering, Ben-Gurion University, Israel. |
| 02/05 - 10/05 | Chief Physicist in Nova-Measuring Instruments, Rehovot, Israel. |
| 07/01 - 11/04 | Principal Scientist and Liquid Crystals manager in GWS-Photonics, Israel. |
| 07/00 - 07/01 | Lecturer and Researcher within the Dept. of Electronics and Physics – Thin Film Centre, University of Western Scotland, Paisley, Scotland. |
| 12/93 - 07/00 | Senior Physicist within the Optics Group - KLA-Tencor Corporation – Israel. |
| 07/91 - 08/93 | Research Fellow in the Optoelectronics Research Center - Optical Fibre Group, University of Southampton, Southampton, U.K. |
| 09/88 - 05/91 | Research Associate in the Optoelectronic Computing Systems Center, University of Colorado at Boulder, Co, USA. |
| 1982 - 1988 | Teaching and Research Assistant in the Department of Physics, Technion. |
| Summer 1980 | Students exchange fellow - FIR Lasers Laboratory, PTB, Braunschweig, Germany. |

4. Professional Activities

(a) Positions in academic administration at BGUN.

08/2007 - present Head of the Department of Electrooptics Engineering, Ben-Gurion University, Israel

(b) Professional functions outside universities/ institutions.

1. Associate editor of the SPIE Journal of NanoPhotonics, since September 2006.
2. Associate editor of the Journal of Physics Express, since 2010.
3. Guest co-editor of special issue of the Journal of Nano-Photonics including selected papers from the Mediterranean Nano-photonics Conferences, Running since 2007.
4. Member of the program committee for the conference: "Nanostructured thin films" within the SPIE meeting in Optics and Photonics, San Diego, August 2008.
5. Session chair within the conference: "Nanostructured thin films" within the SPIE meeting in Optics and Photonics, San Diego, August 2008.
6. Co-organizer of the 1st Mediterranean Conference on Nano-Photonics MediNano-1, Istanbul, Turkey, October 2008.
7. Session chair within the 1st Mediterranean Conference on Nano-Photonics MediNano-1, Istanbul, Turkey, October 2008.
8. Co-editor of special issue of the Journal of Nano-Photonics including selected papers from 1st Mediterranean Conference on Nano-Photonics MediNano-1, Istanbul, Turkey, October 2008.
9. Organizer and chair of session on: "Anisotropies and liquid crystals optics" within PIERS 26th conference, Moscow, August 18-21, 2009.
10. Member of the organizing committee of OASIS 2011 and session chair of the session on: "Light Modulators and their Applications", Tel Aviv, March 2011.
11. Organizer and chair of session on: "Anisotropic media and liquid crystals optics" within PIERS 29th conference, Marrakesh, March 2011.
12. Session chair and Member of the international advisory board committee for the liquid crystals science and technology (LCST) conference in ChangZhou, China, July 17-20, 2011.
13. Session chair for the "Optical Imaging" session within the European Optical Society Meeting in Capri, Italy, September 26-28th, 2011.

(c) Courses taught.

Present:

1. Optical properties of biomaterials – graduate.
2. Eye and vision optics – graduate.
3. Biomedical optical instrumentation – graduate.
4. Introduction to Optical Engineering – undergraduate and graduate.

Other courses taught in the past:

5. Solid state physics – undergraduate (University of Western Scotland, 2000-2001).

6. Advanced physics lab – undergraduate (University of Western Scotland, 2000-2001).
7. Microelectronics technology – undergraduate (University of Western Scotland, 2000-2001).
8. Vacuum science and thin films technology – graduate (University of Western Scotland, 2000-2001).
9. Scanning microscopy – undergraduate (University of Western Scotland, 2000-2001).

Teaching assistant in the following courses:

10. Basic and advanced physics labs – undergraduate (Physics Department, Technion, 1982-1988).
11. Optics - undergraduate (Physics Department, Technion, 1985-1988).
12. Physics 1 - Classical mechanics - undergraduate (Physics Department, Technion, 1982-1988).
13. Physics 2 – Electricity and Magnetism - undergraduate (Physics Department, Technion, 1982-1988).
14. Thermodynamics and statistical physics - undergraduate (Physics Department, Technion, 1982-1988).

(d) Memberships in professional/scientific societies.

- 1988 - present Member of the Optical Society of America - OSA.
- 1998 - 11/2010 Member of the International Society of Optical Engineering – SPIE.
- 12/010 - present **Fellow** of the International Society of Optical Engineering – SPIE.
- 1988 - 2004 Member of the International Liquid Crystals Society – (ILCS).
- 1988 - 06/2004 Member of the Institute of Physics, UK – (IoP).
- 6/2004 - present **Fellow** of the Institute of Physics, UK – (IoP).

5. Awards, Honors, Research Fellowships

1. The Wolf Foundation Award, 1986, given for excellence in M.Sc research.
2. The Gutwirth Foundation Award, 1986, given for excellent D.Sc. students.
3. Fellow of the Institute of Physics, June 2004.
4. Fellow of SPIE, December 2010.

6. Scientific Publications

(a) Books:

1. Z. Zalevsky and **I. Abdulhalim**, Integrated Nanophotonic Devices (Micro and Nano Technologies), Publisher: William Andrew-Elsevier, (2010), ISBN 1437778488.
2. R. Marks and **I. Abdulhalim**, Editors, “Nanomaterials for Water Management: Signal Amplification for Biosensing from Nanostructures”, Pan Stanford Publishing, in preparation 2012.

(b) Chapters in books:

1. **I. Abdulhalim**, M. Zourob, A. Lakhtakia, Overview of optical biosensing techniques, Invited chapter in the Handbook of Biosensing and Biochips, edited by R. S. Marks, C. R. Lowe, D. C. Cullen, , H.H. Weetall and I. Karube, John Wiley and Sons, 2007, pages 413-446, ISBN978-0-470-01905-4.
2. **I. Abdulhalim**, Biosensing configurations using guided wave resonant structures, in NATO Science for Peace and Security Series B: Physics and Biophysics, Optical waveguide sensing and imaging, Ch.9, pp. 211-228, Editors: Wojtek J. Bock, Israel Gannot and Stoyan Tanev, Springer-Verlag , Amsterdam, Netherlands , Dec. 2008. DOI:10.1007/978-1-4020-6952-9_9.
3. **I. Abdulhalim**, Nanophotonic and subwavelength structures for sensing and biosensing, Chapter 4, in: M. Zourob and A. Lakhtakia (eds.), Optical Guided-wave Chemical and Biosensors II, Springer series on Chemical Sensors and Biosensors 8, DOI 10.1007/978-3-642-02827-4_4, Springer-Verlag Berlin Heidelberg 2010.
4. **I. Abdulhalim**, Nanoplasmonics, Chapter in "A synthesis of recent advances in nanotechnology," Editor: Zeev Zalevsky, KTI International Publications, 2011, in press.
5. **I. Abdulhalim**, Enhanced spectroscopies and surface plasmon thin film sensors, Chapter in a book following a summer school in Heidelberg titled: Plasmonics, Functionalization and Biosensing, Ed. Marc Lamy de la Chapelle and Annemarie Pucci, Pan Stanford Publishing, 2011. in press.
6. **I. Abdulhalim**, Coherence effects in full field optical coherence tomography, Chapter in a book titled: "Handbook of Optical Coherence Microscopy: technology and application," Editor: Arnaud Dubois, Pan Stanford Publications, 2012, in press.

(c) Refereed articles in scientific journals

1. R. Marx, U. Hubner, **I. Abdulhalim**, J. Heppner, Yu-Cai-Ni, G. Willenberg, C.O. Weiss, - Far Infrared CW Raman and Laser Gain of $^{14}\text{NH}_3$, IEEE J. Quant. Elec., QE17, 6, 1123 (1981).
2. **I. Abdulhalim**, L. Benguigui, R. Weil, - Selective Reflection by Helicoidal Liquid Crystals: Results of an Exact Calculations using the 4 x 4 Characteristic Matrix Method, J. De Phys., 46, 815 (1985).
3. **I. Abdulhalim**, L. Benguigui, R. Weil, - Light Transmission Measurements in the Liquid Crystal SMC Phase of DOBAMBC at Normal Incidence, J. De Phys., 46, 1429 (1985).
4. R. Weil, **I. Abdulhalim**, R. Beserman, M. Janai, B. Pratt, - Comparison of Strain in Glow Discharge a-Si:F and a-Si:H, J. Non. Crys. Solids, Vol. 77, p. 261 (1985).
5. **I. Abdulhalim**, R. Weil, L. Benguigui, - Dispersion and Attenuation of the Eigenwaves for Light Propagation in Helicoidal Liquid Crystals, Liq. Crys., Vol. 1, No. 2, 155 (1986).
6. **I. Abdulhalim**, R. Beserman, Yu. L. Khait, - Light Induced Structural Changes in Amorphous Semiconductors, J. Non. Crys. Solids, Vol. 97 and 98, 387 (1987).
7. **I. Abdulhalim**, R. Beserman, - Raman Scattering Study of Light Induced Structural Transformations in Glassy As_2Se_3 , Sol. Stat. Commun. Vol. 64, No. 6, 951 (1987).
8. **I. Abdulhalim**, - Light Propagation Along the Helix of Chiral Smectics and Twisted Nematics, Opt. Commun., Vol. 64, No. 5, 443 (1987).
9. **I. Abdulhalim**, R. Beserman, Yu. L. Khait, - Laser Induced Oscillatory Instabilities in Amorphous Materials, Europhys. Lett., Vol. 4, No. 12, 1371 (1987).
10. **I. Abdulhalim**, R. Beserman, Yu. L. Khait, R. Weil, - Laser Induced Structural Instabilities in Amorphous Materials, Appl. Phys. Lett., Vol. 51, No. 23, 1898 (1987).

11. **I. Abdulhalim**, L. Benguigui, - Critical Angles for Light Propagation in Chiral Smectic Liquid Crystals, *Ferroelectrics*, Vol. 84, 273 (1988).
12. **I. Abdulhalim**, R. Beserman, R. Weil, - Structural Changes and Crystallization of Amorphous Hydrogenated Silicon Generated by Laser Irradiation, *Phys. Rev. B.* 39, 2, 1081 (1989).
13. **I. Abdulhalim**, R. Beserman, R. Weil, - Photodarkening, Structural Instabilities and Crystallization of glassy As₂Se₃ Induced by Laser Irradiation, *Phys. Rev. B.* 40, 12476 (1989).
14. **I. Abdulhalim**, G. Moddel, K.M. Johnson, - High Speed Analog Spatial Light Modulator using an a-Si:H Photosensor and an Electroclinic Liquid Crystal, *Appl. Phys. Lett.*, 55, no'16, 1603 (1989).
15. **I. Abdulhalim**, G. Moddel, K.M. Johnson, C.M. Walker, - Optically Addressed Electroclinic Liquid Crystal Spatial Light Modulator With an a-Si:H Photodiode, *J. Non. Cryst. Solids*, 115, 162 (1989).
16. R.A. Rice, G. Moddel, **I. Abdulhalim**, C.M. Walker, - A Three Terminal Spatial Light Modulator Optically Addressed by an a-Si:H Photosensor, *J. Non. Cryst. Solids*, 115, 96 (1989).
17. **I. Abdulhalim**, L. Benguigui, - Optics of Chiral Smectic Liquid Crystals Near Lifshitz Point, *Phys. Rev. A.*, 42, 2114 (1990).
18. **I. Abdulhalim**, - Dispersion Relations for the Refractive Indices and the Effective Birefringence of Liquid Crystals, *Mol. Crys. Liq. Cryst.*, 197, 103(1991).
19. **I. Abdulhalim**, G. Moddel, - Optically and Electrically Controlled Light Modulation and Color Switching using Helix Distorsion of Ferroelectric Liquid Crystals, *Mol. Cryst. Liq. Cryst.*, 200, 79(1991).
20. **I. Abdulhalim**, G. Moddel, - Switching Behavior and Electro-optic Response due to the Soft Mode Ferroelectric Effect in Chiral Smectic A Liquid Crystals, *Liq. Crys.*, 9 (4) 493 (1991).
21. **I. Abdulhalim**, G. Moddel, N.A. Clark, - Director - Polarization Reorientation via Solitary Waves in Ferroelectric Liquid Crystals, *Appl.Phys. Lett.*, 60, 551(1992).
22. **I. Abdulhalim**, - Strong Effect of the Interface Layers on the Electro-optic Response of Ferroelectric Liquid Crystals, *Europhys.Lett.*, 19, 91(1992).
23. **I. Abdulhalim**, C.N. Pannell, D.N. Payne, - Fibre Compatible fast Acousto-Optic Modulator using a Gradient Index Lens as the Interaction Medium, *Appl.Phys.Lett*, 62, 3402(1993).
24. **I. Abdulhalim**, C.N. Pannell, L. Reekie, K.P. Jdrzejewski, E.R. Taylor, D.N. Payne, - High Power, Short Pulse Acousto-Optically Q-Switched Fibre Laser, *Optics Commu.*, 99, 355 (1993).
25. **I. Abdulhalim**, C.N. Pannell, - Photoelastically Induced Light Modulation in Graded Index Lenses, *Opt.Lett.*, 18, 1274(1993).
26. **I. Abdulhalim**, C.N. Pannell, - Acousto-optic in Fibre Modulator using Acoustic Focusing, *IEEE Photon.Technol.Lett.*, 5, 999 (1993).
27. **I. Abdulhalim**, C.N. Pannell, - Photoelastic in-Fibre Birefringence Modulator Operating at the Fundamental Transverse Acoustic Resonance, *IEEE Photon.Technolo.Lett.*, 5, 1197 (1993).
28. **I. Abdulhalim**, R.S. Deol, C.N. Pannell, G. Wylangowski, D.N. Payne, - High Performance Acousto-Optic Chalcogenide Glass Based on Ga₂S₃-La₂S₃ Systems, *J.Non.Cryst.Solids*, 164-166, 1251 (1994).
29. **I. Abdulhalim**, - Continuous Phase-Only or Amplitude Light Modulation using Ferroelectric Liquid Crystals with Fixed Boundary Orientations, *Optic.Communi.*, 108, 219 (1994).

30. **I. Abdulhalim**, G. Moddel, N.A. Clark, - Soliton Switching in Ferroelectric Liquid Crystals and their Transient Electro-Optic Response, *J.Appl.Phys.*, 76, 820 (1994).
31. **I. Abdulhalim**, J.L. Archambault, L. Reekie, C.N. Pannell, P.StJ. Russell, Elasto-optically Induced Modulation of In-Fibre Grating, *IEEE Photon.Technol.Lett.*, 5, 1395 (1994).
32. **I. Abdulhalim**, C. N. Pannell, K.P. Jedrzejewski, E.R. Taylor, - Cavity Dumping of Neodymium Doped Fibre Lasers using Acousto-optic Modulator, *Optic.Quant.Electr.*, 26 (11), 997 (1994).
33. **I. Abdulhalim**, J. Wang, C.N. Pannell, G. Wylangowski, D.N. Payne, - Acousto-optic Modulation using a New Chlorotellurite Glass, *J.Appl.Phys.*, 75, 519 (1994).
34. **I. Abdulhalim**, - Kinetic Model for Photoinduced and Thermally Induced Creation and Annihilation of Metastable Defects in Hydrogenated Amorphous Silicon, *J.Appl.Phys.*, 77, 1897 (1995).
35. **I. Abdulhalim**, - Model for Photoinduced Defects and Photorefractivity in Optical Fibers, *App. Phys. Lett.*, 66, (24), 3248, (1995).
36. C. N. Pannell, B. F. Wacogne, **I. Abdulhalim**, - In-Fiber and Fiber-Compatible Acoustooptic Components, *J. Lightwave Technolog.*, 13, (7), 1429 (1995).
37. **I. Abdulhalim**, Analytic formulae for the refractive indices and the propagation angles in biaxial and gyrotropic media, *Optics Commu.* (157)1-6 (1998) pp. 265-272.
38. **I. Abdulhalim**, - Analytic propagation matrix method for linear optics of arbitrary biaxial layered media, *J. Opt. A*, 1 (5) (646-653) 1999.
39. **I. Abdulhalim**, - 2×2 Matrix summation method for multiple reflections and transmissions in a biaxial slab between two anisotropic media, *Optics Commu.* (163)1-3 9-14 (1999).
40. **I. Abdulhalim**, - Exact 2×2 matrix method for the transmission and reflection at the interface between two arbitrarily oriented biaxial crystals, *J. Opt. A: Pure Appl. Opt.* 1 (6) (655-661) 1999.
41. **I. Abdulhalim**, Point of ultra-sensitivity to perturbations for axial propagation in helicoidal bianisotropic structures, *Europhys. Lett*, 48 (2), pp. 177-181 (1999).
42. **I. Abdulhalim**, - Method for the measurement of multilayers refractive indices and thicknesses using interference microscopes with annular aperture, - *Optik*, 110 (10), 476-8 (1999).
43. **I. Abdulhalim**, - Omnidirectional reflection from periodic anisotropic stack, *Opt.Commu.*, 174, 43-50 (2000).
44. **I. Abdulhalim**, - The propagation matrix for optics of isotropic chiral slabs and multi-layers, *Optik*, 111 (2), 65-70 (2000).
45. **I. Abdulhalim**, - Reflective Phase-Only Modulation using one Dimensional Photonic Crystals, - *J.Opt.A (letters)*, 2 (2), L9-L11 (2000).
46. **I. Abdulhalim**, - Analytic Propagation Matrix Method for Anisotropic Magneto-Optic Layered Media, *J. Opt. A: Pure Appl. Opt.* 2, 557-564 (2000).
47. **I. Abdulhalim**, - Theory for Double Beam Interferometric Microscopes and Experimental Verification using the Linnik Microscope, - *J.Mod.Optics* 48 (2) 279-302 (2001).
48. **I. Abdulhalim**, - Spectroscopic Interference Microscopy Technique for Measurement of layer Parameters, *Meas.Sci.Technol.*, 12, 1996-2001 (2001).

49. **I. Abdulhalim**, - Comment on Teaching the Flux and Transport Parameters of Maxwellian Gas within the Kinetic Theory, *Europ.J.Phys.* 22, 519-526 (2001).
50. D. Lusk, **I. Abdulhalim** and F. Placido, Omnidirectional reflection from Fibonacci quasi-periodic one-dimensional photonic crystal, *Opt. Commu.*, 198, 273-279 (2001).
51. **I. Abdulhalim**, S. Millward, G. Moores, L. Firth and F. Placido, Operation of Lateral Effect Photosensitive Position Sensors using Differential Time Delay Mode, *Opt.Eng.* 41 (12) 3265-69 (2002).
52. **I. Abdulhalim**, Reflective Polarization Conversion Fabry-Perot Resonator using Omnidirectional Mirror of Periodic Anisotropic Stack, *Optics Commu.* 215, 225-230 (2003).
53. **I. Abdulhalim**, Optimization of antiferroelectric liquid crystal devices at the degeneration point, *J.Appl.Phys. (Communication)* Vol. 93, 9, 4930-32 (2003).
54. **I. Abdulhalim**, and G. Moores, Remote temperature and thermal expansion sensing using the time delay mode of position sensors, - *Sensors and Actuators A* Vol.111/2-3, 245-51 (2004).
55. **I. Abdulhalim**, Device Physics of the lateral effect position sensor operation in the time delay mode, *J.Phys.D.* 37, 1376-84 (2004).
56. **I. Abdulhalim**, Dispersion relations for liquid crystals using the anisotropic Lorentz model with geometrical effects, *Liq.Cryst.* 33 (9) 1027-41 (2006).
57. **I. Abdulhalim**, Polarized optical filtering from generalized twisted anisotropic structure, *Opt.Comm.* 267 (1) 36-39 (2006).
58. **I. Abdulhalim**, Unique optical properties of anisotropic helical structures in Fabry-Perot cavity, *Opt. Lett.* 31, 3019-21 (2006).
59. **I. Abdulhalim**, Competence between spatial and temporal coherence in full field optical coherence tomography and interference microscopy, *J. Opt. A: Pure Appl. Opt.* 8, 952-958 (2006).
60. M. Zourob, A. Simonian, J. Wild, S. Mohr, Xudong Fan, **I. Abdulhalim** and N. J. Goddard, Optical leaky waveguide biosensors for the detection of organophosphorus pesticides, *Analyst*, 132, 114-120 (2007).
61. **I. Abdulhalim**, Simplified optical scatterometry for periodic nano-arrays in the quasi-static limit, *Appl.Opt.*, 46, 2219-2229 (2007).
62. **I. Abdulhalim**, M. Auslender, S. Hava, Resonant and scatterometric gratings based nano-photonics structures for biosensing, *Journal of NanoPhotonics*, 1, 011680 (2007).
63. **I. Abdulhalim**, R. Moses and R. Sharon, Biomedical optical applications of liquid crystal devices, *Acta Physica Polonica A* 112 (5) 715-722 (2007).
64. **I. Abdulhalim**, M. Zourob, A. Lakhtakia, Surface plasmon resonance sensors-a mini review, *Invited* review to a special issue on the topic: Electromagnetic Surface Waves, *J. Electromagnetism* 28:3, 213-242 (2008).
65. **I. Abdulhalim**, Effect of the number of sublayers on axial optics of anisotropic helical structures, *Appl.Opt.* 47, 3002-3008 (2008).
66. Amit Lahav, Mark Auslender and **I. Abdulhalim**, Sensitivity enhancement of guided wave surface plasmon resonance sensors, *Opt.Lett.* 33, 2539-2541 (2008).

67. **I. Abdulhalim** and Ronen Dadon - Multiple interference and spatial frequencies' effect on the application of frequency-domain optical coherence tomography to thin films' metrology, *Measurement science and technology* 20, 015108 (2008).
68. **I. Abdulhalim**, Surface plasmon TE and TM waves at anisotropic film-metal interface, *J. Opt. A: Pure Appl. Opt.* 11, 015002 (2009).
69. Amit Lahav, Atef Shalabney, **I. Abdulhalim**, Surface plasmon resonance sensor with enhanced sensitivity using nano-top dielectric layer, *Journal of Nano-photonics* 3, 031501 (2009).
70. **I. Abdulhalim**, Alina Karabchevsky, Christian Patzig, Bernd Rauschenbach, Bodo Fuhrmann, Evgeny Eltzov, Robert Marks, Jian Xu, Fan Zhang, Akhlesh Lakhtakia, Surface enhanced fluorescence from metal sculptured thin films with application to biosensing in water, *App.Phys.Lett.* 94, 063206 (2009).
71. Avner Safrani, **I. Abdulhalim**, Spectropolarimetric method for optic axis, retardation and birefringence dispersion measurement, *Opt. Eng.* 48 (5), 053601 (2009).
72. **I. Abdulhalim** - Coherence effects in applications of frequency and time domain full field optical coherence tomography to optical metrology, *Invited paper to a Special Issue on Holography and Interferometry for Sensing, Recording, Visualizing and Manipulating Data: Current Research Topics Reflecting the Contribution of Professor Chandra S. Vikram*, *J. Holography and Speckle*, 5, 180-190 (2009).
73. **I. Abdulhalim**, Polarization independent birefringent Fabry-Perot etalon having polarization conversion mirrors, *Opt.Commun.* 282, 3052-3054 (2009), doi:[10.1016/j.optcom.2009.04.044](https://doi.org/10.1016/j.optcom.2009.04.044)
74. Avner Safrani and **I. Abdulhalim**, Liquid crystal polarization rotator and a tunable polarizer, *Optics Letters*, 34, 1801-3 (2009).
75. A. Shalabney, A. Lakhtakia, **I. Abdulhalim**, A. Lahav, Christian Patzig, I. Hazeq, A. Karabchevsky, Bernd Rauschenbach, F. Zhang, J. Xu, Surface plasmon resonance from metallic columnar thin films, *Photon Nanostruct: Fundam Appl.* 7, 176-185 (2009), doi:[10.1016/j.photonics.2009.03.003](https://doi.org/10.1016/j.photonics.2009.03.003).
76. A. Karabchevsky, O. Krasnykov, **I. Abdulhalim**, B. Hadad, A. Goldner, M. Auslender and S. Hava, Metal grating on a substrate nanostructure for sensor applications, *Photon Nanostruct: Fundam Appl* 7, 170-175 (2009), doi:[10.1016/j.photonics.2009.05.001](https://doi.org/10.1016/j.photonics.2009.05.001).
77. **I. Abdulhalim**, Optimized guided mode resonant structure as thermo-optic sensor and liquid crystal tunable filter, *Chinese Optics Letters*, 7 (8), 667, (2009).
78. Ofir Aharon and **I. Abdulhalim**, Birefringent tunable filter with wide dynamic range, *Opt.Lett.*, 34, 2114-2116 (2009).
79. Ofir Aharon and **I. Abdulhalim**, Liquid crystal tunable filter with extended free spectral range, *Optics Express*, 17, 11426-33 (2009).
80. Alina Karabchevsky, Olga Krasnykov, Mark Auslender, Benny Hadad, Adi Goldner and **I. Abdulhalim**, Theoretical and experimental investigation of enhanced transmission through periodic metal nanoslits for sensing in water environment, *Journal of Plasmonics*, 4, 281-292 (2009), DOI [10.1007/s11468-009-9104-4](https://doi.org/10.1007/s11468-009-9104-4).
81. **I. Abdulhalim**, David Menashe, Approximate analytic solutions for the director profile of homogeneously aligned nematic liquid crystals, *Liq.Cryst.* 37, 233-239 (2010).
82. A. Shalabney and **I. Abdulhalim**, Electromagnetic fields distribution in multilayer thin film structures and the origin of sensitivity enhancement in surface plasmon resonance sensors, *Sensors and Actuators A*, 159, 24-32 (2010).

83. Ofir Aharon, **I. Abdulhalim**, Liquid crystal wavelength independent continuous polarization rotator, *Optical Engineering* 49, 034002-4p (2010).
84. Avner Safrani, Ofir Aharon, Shahar Mor, Ofer Arnon, Lior Rosenberg and **I. Abdulhalim**, Skin biomedical optical imaging system using dual wavelength polarimetric control with liquid crystals, *Journal of Biomedical Optics* 15, 026024-8p (2010).
85. Rony Sharon, Ron Friedmann, **I. Abdulhalim**, Multilayered scattering reference mirror for full field optical coherence tomography with application to cell profiling, *Opt.Commu.* 283, 4122-25 (2010).
86. Shahar Mor, Vicente Torres-Costa, Raúl J. Martín-Palma and **I. Abdulhalim**, Planar polar liquid crystalline alignment in nanostructured porous silicon one dimensional photonic crystals, *Appl.Phys.Lett.* **97**, 113106 (2010).
87. Alex Zlotnik, Yoed Abraham, Lior Liraz, **I. Abdulhalim** and Zeev Zalevsky, Improved Extended Depth of Focus Full Field Spectral Domain Optical Coherence Tomography, *Opt.Commu.* **283**, 4963-68 (2010).
88. Michael Nye and **I. Abdulhalim**, Does human skin truly behave as an array of helical antennae in the millimeter and THz wave ranges?, *Opt.Lett.* **35**, 3180 (2010).
89. Olga Krasnykov, Alina Karabchevsky, Atef Shalabney, Mark Auslender and **I. Abdulhalim**, Sensor with increased sensitivity based on enhanced optical transmission in the infrared, *Opt.Commu.* 284, 1435-1438 (2011).
90. Miri Gelbaor, Matvey Klebanov, Victor Lyubin and **I. Abdulhalim**, Photoinduced permanent alignment of liquid crystal on nanostructured chalcogenide thin film, *Appl.Phys.Lett.* 98, 071909 (2011).
91. **I. Abdulhalim**, Non-display bio-optic applications of liquid crystals, *Liquid Crystals Today* 20, Issue 2, 44-60 (2011). *Invited review article.*
92. A. Karabchevsky, S. Karabchevsky and **I. Abdulhalim**, Fast surface plasmon resonance imaging sensor using Radon transform, *Sensors and Actuators B: Chemical*, 155, 361-365 (2011).
93. Atef Shalabney and **I. Abdulhalim**, Sensitivity enhancement methods for surface plasmon sensors, *Lasers and Photonics Reviews*, 5, 571-606 (2011). DOI [10.1002/lpor.201000009](https://doi.org/10.1002/lpor.201000009). *Invited review article.*
94. Avner Safrani and **I. Abdulhalim**, Spatial coherence effect on layers thickness determination in narrowband full field optical coherence tomography, *Applied Optics* 50, 3021-27 (2011).
95. Michael Ney and **I. Abdulhalim**, Modeling of reflectometric and ellipsometric spectra from the skin in the TeraHertz and submillimeter waves region, *J. Biomedical Optics* 16, 067006-15 (2011).
96. A. Karabchevsky, S. Karabchevsky, and **I. Abdulhalim**, Nano-precision algorithm for surface plasmon resonance determination from images with low contrast for improved sensor resolution, *J. NanoPhotonics*, 5, 051813-12 (2011). DOI: [10.1117/1.3598138](https://doi.org/10.1117/1.3598138).
97. Alina Karabchevsky, Mark Auslender and **I. Abdulhalim**, Dual LSPR excitation at the interfaces of periodic metallic nanostructures, *J. Nano Photonics* 5, 051821-9p (2011).
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105. Alina Karabchevsky, Chinmay Khare, Bernd Rauschenbach, and **I. Abdulhalim**, Microspot biosensing based on amplification of fluorescence signal with nano sculptured metallic thin films, submitted 2011.
106. Alina Karabchevsky, Lev Tsapovsky, Robert S. Marks, **I. Abdulhalim**, Detection of Bisphenol A by a Novel Diverging Beam SPR Technique, submitted 2011.
107. Atef Shalabney and **I. Abdulhalim**, Figure of merit enhancement of surface plasmon resonance sensors in the spectral regime, submitted 2011.

(d) Patents

1. K. M. Johnson, C. M. Mao, and **I. Abdulhalim**, Optically Addressable Spatial Light Modulator Having a Distorted Helix Ferroelectric Liquid Crystal Member, U.S. Patents No' 5,073,010, Dec. 17, 1991.
2. **I. Abdulhalim**, C.N. Pannell, D.N. Payne,- Acousto-Optic Modulator, U.K Patents GB2269237, Feb. 1994.
3. Y. Xu, **I. Abdulhalim**, - Spectroscopic Scatterometer System – U.S. Patents No' 6,483,580 Nov. 19, 2002.
4. Y. Xu, **I. Abdulhalim**, - Measuring a Diffracting Structure, Broadband, Polarized, Ellipsometric and an Underlying Structure – International Publications No': WO45340A1, Sept. 1999. European Patent No': EP1073876A1. Australian Patent No': AU3310999A1.
5. **I. Abdulhalim**, M. Adel, M. Friedmann, M. Faeyrman, - Periodic Patterns and Techniques to Control Misalignment between two layers, - US Patents no' 7,656,528, Feb. 2010 (originally filed in 2003).
6. S. Lakkaparagada, K.A. Brown, M. Hankinson, A. Levy and **I. Abdulhalim**, - Methods and Systems for Lithography Process Control, US patent no' 2004/0005507, Jan. 8. 2004.
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(e) Provisional Patent Applications

1. **I. Abdulhalim**, W. Park, Tera-Hertz Superresolved Optical Imaging using Negative Index Lens, Oct. 2005.
2. **I. Abdulhalim**, A. Lakhtakia, Optical biosensors using nano sculptured thin films, Oct. 2005.
3. **I. Abdulhalim**, Sensor and tunable device based on direct excitation of surface plasmons resonance, Aug. 2006.
4. **I. Abdulhalim**, Spectropolarimetric scatterometric skin imaging system, Dec. 2008.
5. Ofir Aharon, **I. Abdulhalim**, Tunable optical filter having large dynamic range, May 2009.
6. **I. Abdulhalim**, Optical sensor with enhanced sensitivity, February 2010.
7. **I. Abdulhalim** and Miri Gelbaor, Chalcogenide glass photoalignment material for liquid crystals, January 27, 2011.
8. **I. Abdulhalim**, Switchable mirror and tunable filter incorporating helical liquid crystal and photosensitive resonant structure, May 6, 2011.
9. Avner Safrani and **I. Abdulhalim**, True-spectroscopic dual mode high resolution full-field optical coherence tomography using liquid crystal devices, July 3, 2011.

(f) Conference proceedings and professional articles / reports

1. **I. Abdulhalim** "Optical properties of chiral smectic liquid crystals in their SmC phase" (M.Sc. Thesis in Hebrew) Department of Physics, Technion, Haifa, Israel 1985.
2. **I. Abdulhalim** "CW laser induced structural transformations in amorphous materials" (D.Sc. Thesis in Hebrew) Department of Physics, Technion, Haifa, Israel 1988.
3. **I. Abdulhalim**, B. Landreth, G. Moddel, - Analog Optically Addressed Spatial Light Modulator with Pseudocolor Capability using the Helix Distorsion of Ferroelectric Liquid Crystals, Technical Meeting of the Society for Information Displays, SID Digest of Technical Papers, May 1990, page 330.
4. **I. Abdulhalim** and Chris Pannell, "FLAME", Research project report on "Fiber laser acoustooptic modulators", University of Southampton, Optoelectronic s Research Center, Southampton, UK, 1993.
5. **I. Abdulhalim**, C.N. Pannell, L. Reekie, K.P. Jedrzejewski, E.R. Taylor, D.N. Payne, -Acousto-optically Q-Switched Fibre Laser Source of High Peak Power and Short Duration for Fibre Sensor Applications, Proc. of the 9th Optical Fibre Sensor conference (OFS-9), P.229, Firenze, May 1993.
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10. **I. Abdulhalim**, I. Gannot, C. N. Pannell, All-fiber and fiber compatible acousto-optic modulators with potential biomedical applications, Proc. SPIE Photonics West Conference, Optical Fibers and Sensors for Medical Diagnostics and Treatment Applications VI, Vol. 6083, p. 116-130, 2006.
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12. **I. Abdulhalim**, Optical scatterometry with analytic approaches applied to periodic nano-arrays including anisotropic layers, Proceedings of the SPIE-Europe meeting on optical metrology, Munich, June 2007, Proc. SPIE, Vol. 6617, 661714 (2007); DOI:10.1117/12.726678.
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7. Lectures and presentations at meetings and conferences

(a) Invited lectures at conferences/meetings

1. G. Model, K.M. Johnson, **I. Abdulhalim**, and M.A. Handschy, -Advances in optical addressing of chiral smectic liquid crystal spatial light modulators, Second International Symposium on Ferroelectric Liquid Crystals, Goteborg, Sweden, June, 1989.
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5. **I. Abdulhalim**, Fiber acoustooptic modulators for Q-switching and mode-locking of fiber lasers, Israeli Electrooptic meeting, Herzlia, Israel, 1994.
6. J. Allgair, D. C. Benoit, R. R. Hershey, L. C. Litt, **I. S. Abdulhalim**, M. Faeyrman, J. C., Robinson, U. K. Whitney, Y. Xu, Manufacturing Considerations for Implementation of Scatterometry for Process Monitoring, Proc. of SPIE Conference on Metrology, Inspection, and Process Control for Microlithography XIV, San Jose, March 2000.
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8. **I. Abdulhalim**, I. Gannot, C. N. Pannell, All-fiber and fiber compatible acousto-optic modulators with potential biomedical applications, SPIE Photonics West Conference, Optical Fibers and Sensors for Medical Diagnostics and Treatment Applications VI, January 2006.
9. **I. Abdulhalim**, Biosensing configurations using guided wave resonant structures, NATO Advanced Study Institute on Optical Waveguide Sensing and Imaging, Oct. 2006.
10. **I. Abdulhalim**, Liquid crystals modulators for biomedical optical applications, The 11th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 26-27, 2007.
11. **I. Abdulhalim**, Measuring nano-arrays with optical wavelengths, The 1st Turkish-Israeli meeting on Nano-Photonics, Bar Ilan University, March 28, 2007.
12. **I. Abdulhalim**, Liquid crystal spatial light modulators integrated with nano-structures, The 1st Israeli meeting on Nano-Photonics, The dead sea, May 30-31, 2007.
13. **I. Abdulhalim**, Biomedical optical applications of liquid crystal devices, Proceedings of ISCOM07, Belgrade Oct. 2007.
14. **I. Abdulhalim**, Biomedical optical applications of liquid crystals, Workshop on Biomedical Optics to honor the 8th birthday of Prof. Natan Croitoro, Tel Aviv University, November 2007.
15. Ofir Aharon, Avner Safrani, Riki Moses and **I. Abdulhalim**, Liquid crystal tunable filters and polarization controllers for biomedical optical imaging, SPIE Optics and Photonics, San Diego 2008.
16. Amit Lahav, Mark Auslender and **I. Abdulhalim**, Sensitivity enhancement of guided wave surface plasmon resonance sensors using top nano dielectric layer, SPIE Optics and Photonics, San Diego '08.
17. **I. Abdulhalim**, Alina Karabchevsky, Christian Patzig, Bernd Rauschenbach, Bodo Fuhrmann, Evgeny Eltzov, Robert Marks, Jian Xu, Fan Zhang, Akhlesh Lakhtakia, Towards the biosensing applications of sculptured thin films, The 1st Mediterranean Conference on Nano-Photonics , MediNano-1, October 6-8, 2008, Istanbul, Turkey.

18. Mark Auslender, Alina Karabchevsky, Olga Krasnykov, Benny Hadad, Adi Goldner and **I. Abdulhalim**, Nano-scale metallic grating based structures for sensor applications, The 1st Mediterranean Conference on Nano-Photonics, MediNano-1, October 6-8, 2008, Istanbul, Turkey.
19. **I. Abdulhalim**, Spatial Light Modulators and Liquid Crystal Devices in Optical Imaging Systems, The 12th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 23-24, 2009.
20. **I. Abdulhalim**, Ofir Aharon, Avner Safrani and Shahar Mor, Biomedical Optical Imaging Assisted by Liquid Crystal Devices, LLC'2009 VII International Conference "Lyotropic Liquid Crystals and Nanomaterials" & 5th Chistyakov's Readings "Achievements in Thermotropic Liquid Crystals Research", Sept. 22-25, Ivanovo, Russia, 2009. (Plenary lecture)
21. **I. Abdulhalim**, Enhancing the sensitivity of surface Plasmon sensors, The 2nd Mediterranean Conference on Nano-Photonics, MediNano-2, October 26-27, 2009, Athens, Greece.
22. **I. Abdulhalim**, Surface Plasmon based sensing using anisotropic nanostructured thin films, The 3rd Mediterranean Conference on Nano-Photonics, MediNano-3, October 18-19, 2010, Belgrade, Serbia.
23. **I. Abdulhalim**, Enhanced spectroscopic and surface plasmon thin film sensors, Summer school "Plasmonics, Functionalization and Biosensing", April 25-30, 2011, Kirchhoff Institute for Physics, Heidelberg University, Germany.
24. **I. Abdulhalim**, Nanostructured metallic thin film platforms for sensing, Nanotechnology Symposium, April 14, 2011, Bar Ilan University, Ramat Gan, Israel.
25. **I. Abdulhalim**, Liquid crystal tunable resonant devices for nondisplay applications, International liquid crystals science and technology (LCST) conference in ChangZhou, China, July 17-20, 2011.
26. **I. Abdulhalim**, Coherene effects in full field optical coherence tomography, Meeting of the European Optical Society, Capri, Italy, Sept. 26-28, 2011.
27. **I. Abdulhalim**, Enhancing the sensitivity of surface plasmon resonance sensors, NanoSensorPhotonics 2011 - Optical Biosensors, Nanobiophotonics and Diagnostics, Dead Sea, Nov. 5-9, 2011.

(b) Contributed presentations at conferences/meetings (Oral or poster published only in abstracts book)

1. **I. Abdulhalim**, L. Benguigui and R. Weil, Selective reflection by helicoidal liquid crystals, 10th Intl. Liq. Cryst. Conf., abstract E11, York, UK, July 15-21, 1984.
2. **I. Abdulhalim**, and G. Moddel, Electrically and optically controlled light modulation and color switching using helix distortion of ferroelectric liquid crystals, 13th Intl. Liq. Cryst. Conf., Vancouver, July 22-27, 1990.
3. **I. Abdulhalim**, G. Moddel, and N.A. Clark, Kink-antikink pair production and annihilation in ferroelectric liquid crystals, 14th Intl. Liquid Crystal Conf., (Taylor & Francis, London, 1992, P.180), Pisa, Italy, June 21-26, 1992.
4. **I. Abdulhalim**, G. Moddel, and N.A. Clark, Strong effect of the surface layers on the electrooptic response of ferroelectric liquid crystals, 14th Intl. Liquid Crystal Conf., (Taylor & Francis, London, 1992, P.180), Pisa, Italy, June 21-26, 1992.
5. **I. Abdulhalim**, Kinetic many body model for photoinduced processes in hydrogenated a-Si and optical fibers, Photo-Excited Processes, Diagnostics and Applications, Jerusalem, 1995.
6. **I. Abdulhalim**, Role of Spatial versus Temporal Coherence in Optical Coherence Tomography, The First France-Israel Bi-National Workshop on Nano-Bio-Photonics, Eilat, Israel, 11-12 Dec. 2005.

7. **I. Abdulhalim**, Fundamental and practical differences between spatial versus temporal low coherence interference microscopy, Bi-National (Israeli-Italian) Workshop on Optronics, Ben-Gurion University of the Negev, Beer-Sheva, Israel, 30 November - 1 December 2005.
8. Boris Epshtein and **I. Abdulhalim**, Design and Implementation of Detection schemes for Spectral Photoplethysmography and Photo-acoustics, Proceedings of SPIE, BIOS-Europe-Optical Coherence Tomography and Coherence Techniques, Munich, Germany, June 2007.
9. Alexander Sudakov and **I. Abdulhalim**, Schematic eye model, The 11th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 26-27, 2007.
10. Amit Lahav and **I. Abdulhalim**, Sensitivity enhancement of guided wave surface Plasmon based biosensors, The 11th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 26-27, 2007.
11. German Tsvilikhovski, Boris Epstein and **I. Abdulhalim**, AC coupled multi-wavelength detection for spectral photoplethysmography and photo-acoustic experiments, The 11th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 26-27, 2007.
12. Lior Liraz, Ron Friedman and **I. Abdulhalim**, Optical coherence tomography with annular aperture, The 11th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 26-27, 2007.
13. Ron Friedman and **I. Abdulhalim**, Full field common path optical coherence tomography system, The 11th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 26-27, 2007.
14. Ronen Dadon and **I. Abdulhalim**, Application of frequency domain optical coherence tomography to thin film optical metrology, The 11th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 26-27, 2007.
15. **I. Abdulhalim**, Zeev Zalevsky and Ehud Rivlin, Methods for Improving the Image Quality of Low Coherence Optical Microscopy for Biomedical Applications", Israel workshop on Electro-optics and Lasers and Ministry of Science and Technologies (MOST) status seminars, Bar Ilan University, Ramat-Gan, Israel, March 27, 2008.
16. Amit Lahav and **I. Abdulhalim**, Improved modes of operation of surface plasmon resonance sensors, The 1st Mediterranean Conference on Nano-Photonics, October 6-8, 2008, Istanbul, Turkey.
17. Alina Karabchevsky, Olga Krasnykov, Mark Auslender, Benny Hadad, Adi Goldner, Evgeny Eltzov, Robert Marks and **I. Abdulhalim**, Nano-scale metallic grating based structures for sensor applications, The 1st Mediterranean Conference on Nano-Photonics, October 6-8, 2008, Istanbul, Turkey.
28. Avner Safrani and **I. Abdulhalim**, Spectropolarimetric method for optic axis, retardation and birefringence dispersion measurements, The 12th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 23-24, 2009.
29. Alina Karabchevsky, **I. Abdulhalim**, Christian Patzig, Bernd Rauschenbach, Bodo Fuhrmann, Evgeny Eltzov, Robert Marks, Jian Xu, Fan Zhang, Akhlesh Lakhtakia, Surface enhanced fluorescence from metallic nano-structured thin films for Biosensing in water, The 12th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 23-24, 2009.
30. Ofir Aharon and **I. Abdulhalim**, Liquid crystal tunable filters designed for biomedical applications, The 12th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 23-24, 2009.
31. Atef Shalabney and **I. Abdulhalim**, Optimization of multilayer surface Plasmon resonance biosensors, The 12th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 23-24, 2009.
32. Rony Sharon and **I. Abdulhalim**, Full field common path OCT system for cell profiling and medical applications, The 12th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 23-24, 2009.

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34. **I. Abdulhalim**, Avner Safrani and Ofir Aharon, Polarization and wavelength control using liquid crystals for integration into biomedical optical imaging systems, European Conference on Liquid Crystals, Colmar, France, April 19-24, 2009.
35. Olga Krasnykov, Mark Auslender, **I. Abdulhalim**, Assessment of Guided Mode Resonant Structures for Sensing, PIERS 26th conference, Moscow Aug.18-21, 2009.
36. Shahar Mor, Vicente Torres-Costa, Raúl J. Martín-Palma, **I. Abdulhalim**, Tunable filters based on porous silicon infiltration with liquid crystals, 13th Topical Meeting on the Optics of Liquid Crystals, Sept. 28th-Oct. 3rd, 2009, Erice, Italy.
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39. A. Shalabney, and **I. Abdulhalim**, Optimization of Surface Plasmon Resonance Sensors, MediNano-2, October 26-27, 2009, Athens, Greece.
40. A. Karabchevsky, and **I. Abdulhalim**, Enhanced Optical Transmission due to Double LSPR Excitation at Metal Grating Interfaces and its Advantage in Sensing, MediNano-2, October 26-27, 2009, Athens, Greece.
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42. **I. Abdulhalim**, Optimized liquid crystal tunable filters and polarization controllers for biomedical spectropolarimetric optical imaging, 23rd Intern. Liquid Crystal Conference, 11th-16th, July, 2010, Krakow, Poland.
43. Alina Karabchevsky, Serge Karabchevsky and **I. Abdulhalim**, Surface Fast Surface Plasmon Resonance Imaging Sensor, The 3rd Mediterranean Conference on Nano-Photonics, MediNano-3, October 18-19, 2010, Belgrade, Serbia.
44. A. Shalabney, A. C. Khare, Bernd Rauschenbach and **I. Abdulhalim**, Surface Enhanced Raman Scattering from Metallic Sculptured Thin Films – A Comparative Study, The 3rd Mediterranean Conference on Nano-Photonics, MediNano-3, October 18-19, 2010, Belgrade, Serbia.
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48. Alina Karabchevsky, Mar Auslender and **I. Abdulhalim**, Localized versus Extended Surface Plasmon Resonances excited in Nano-gratings with Nano-scale Thickness, NanoIsrael, November 2010, Tel Aviv.
49. Miri Gelbaor, Matvey Klebanov, Victor Lyubin and **I. Abdulhalim**, Photoinduced Permanent Alignment of Liquid Crystal on Nanostructured Chalcogenide Thin Film, NanoIsrael, November 2010, Tel Aviv.
50. Miri Gelbaor, Matvey Klebanov, Victor Lyubin and **I. Abdulhalim**, Photoinduced Permanent Alignment of Liquid Crystal on Nanostructured Chalcogenide Thin Film, The 13th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 9-10, 2011.
51. Miri Gelbaor, Matvey Klebanov, Victor Lyubin and **I. Abdulhalim**, Photoinduced Permanent Alignment of Liquid Crystal on Nanostructured Chalcogenide Thin Film, The 13th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 9-10, 2011.
52. Alina Karabchevsky, Serge Karabchevsky, Lev Tsapovsky, Robert Marks and **I. Abdulhalim**, Fast Surface Plasmon Resonance Imaging Sensor using Radon Transform and its Application in Biosensing, The 13th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 9-10, 2011.
53. Alina Karabchevsky, Lev Tsapovsky, Chinmay Khare, Christian Patzig, Bernd Rauschenbach, Robert S. Marks and **I. Abdulhalim**, Metallic Nano-Sculptured Thin Films as Fluorescence Sensors for Biochemical Receptors Immobilized on Surfaces, The 13th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 9-10, 2011.
54. Avner Safrani and **I. Abdulhalim**, Depth Limitation due to Temporal and Spatial Coherence Competence in Full Field Interference Microscopy and Optical Coherence Tomography, The 13th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 9-10, 2011.
55. Atef Shalabney, A. Lakhtakia, C. Khare, B. Raushenbach, and **I. Abdulhalim**, Sensitivity of Surface Plasmon Resonance Sensors Based on Metallic Columnar Thin Films, The 13th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 9-10, 2011.
56. Shahar Mor, Vicente Torres-Costa, Raúl J. Martín-Palma and **I. Abdulhalim**, Observation of liquid crystal planar polar geometry in nanostructured porous silicon 1D photonic crystals, The 13th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 9-10, 2011.
57. **I. Abdulhalim**, Direct Excitation of Surface Plasmons with TE and TM Waves at Anisotropic Film-metal Interface, Progress In Electromagnetics Research Symposium, PIERS 2011, March 20-23, Marrakesh, Morocco.
58. Atef Shalabney and **I. Abdulhalim**, Loss effects on the surface Plasmon resonance in Kretschmann configuration, Progress In Electromagnetics Research Symposium, PIERS 2011, March 20-23, Marrakesh, Morocco.
59. Alina Karabchevsky, Lev Tsapovsky, Robert S. Marks, **I. Abdulhalim**, Optical immunosensor for endocrine disruptor nanolayer detection by surface plasmon resonance imaging, SPIE Optics and Photonics Conference, San Diego, Aug. 2011.
60. Alina Karabchevsky, Christian Patzig, Bernd Rauschenbach, **I. Abdulhalim**, Microspot surface enhanced fluorescence from sculptured thin films for control of antibody immobilization," SPIE Optics and Photonics Conference, San Diego, Aug. 2011. ***Won the best student paper award.***
61. Miri Gelbaor, V. Lyubin, M. Klebanov and **I. Abdulhalim**, Photoalignment of liquid crystals using nano-dimensional chalcogenide thin films and relation to their photoinduced anisotropy effects, The 14th international topical meeting on the optics of liquid crystals, Yerevan, Armenia, Sept. 25-30, 2011. ***Won the best students poster award.***

62. Alina Karabchevsky, Lev Tsapovsky, Robert S. Marks, **I. Abdulhalim**, Optical immunosensor for endocrine disruptor detection using diverged beam SPR imaging, NanoSensorPhotonics 2011 - Optical Biosensors, Nanobiophotonics and Diagnostics, Dead Sea, Nov. 5-9, 2011.
63. Oleg Zalizniak and **I. Abdulhalim**, Improving the Surface Plasmon Resonance Diverging Beam Imaging Sensor, NanoSensorPhotonics 2011 - Optical Biosensors, Nanobiophotonics and Diagnostics, Dead Sea, Nov. 5-9, 2011.
64. Atef Shalabney and **I. Abdulhalim**, Improving Anisotropic sculptured thin films for bio-sensing and molecular detection with SPR and SERS, NanoSensorPhotonics 2011 - Optical Biosensors, Nanobiophotonics and Diagnostics, Dead Sea, Nov. 5-9, 2011. ***Won the best students poster award.***

(c) Participation in international seminars and workshops without presentation

- 1984 – Bat Sheva seminar in liquid crystals, Jerusalem and Elat, Israel.
 1992 – British-Israeli meeting on optical sensors, Southampton University, UK.
 1997 – Japan-Israeli meeting on near field optics, Keryat Anavem, Israel.
 1998 – The annual meeting of the Optical Society of America, Rochester, NY.
 1998 – Optical lithography meeting within SPIE Photonics West conference, San Jose, Ca, USA.
 2001 – The IX topical meeting on the optics of liquid crystals, Sorrento, Italy.

9. Research Grants

Grant name	Period	Project	Partners	Amount in US\$
Tashtiot	11/2011 - 10/2014	3D Holographic imaging using advanced technology of spatial light modulators	Prof. Yosi Rosen, BGU	300,000
CREATE – NRF Singapore	7/2011 – 6/2016	Nanomaterials for energy and water management	BGU team, HUJI team and NTU-Singapore team	25,0000
Russian-Israel binational	8/2011- 7/2013	Mesogenic nanostructures for electrooptic and photonic devices	Prof. Evgeny Pozhidaev, The P. N. Lebedev Physical Institute of Russian Academy of Sciences	50,000
BGU interfaculty	10/2008 - 10/2009	Spectropolarimetric skin imaging system	Prof. Lior Rosenberg and Dr. Ofer Arnon, School of Health Sciences and Soroka University Hospital	45,000
IPSO	10/2007 – 10/2010	Optimization of metallic nano-features for optical biosensing applications	Prof. Mario Feingold – Physics, BGU Prof. Mousa Abu Tier – Physics, AlQuds university	300,000
Tashtiot	8/2007 - 8/2010	Water sensors and their integration into multimodal system for water quality control.	Prof. R. Marks – Biotechnology Eng., BGU Prof. A. Brenner – Environm., Eng., BGU Dr. A. Kushmaru – Environm., Eg., BGU Mekorot – The Israeli water company	330,000
ISF equipment	10/2007 - 10/2010	LPCVD system for high quality coatings of dielectric thin films	Dr. Adi Goldner – Physics, BGU Dr. Nurit Ashkenazi – Materials Eng., BGU	750,000
Intel higher education	10/2007	Optical microscope system	Dr. Gever Levi – Biotechnology Eng., BGU	40,000
Tashtiot	11/2006 - 11/2009	Improved low coherence microscopy techniques for biomedical applications	Prof. Zeev Zalevsky – EE, Bar Ilan Prof. Ehud Rivlin – Computer Science, Technion	320,000

10. Reviewer for the following journals

(a) Journals of the Optical Society of America

Optics Letters, Optics Express, Journal of the Optical Society of America A, Applied Optics

(b) Journals of the American Institute of Physics

Applied Physics Letters, Journal of Applied Physics

(c) Journals of the Institute of Physics (UK)

Journal of Optics A, Journal of Physics D, Journal of Physics C, Journal of Measurement Science and Technology

(d) Journals of the International Society of Optical Engineering SPIE

Optical Engineering, Journal of NanoPhotonics, Journal of Biomedical Optics

(e) Other

Optics Communications, Journal of Electromagnetism, Sensors and Actuators A&B

11. Book Reviews

1. Photo-induced Defects in Semiconductors (Cambridge Studies in Semiconductor Physics and Microelectronic Engineering) by David Redfield. Review to Optics and Photonics News 1996.
2. Nonlinear Optics in Metals, by KH Bennemann, Review to Optics & Photonics News, 11 (5), 63 (2000).
3. Applied Optics and Optoelectronics 1998, by KTV Grattan, Review to Optics & Photonics News, Volume 11, Issue 3, March 2000, p.62.

12. Research students

(a) Ph.D. Students

#	Student name	Graduation date	Thesis Title
1	Ofir Aharon	Dec. 2011	Liquid crystal devices integrated in optical imaging systems for biomedical applications
2	Alina Karabshevsky	March 2012	Nanophotonic Structures for Optical Biosensing and Application in Water Quality Control
3	Atef Shalabney	Expected October 2013	Optimization of Plasmonic and Nanophotonic structures for Biosensing
4	Avner Safrani	Expected October 2013	Real time 3D imaging system
5	Michael Ney		Modeling of reflectometric and ellipsometric spectra of the human skin in the sub-millimeter and THz to the micro wave region
6	Miri Gilbaor		Improved liquid crystal devices using novel photoalignment techniques
8	Amit Lahav		Resonant Photonic Structures for tunable filtering

(b) M.Sc Students

#	Student name	Graduation date	Thesis Title
1	Ron Friedman	December 2007	Common path full field optical coherence tomography system
2	Ronen Dadon	December 2007	Application of frequency domain optical coherence tomography to optical metrology

3	Amit Lahav	June 2008	Photonic structures for optical sensor applications
4	Lior Leraz	January 2009	Incorporation of an annular aperture in an OCT system
5	Riki Moses	January 2009	Polarimetric and spectral skin imaging
6	Avner Safrani	August 2009	Spectropolarimetric systems for biomedical imaging and liquid crystal devices applications
7	Atef Shalabaney	July 2009	Surface Plasmon resonance biosensors with improved performance
8	Olga Krasnykov	April 2010	Nanophotonics structures for biosensing
9	Boris Epshtein	August 2010	Evaluation of photoplethysmography for blood glucose measurement
10	Rony Sharon	Dec. 2010	full field optical coherence tomography system with compensation
11	Michael Nye	June 2011	Modelling of scattering from skin in the THz and microwaves regions
12	Jenny Sokolovsky	Nov. 2011	Analysis of Optical Coherence Tomography Interferograms of Multi-Layered Biological Samples
13	Shahar Mor	Dec. 2011	Liquid crystals in nanostructured porous silicon 1D photonic crystals
12	Miri Gilbaor	February 2012	Liquid crystal devices integrated with thin film chalcogenide glasses
14	Nemer Khotabah		Liquid crystal tunable filters for biomedical optical imaging
16	Hadar Reisman		Spectropolarimetric skin imaging devices and system
17	Oleg Zalizniak		Surface plasmon imaging system with improved performance
18	Ansar Hajuj		Surface enhanced Raman scattering from nono-structured thin films for biosensing applications
19	Asi Solodar		Ring type liquid crystal spatial light modulator and its application for biomedical Imaging
20	Sivan Isaac		Improved liquid crystal Fabry-Perot tunable filter for biomedical applications