

Ibrahim Abdulhalim
CURRICULUM VITAE AND LIST OF PUBLICATIONS

1. Contact Details

Prof. **Ibrahim Abdulhalim**
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2. Education

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

4/010 - present	Professor, Department of Electrooptics Engineering, Ben-Gurion University, Israel.
07/011-present	Visiting Principal Scientist, School of Materials Science and Engineering, Nanyang Technological University, Singapore.
8/2007 – 8/015	Head of the Department of the Electrooptic Engineering, Ben Gurion University, Israel.
Mar./April 015	Visiting Professor at Institute of Chemistry & Biology of Membranes & Nanoobjects (UMR5248 CBMN), University of Bordeaux, France.
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. Founder of "PhotonicSys Ltd.", a startup company specialized in optical devices, sensors and systems.
2. Associate editor of the Journal of Imaging, since November 2014.

3. Associate editor of the SPIE Journal of NanoPhotonics, since September 2006.
4. Senior editor of the Journal of Physics Express, since 2010.
5. Guest co-editor of special issue of the Journal of Nano-Photonics including selected papers from the Mediterranean Nano-photonics Conferences, Running annually since 2007.
6. Member of the program committee for the conference: "Nanostructured thin films" within the SPIE meeting in Optics and Photonics, San Diego, August 2008.
7. Session chair within the conference: "Nanostructured thin films" within the SPIE meeting in Optics and Photonics, San Diego, August 2008.
8. Co-organizer of the 1st Mediterranean Conference on Nano-Photonics MediNano-1, Istanbul, Turkey, October 2008.
9. Session chair within the 1st Mediterranean Conference on Nano-Photonics MediNano-1, Istanbul, Turkey, October 2008.
10. Organizer and chair of session on: "Anisotropies and liquid crystals optics" within PIERS 26th conference, Moscow, August 18-21, 2009.
11. Member of the organizing committee of OASIS 2011 and session chair of the session on: "Light Modulators and their Applications", Tel Aviv, March 2011.
12. Organizer and chair of session on: "Anisotropic media and liquid crystals optics" within PIERS 29th conference, Marrakesh, March 2011.
13. 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.
14. Session chair for the "Optical Imaging" session within the European Optical Society Meeting in Capri, Italy, September 26-28th, 2011.
15. Co-organizer and Session chair in the workshop: "NanoSensor Photonics 2011: optical biosensors, nanobiophotonics and diagnostics" The dead Sea, Israel, November 5-9, 2011.
16. Session chair for the session titled: "Measurement of Optical Components and Systems" within the Optical Metrology SPIE conference in Munich, May 2013.
17. Session chair within the Mediterranean NanoPhotonics Conference (Medinano) in Lyon, France, Oct. 2013.

(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.
5. Imaging principles and optical components – graduate.
6. Liquid crystals optics and devices – graduate.
7. Bio-optical Sensing and Diagnostic Methods and Instrumentation - Graduate

Other courses taught in the past:

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

Teaching assistant in the following courses:

13. Basic and advanced physics labs – undergraduate (Physics Department, Technion, 1982-1988).
14. Optics - undergraduate (Physics Department, Technion, 1985-1988).
15. Physics 1 - Classical mechanics - undergraduate (Physics Department, Technion, 1982-1988).
16. Physics 2 – Electricity and Magnetism - undergraduate (Physics Department, Technion, 1982-1988).
17. 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 - present 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.
5. Senior member of OSA, since July 2015.
6. IdEx Bordeaux Visiting Scholars programme award, 2015.
7. Over 10 best paper awards in conferences.
8. Total funding secured more than M3US\$ from national, binational and international organizations.

6. Scientific Publications

For citations and impact please see google scholar website:

<http://scholar.google.com.sg/citations?user=ZtpoAh8AAAAJ&hl=en&oi=ao>

(a) Books:

1. Z. Zalevsky and **I. Abdulhalim**, *Integrated Nanophotonic Devices (Micro and Nano Technologies)*, Publisher: William Andrew-Elsevier, (1st ed. 2010, 2nd ed. 2014), ISBN 1437778488.
2. **I. Abdulhalim** and R. Marks, Editors, *Nanomaterials for Water Management: Signal Amplification for Biosensing from Nanostructures*, (Pan Stanford Publishing, 2015). ISBN 9789814463478 - CAT# N11160. <http://www.crcpress.com/product/isbn/9789814463478>

(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: Physic sand 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, In: *Recent advances in nanotechnology*, Editor: Zeev Zalevsky, Publisher: Verlag Dr. Muller, ISBN: 3639341279 / ISBN-13: 9783639341270, 2012.
5. **I. Abdulhalim**, Enhanced spectroscopies and surface plasmon thin film sensors, Chapter 7 in: *Nanoantenna: Plasmon-Enhanced Spectroscopies for Biotechnological Applications*, Ed. Marc Lamy de la Chapelle and Annemarie Pucci, Pan Stanford Publishing, Singapore 2013.
6. A. Karabchevsky and **I. Abdulhalim**, Techniques for signal analysis in surface plasmon resonance sensors, In: *Nanomaterials for Water Management: Signal Amplification for Biosensing from Nanostructures*, Ch.7, Editors: I. Abdulhalim and R. S. Marks, Pan Stanford Publishing, 2015.

7. **I. Abdulhalim**, Spatiotemporal coherence effects in full field optical coherence tomography, In: *Full-Field Optical Coherence Microscopy: technology and applications*, Editor: Arnaud Dubois, 2015.

(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 As_2Se_3 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, 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. Cryst. 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. Cryst.*, 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. Jedrzejewski, 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**, C. N. Pannell, R. S. Deol, D. W. Hewak, G. Wylangowski, D. N. Payne, "High performance acousto-optic chalcogenide glass based on $Ga_2S_3-La_2S_3$ systems," *J.Non.Cryst.Solids*, 164-166, 1251 (1994).
29. **I. Abdulhalim**, C. N. Pannell, J. Wang, G. Wylangowski, D. N. Payne, "Acousto-optic modulation using a new chlorotellurite glass," *J.Appl.Phys.*, 75, 519 (1994).
30. **I. Abdulhalim**, - Continuous Phase-Only or Amplitude Light Modulation using Ferroelectric Liquid Crystals with Fixed Boundary Orientations, *Optic.Communi.*, 108, 219 (1994).
31. **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).
32. **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).
33. **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).
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 time-delay mode of operation of optoelectronic lateral effect position sensors, *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 Auslander 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).
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34. Gabby Sarusi, Tzvi Templeman, Elad Hechster, Nimrod Nissim, Vladimir Vitenberg, Nitzan Maman, Amir Tal, Assi solodar, Guy Makov, **Ibrahim Abdulhalim**, Iris Visoly-Fisher and Yuval Golan, Architecture, development and implementation of a SWIR to visible integrated up-conversion imaging device, Nanophotonics VI, Proc. of SPIE, Vol. 9884, 98840L · © 2016 SPIE · CCC code: 0277-786X/16/\$18 · doi: 10.1117/12.2231526. *Invited paper*
35. Michael Ney, **I. Abdulhalim**, Comprehensive Mote-Carlo Simulator for Optimization of Imaging Parameters for High Sensitivity Detection of Skin Cancer at the THz, Photonics West SPIE meeting-Nanoscale Imaging, Sensing, and Actuation for Biomedical Applications XIII, Proc. of SPIE Vol. 9721, 97210W · © 2016, doi: 10.1117/12.2209486.

7. Lectures and presentations at meetings and conferences

(a) Invited\plenary\keynote lectures at conferences\meetings

1. G. Moddel, 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.
2. **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), Firenze, May 1993.
3. A.B. Grudinin, D.J. Richardson, **I. Abdulhalim**, C.N. Pannell, D.N. Payne, Fibre Laser Source of Dual-Wavelength Femtosecond Pulses, 3rd Topical Meeting on Nonlinear Guided Wave Phenomena, Cambridge, UK, Sept. 19-22, 1993.
4. C.N. Pannell, **I. Abdulhalim**, Acousto-optic Components for Q-switched Fibre Lasers, Proceedings of the 18th Australian Conference on Optical Fibre Technology (ACOFT-18'93), 1993.
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.
7. D. Lusk, **I. Abdulhalim** and F. Placido, Omnidirectional reflection from Fibonacci quasi-periodic one dimensional photonic crystal, Meeting of the Optical Group within the IoP annual conference, Novel Techniques for Optical Thin Films, 14th November 2001.
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**, Coherence effects in full field optical coherence tomography, Meeting of the European Optical Society, Capri, Italy, Sept. 26-28, 2011. *Plenary lecture*
27. **I. Abdulhalim**, Enhancing the sensitivity of surface plasmon resonance sensors, NanoSensorPhotonics 2011 - Optical Biosensors, Nanobiophotonics and Diagnostics, Dead Sea, Nov. 5-9, 2011.
28. **I. Abdulhalim**, Advances in plasmonic techniques for biosensing, IoP conference on "Advanced Photonics Techniques in Soft Matter and Biology", London, Jan. 2013.
29. **I. Abdulhalim**, Low coherence full field interference microscopy or optical coherence tomography: recent advances, limitations and future trends, SPIE Optical Metrology, Munich, May 2013.
30. **I. Abdulhalim**, Advances in Liquid Crystal Devices for Non-Display Applications, ICONOLAT, Moscow June 2013.
31. **I. Abdulhalim**, Recent improvements in plasmonic biosensing techniques, Medinano-6, Lyon, France, Oct.29-30, 2013.
32. **I. Abdulhalim**, Enhanced Plasmonic Sensing with Metallic Nanosculptured Thin Films, NanoTechnology Seminars, Dead Sea, December 31, 2013.
33. **I. Abdulhalim**, Biomedical optical imaging assisted by liquid crystal devices, OPTO2014, Gdansk, Poland, 1-5 July, 2014. *Plenary lecture*
34. Avner Safrani, Asi Solodar, Iftach Klapp, Marwan Abuleil, Sivan Isaacs, Miri Gelbaor Kirzhner, **Ibrahim Abdulhalim**, Tailored liquid crystal devices for specific imaging applications, SPIE Optics and Photonics Conference, Liquid Crystals XVIII, San Diego, August 17th-21st, 2014. Paper 9182-26.

35. Marwan Abuleil and **I. Abdulhalim**, Tunable achromatic liquid crystal waveplates, 5th Workshop on Liquid Crystals for Photonics, Erice, September 2nd-7th, 2014, Italy.
36. A. Safrani, M. Abu Leil, S. Isaac, A. Solodar, I. Klapp, M. G. Kirzhner and **I. Abdulhalim**, Tailored liquid crystal devices for specific imaging applications, SPIE conference on Organic Photonics + Electronics, San Diego, August 014.
37. **I. Abdulhalim**, Sensitivity enhancement methods for nanoplasmonic sensing techniques, PalMathPhys-IV, Jerusalem, August 11-13, 2014.
38. **I. Abdulhalim**, Detecting large bio entities in water with nanoscale localized electromagnetic fields, Negev global issues 2015: Impact on energy, environment, health and water, May 27-June 1, 2015, BGU, Beer Sheba.
39. A. Li, S. Isaacs, C. Liow, **I. Abdulhalim**, and S. Li, Near Field Properties of Coupled Metallic Nanostructures, The 6th International Conference on Metamaterials, Photonic Crystals and Plasmonics, New York City, USA, August, (2015).
40. **I. Abdulhalim**, Tailoring the plasmonic evanescent wave to detect large and small bioentities at once, International conference in Small Science, Phuket Island, Thailand, Nov. 4-7, 2015.
41. **I. Abdulhalim**, Biomedical Optical Imaging and Biosensing Assisted by Liquid Crystal Devices, The 2nd Israeli Biophotonics Conference, Bar Ilan University, December 1-2, 2015.
42. **I. Abdulhalim**, Liquid crystal devices tailored to biomedical optical imaging applications, Annual Meeting of Taiwan liquid crystal society, Taoyuan, December 18, 2015. *Plenary lecture*
43. **I. Abdulhalim**, Liquid crystals photoalignment on chalcogenide glass thin film surfaces, Annual Meeting of Indian Liquid Crystal Society, Dehradun, Dec. 21-22, 2015.
44. **I. Abdulhalim**, Highly sensitive plasmonic and photonic techniques for environmental sensing, CREATE Joint Symposium "Creating Frontiers for Environmental Protection", NUS-Singapore, January 14, 2016.
45. **I. Abdulhalim**, Fast, wide range imaging system, Optotech, Tel Aviv, May 17-18, 2016.
46. **I. Abdulhalim**, Plasmonic Structures and Configurations for Strong Light Matter Interactions, EMN Light Matter Interactions, Singapore, May 10, 2016. *Keynote lecture*
47. **I. Abdulhalim**, High speed 3D imaging microscopy, profilometry and vibrometry at the nanoscale, Int. Conf. Small Science, Prague, June 25-29, 2016. *Keynote lecture*

(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.
48. 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.
49. 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.

50. 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.
51. 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.
52. 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.
53. Lior Liraz, Yoed Abraham, **I. Abdulhalim** and Zeev Zalevsky, Optical coherence tomography system with extended depth of focus, The 12th meeting on Optical Engineering and Science in Israel, Tel Aviv, March 23-24, 2009.
54. **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.
55. Olga Krasnykov, Mark Auslender, **I. Abdulhalim**, Assessment of Guided Mode Resonant Structures for Sensing, PIERS 26th conference, Moscow Aug.18-21, 2009.
56. 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.
57. Avner Safrani, Ofir Aharon, Shahar Mor, **I. Abdulhalim**, Polarimetric and spectral biomedical optical imaging assisted with specially developed liquid crystal devices, 13th Topical Meeting on the Optics of Liquid Crystals, Sept. 28th-Oct. 3rd, 2009, Erice, Italy.
58. A. Shalabney, A. Karabchevsky, C. Khare, Christian Patzig, Bernd Rauschenbach, A. Lakhtakia, and **I. Abdulhalim**, Optimization of Sculptured Thin Films for Optical Enhancement for Biosensing, MediNano-2, October 26-27, 2009, Athens, Greece.
59. A. Shalabney, and **I. Abdulhalim**, Optimization of Surface Plasmon Resonance Sensors, MediNano-2, October 26-27, 2009, Athens, Greece.
60. 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.
61. Ofer Arnon, Ofir Aharon, S. Mor, A. Safrani, A. Bogdanov-Berezovsky, L. Rosenberg and **I. Abdulhalim**, Detection of skin tumors with an optical spectro-polarimetric imaging system (OSPI). The 36th Annual Meeting of the Israel Society for Plastic Surgery, Tel Aviv, November 2009.
62. **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.
63. 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.
64. 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.

65. Shahar Mor, Vicente Torres-Costa, Raúl J. Martín-Palma, **I. Abdulhalim**, Infiltration of liquid crystal with planar polar geometry in nanostructured porous silicon 1D photonic crystals, NanoIsrael, November 2010, Tel Aviv.
66. A. Shalabney, A. C. Khare, Bernd Rauschenbach and **I. Abdulhalim**, Nano-Sculptured Thin Films for Surface Enhanced Raman Scattering Applications, NanoIsrael, November 2010, Tel Aviv.
67. Alina Karabchevsky, Lev Tsapovsky, Robert Marks and **I. Abdulhalim**, Endocrine Disruptor Nanolayer Detection using Surface Plasmon Resonance, NanoIsrael, November 2010, Tel Aviv. ***Won the excellent poster award.***
68. 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.
69. 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.
70. 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.
71. 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.
72. 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.
73. 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.
74. Atef Shalabney, A. Lakhtakia, C. Khare, B. Rauschenbach, 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.
75. 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.
76. **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. Oral.
77. 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. Oral.
78. 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.
79. 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.**

80. 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.**
81. 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. Poster.
82. 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. Poster.
83. 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.**
84. Hadar Reisman, Eugene P. Pozhidaev, Sofia I. Torgova and Ibrahim Abdulhalim, Improved Devices Based on Distorted Helix Ferroelectric Liquid Crystal Having Nanoscale Periodicity, NanoIsrael Conference, March 26-27, 2012 Tel Aviv. Poster.
85. M. Gelbaor, M. Klebanov, V. Lyubin, and **I. Abdulhalim**, The Use of Nano-Dimensional Chalcogenide Films as Photoalignment and Photosensor Layers for Optically Addressed Spatial Light Modulators, International Liquid Crystals Conference ILCC August 19-24, (2012), Mainz, Germany. Poster.
86. I. Abdulhalim, Hadar Reisman, Drew P. Pulsifer, Raúl J. Martín-Palma, Akhlesh Lakhtakia, Roman Dabrowski, Alignment of liquid crystals in nanoporous photonic crystals, International Liquid Crystals Conference ILCC August 19-24, (2012), Mainz, Germany. Oral.
87. Atef Shalabney and **Ibrahim Abdulhalim**, "Improving the performances of surface Plasmon resonance sensor in the infrared region by adding thin dielectric over-layer", IEEE 27th convention, Elat, Israel, November, 2012. Oral.
88. Atef Shalabney, Chinmay Khare, Bernd Rauschenbach, and **I. Abdulhalim**, "Metallic Nanosculptured Thin Films for Biosensing Applications using Surface Plasmon Resonance and Enhanced Spectroscopies", IEEE 27th convention, Elat, Israel, November, 2012. Oral
89. Hadar Reisman, Eugene P. Pozhidaev, Sofia I. Torgova and Ibrahim Abdulhalim, Nano-dimensional short pitch ferroelectric liquid crystal materials and devices with improved performance at oblique incidence, SPIE Optics and Photonics Conference, August 12-16, 2012, San Diego. Poster
90. Hadar Reisman, Drew P. Pulsifer, Raúl J. Martín-Palma, Akhlesh Lakhtakia, Roman Dabrowski, and Ibrahim Abdulhalim, On alignment of nematic liquid crystals in chiral sculptured thin films, SPIE Optics and Photonics Conference, August 12-16, 2012, San Diego. Poster. **Won the best poster award!**
91. Sachin K. Srivastava, Atef Shalabney, I. Khalailah, Christoph Grüner, B. Rauschenbach and **I. Abdulhalim**, SERS biosensor for endocrine disruption biomarker: Vitellogenin, Optical Engineering Conference, Netanya, February 2014. Oral.

92. Marwan J. Abu Leil, **I. Abdulhalim**, Birefringence measurement using rotating analyzer approach and phase quadrature crossing points, Optical Engineering Conference, Netanya, February 2014. Poster.
93. Sachin K. Srivastava, Atef Shalabney, I. Khalailah, Christoph Grüner, B. Rauschenbach and **I. Abdulhalim**, SERS biosensor for endocrine disruption biomarker: Vitellogenin, NanoIsrael, Tel Aviv, March 2014. Poster.
94. Ashok Chaudhary, Matvey Klebanov and **I. Abdulhalim**, PbS sculptured thin film and their effect on liquid crystals alignment, Proc. SPIE on Nanostructured Thin Films, August 2014. Oral.
95. **I. Abdulhalim**, Atef Shalabney, High index nanolayer effect on surface plasmon resonance sensors, ICCE-22, Malta, July 13-19, 2014. Oral.
96. Ashok Chaudhary, Matvey Klebanov and **I. Abdulhalim**, Effect of sculptured thin film on alignment of liquid crystals, ILCC-25, Dublin, June 29-July 4, 2014. Poster.
97. Ibrahim Watad and **Ibrahim Abdulhalim**, Polarimetric spectral surface plasmon resonance sensor, SPP7 conference, Jerusalem, June 2015.
98. Sachin K. Srivastava, Mark Auslender and **Ibrahim Abdulhalim**, Extra-ordinary Optical Transmission based self-referenced sensor utilizing nanosized metallic gratings, SPP7 conference, Jerusalem, June 2015.
99. Sachin K. Srivastava, Hilla Ben Hamo, Ariel Kushmaro, Robert S. Marks, Christoph Gruner, Bernd Rauschenbach and **Ibrahim Abdulhalim**, Nanosculptured thin films based SERS nanobiosensor for highly sensitive and specific detection of *E. coli*, Cleo Europe Conference, Munich, Germany June 15-21st, 2015. Oral
100. Ibrahim Watad, Mohamad A. Jabalee, Amir Aizen and **I. Abdulhalim**, Converting the total internal reflection sensor from edge into dip detection with theoretically unlimited figure of merit, International conference in Small Science, Phuket Island, Thailand, Nov. 4-7, 2015.
101. Mohammad Abu-Toama, **I. Abdulhalim**, Spectral and Angular Self-referenced Plasmonic Biosensor based on Thin Dielectric Grating Combined with Thin Metal Film, International conference in Small Science, Phuket Island, Thailand, November 4-7, 2015.
102. Michael Ney, **I. Abdulhalim**, Comprehensive Mote-Carlo Simulator for Optimization of Imaging Parameters for High Sensitivity Detection of Skin Cancer at the THz, Photonics West SPIE meeting-Nanoscale Imaging, Sensing, and Actuation for Biomedical Applications XIII, San Jose January 2016.

(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	Total Amount /My part (kUS\$)
MIT-BGU fund	1/2016-8/2017	Switchable Nanocomposite Liquid Crystal Smart Windows	MIT researchers: Prof. George Barbastathis, Prof. Gareth Mckinley	30/15
Kamin – Ministry of Trade and Industry	8/2015-7/2016	Compact spectropolarimetric imaging system for applications in skin cancer and industry		105/105
Metro450 – Ministry of Trade and Industry	7/2015-6/2016	Fast dynamic focusing unit		150/150
DFG-Trilateral	2/2015-2/2017	Metallic nano-STFs for biosensing	Prof. B. Rauschenbach, IoM-Leipzig, Prof. M. Abu Teir, Alquds University, Jerusalem, Prof. R.S. Marks, Biotechnology Dept.-BGU	420/75
Metro450 – Ministry of Trade and Industry	7/2014-6/2015	Fast dynamic focusing unit	Postdoc fellow Dr. Avner Safrani	103/103
Kamin – Ministry of Trade and Industry	5/2014-5/2015	Optical microscope for 3D imaging in real time	Postdoc fellow Dr. Avner Safrani	100/100
BSF (USA-Israel Binational Science Foundation)	10/2013-10/2016	Photoalignment and photoconductivity in nano dimensional chalcogenide films on liquid crystal heterostructures	Prof. Satyendra Kumar, Liquid Crystals Institute, Kent State University	153/105
Kamin – Ministry of Trade and Industry	5/2013-5/2014	Optical microscope for 3D imaging in real time	PhD student Avner Safrani	100/100
BGU-Cincinnati Kids Hospital	3/2013-9/2014	Microoptic Sensor in Catheter	Dr. Richard Azizkhan-CCHMC	100/100
FTA	1/2013-1/2018	Integrated infrared up-conversion devices using nano-plasmonic materials and nano-photonics structures	Interuniversity teams: BGU, HUJI, TAU, Weisman and Technion	6500/250
Tashtiot	11/2011-10/2014	3D Holographic imaging using advanced technology of spatial light modulators	Prof. Yosi Rosen, BGU	300/170
CREATE – NRF Singapore	7/2011 – 6/2016	Nanomaterials for energy and water management	BGU team, HUJI team and NTU-Singapore team	30000/70
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	50/25
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	45/45
Tashtiot	8/2007 - 8/2010	Water sensors and their integration into multimodal system for water quality control.	Prof. R. Marks and Prof. A. Kushmaru – Biotechnology Eng., BGU Prof. A. Brenner – Environm., Eng., BGU Mekorot – The Israeli water company	330/100
ISF equipment	10/2007-	LPCVD system for high quality	Dr. Adi Goldner – Physics,	750

	10/2010	coatings of dielectric thin films	BGU Dr. Nurit Ashkenazi – Materials Eng., BGU	
Intel higher education	10/2007	Optical microscope system	Dr. Gever Levi – Biotechnology Eng., BGU	40/20
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	320/200

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, Journal of Lightwave Technology

(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, Advanced Materials, Functional Materials, Small, Journal of Electromagnetism, Sensors and Actuators A&B, Biosensors

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.
4. Liquid Crystals beyond Displays, Chemistry, Physics, and Applications, edited by Quan Li, Hoboken, NJ, Wiley & Sons, 2012, 600 pp., ISBN1118078617. Review to Liquid Crystals Today, 22:1, 9-11, 2013.
DOI: [10.1080/1358314X.2013.813721](https://doi.org/10.1080/1358314X.2013.813721)

12. Research students and Postdocs

(a) Ph.D. Students

#	Student name	Graduation date	Thesis Title
1	Ofir Aharon	12/2011	Liquid crystal devices integrated in optical imaging systems for biomedical applications
2	Alina Karabschevsky	3/2012	Nanophotonic Structures for Optical Biosensing and Application in Water Quality Control
3	Atef Shalabney	3/2013	Optimization of Plasmonic and Nanophotonic structures for Biosensing
4	Avner Safrani	2/2014	Real time 3D imaging system
5	Michael Ney	12/2015	Modeling of reflectometric and ellipsometric spectra of the human skin in the sub-millimeter and THz to the micro wave region
6	Miri Gilbaor	Expected 3/2016	Liquid crystals photoalignment using chalcogenide glass thin films
7	Igal Balin	Expected 10/2017	Plasmonic structures and their optoelectronic applications
8	Sivan Issac	Expected 10/2018	Optical biosensors integrated with liquid crystal devices
9	Asi Solodar	Expected 10/2018	Unique liquid crystal spatial light modulators and their applications
10	Marwan AbuLeil	Expected 10/2018	Spectropolarimetric imaging system and applications for cancer diagnosis
11	Mohammad AbuToama	Expected 10/2019	Periodic photonics and plasmonic structures for biosensing
12	Ibrahim Watad	Expected 10/2019	Polarimetric SPR sensing techniques and applications

(b) M.Sc Students

#	Student name	Graduation date	Thesis Title
1	Ron Friedman	12/2007	Common path full field optical coherence tomography system
2	Ronen Dadon	12/2007	Application of frequency domain optical coherence tomography to optical metrology
3	Amit Lahav	6/2008	Photonic structures for optical sensor applications
4	Lior Leraz	1/2009	Incorporation of an annular aperture in an OCT system
5	Riki Moses	1/2009	Polarimetric and spectral skin imaging
6	Avner Safrani	8/2009	Spectropolarimetric systems for biomedical imaging and liquid crystal devices applications
7	Atef Shalabaney	7/2009	Surface Plasmon resonance biosensors with improved performance
8	Olga Krasnykov	4/2010	Nanophotonic structures for biosensing
9	Boris Epshtein	8/2010	Evaluation of photoplethysmography for blood glucose measurement
10	Rony Sharon	12/2010	Full field optical coherence tomography system with compensation
11	Michael Nye	6/2011	Modelling of scattering from skin in the THz and microwaves regions
12	Jenny Sokolovsky	11/2011	Analysis of Optical Coherence Tomography Interferograms of Multi-Layered Biological Samples
13	Shahar Mor	12/2011	Liquid crystals in nanostructured porous silicon 1D photonic crystals
12	Miri Gilbaor	2/2012	Liquid crystal devices integrated with thin film chalcogenide glasses
16	Hadar Reisman	5/2013	Intrinsic and structurally chiral liquid crystal devices
18	Sivan Isaac	1/2014	Improved liquid crystal Fabry-Perot tunable filter for biomedical applications
19	Asi Solodar	3/2014	Ring type liquid crystal spatial light modulator and its application for biomedical Imaging
20	Marwan Abu Leil	11/2014	Liquid crystal spectropolarimetric imaging system for skin diagnosis
21	Mohammad Jabali	5/2015	Bloch type surface electromagnetic wave optical sensor
22	Ansar Hajuj	9/2015	Thick dielectric grating based biosensor
23	Mohammad Awesat	3/2016	Design of plasmonic and photonic structures for biosensing and tunable filtering
24	Ibrahim Watad	2/2016	Multimodal plasmonic sensing system
25	Amir Aizen		Liquid crystal devices for high sensitivity electric and magnetic fields mapping
26	Naama Shukron		Annular liquid crystal SLM application in imaging and microscopy
27	Andrey Nazarov		Intraocular photonic pressure sensor

(c) Postdoc fellows/Researchers

#	Student name	Period	Research Topic
1	Iftach Klapp	8/2012-10/2016	Imaging systems and liquid crystal devices / EDOF system
2	Sachin Kumar Srivastava	11/2012-10/2015	Plasmonic biosensors
3	Arun Kumar Tatipamula	3/2013-9/2016	Liquid crystal devices
4	Ashok Chaudhary	10/2013-9/2015	Liquid crystal devices
5	Avner Safrani	10/2013-10/2015	3D real time imaging system
6	Itzik August	10/2014-10/2016	Extended depth of field system
7	Matoi Klevanov	2010-present	Chalcogenide glass thin films for LC photoalignment
8	Michael Ney	11/2015-present	3D real time microscopy and vibrometry/ MC simulations