

PEER REVIEWED PUBLICATIONS:

1. I. Barnea, L. Karako, S.K. Mirsky, M. Levi, M. Balberg, N.T. Shaked
Stain-free interferometric phase microscopy correlation with DNA fragmentation stain in human spermatozoa
[J. of Biophotonics, 11\(11\), 2018 \(e201800137\)](#)
2. P.J. Eravuchira, S.K. Mirsky, I. Barnea, M. Levi, M. Balberg, N.T. Shaked
Individual sperm selection by microfluidics integrated with interferometric phase microscopy
[Methods, 136, 2018 \(152-159\)](#)
3. M. Balberg, M. Levi, K. Kalinowski, I. Barnea, S.K. Mirsky, N.T. Shaked
Localized measurements of physical parameters within human sperm cells obtained with wide-field interferometry
[J. of Biophotonics, 10, 2017 \(1305-1314\)](#)
4. A. Tsalach, Z. Schiffer, E. Ratner, I. Breskin, R. Zeitak, R. Shechter, M. Balberg
Depth selective acousto-optic flow measurement
[Biomedical Optics Express, 6\(12\), 2015 \(4871-4886\)](#)
5. J.M. Murkin, M. Kamar, Z. Silman, M. Balberg, S.J. Adams
Intraoperative cerebral autoregulation assessment using ultrasound-tagged near-infrared-based cerebral blood flow in comparison to transcranial Doppler cerebral flow velocity: A pilot study
[J. of Cardiothoracic and Vascular Anesthesia, 29\(5\), 2015 \(1187-1193\)](#)
6. E. Eteshola, M. Balberg
Microfluidic ELISA; On-chip fluorescence imaging
[Biomedical Microdevices, 6\(1\), 2004 \(7-9\)](#)
7. C. Xi, M. Balberg, S.A. Boppart, L. Raskin
Use of DNA and peptide nuclei acid molecular beacons for detection and quantification in rRNA in solution and in whole cells
[Applied and Environmental Microbiology, 69\(9\), 2003 \(5673-5678\)](#)
8. D. Azulay, M. Eylon, O. Eshkenazi, D. Toker, M. Balberg, N. Shimoni, O. Millo, I. Balberg
Electrical-thermal switching in carbon-black-polymer composites as a local effect
[Physics Review Letters, 90\(23\), 2003 \(236601-\)](#)
9. J. Zou, M. Balberg, C. Byrne, C. Liu, D.J. Brady
Optical properties of surface micromachined mirrors with etch holes
J. of Microelectromechanical Systems, 8(4), 1999 (506-513)
10. G. Barbastathis, M. Balberg, D.J. Brady
Confocal microscopy with a volume holographic filter
[Optics Letters, 24\(12\), 1999 \(811-813\)](#)
11. M. Balberg, M. Razvag, E. Refaeli, A.J. Agranat
Electric-field multiplexing of volume holograms in paraelectric crystals
Applied Optics, 37(5), 1998 (841-847)
12. A.J. Agranat, M. Razvag, M. Balberg
Dipolar holographic gratings induced by the photorefractive process in

- Potassium lithium tantalite niobate at the paraelectric phase*
J. Optical Society of America B, 14(8), 1997 (2043-2048)
13. A.J. Agranat, M. Razvag, M. Balberg, G. Bitton
Holographic gratings by spatial modulation of the Curie-Weiss temperature in photorefractive $K_{1-x}Li_xTa_{1-y}Nb_yO_3:Cu,V$
Physical Review B, 55(19), 1997 (12818-12821)
 14. M. Balberg, M. Razvag, S. Vidro, E. Refaeli, A.J. Agranat
Electroholographic neurons implemented on potassium lithium tantalite niobate crystals
Optics Letters, 21(19), 1996 (1544-1546)
 15. A.J. Agranat, M. Razvag, M. Balberg
Photorefractive hologram fixing by a 4 K cooldown to the phase transition in $K_{1-x}Li_xTa_{1-y}Nb_y$
Applied Physics Letters, 68, 1996 (2469-2471)

CHAPTERS IN BOOKS

1. I. Steinberg, A. Shoval, M. Balberg, A. Sheinfeld, M. Tepper, I. Gannot
Deep tissue imaging: Acoustic and thermal wave propagation and light interactions in tissue
In: Deep Imaging in Tissue and Biomedical Materials
L. Shi, R. Alfano (eds.) CRC Press, 2017 [[ISBN: 978-9814745888](https://doi.org/10.1002/9781119458888)]

PAPERS PRESENTED AT SCIENTIFIC MEETINGS PUBLISHED IN PROCEEDINGS

1. M. Razvag, M. Balberg, A.J. Agranat
Fixing of photorefractive gratings in KLTN by a 4 K cooldown to the phase transition
Proc. Conf. on Lasers and Electro-Optics (CLEO '96)
Anaheim, CA, USA, 2-7 June 1996 (page 71)
2. M. Razvag, M. Balberg, A.J. Agranat
Dipolar photorefractive gratings in paraelectric $K_{1-x}Li_xTa_{1-y}Nb_yO_3$
Proc. Conf. on Lasers and Electro-Optics (CLEO '96)
Anaheim, CA, USA, 2-7 June 1996 (479-480)
3. M. Balberg, M. Razvag, E. Refaeli, A.J. Agranat
Multiplexing of holograms in paraelectric $K_{1-x}Li_xTa_{1-y}Nb_yO_3$ crystals
by an external electric field
Topical Meeting on Photorefractive Materials, Effects and Devices
Japan 1997 (paper FP22)

4. G. Bitton, M. Razvag, M. Balberg, A.J. Agranat
Compensation of regular photorefractive gratings by a spatial modulation of Curie-Weiss temperature in $K_{1-x}Li_xTa_{1-y}Nb_yO_3:Cu,V$
Topical Meeting on Photorefractive Materials, Effects and Devices
Japan 1997 (paper WP17)
5. M. Balberg, M. Razvag, S. Vidro, E. Refaeli, A.J. Agranat
The concept of electroholography and its implementation in KLTN crystals
Geoffrey Burdge, Sadik C. Esener (eds.)
OSA Topics Spatial Light Modulators, 14, 1997 (118-120) [invited]
6. M. Balberg, M. Razvag, A.J. Agranat
Electric field multiplexing in paraelectric $K_{1-y}Li_yTa_{1-x}Nb_xO_3$ crystals
Conf. on Lasers and Electro-Optics (CLEO '97)
Baltimore, MD, USA, 18-23 May 1997
OSA Technical Digest Series (Optical Society of America, Washington DC)
11, 1997 (8-9)
7. G. Barbastathis, M. Balberg
Super-resolved imaging architectures with volume holograms
Biomedical Optics: New Concepts in therapeutic Laser Applications, Novel Biomedical Optical Spectroscopy, Imaging and Diagnostics, Advances in Optical Imaging, Photon Migration and Tissue Optics
OSA Technical Digest (Optical Society of America, Washington DC)
1999 (175-177)
8. M. Balberg, G. Barbastathis, D.J. Brady, B.K. Choi, C. Liu
Holographic 3D imaging of microstructures
Proc. SPIE 3801, 1999 (202-207)
Conf. Photorefractive Fiber and Crystal Devices: Materials, Optical Properties and Applications V
Denver, CO, USA, 18 July 1999
9. M. Balberg, K. Hristova, M. Mau, D. Frigon, H.C. Zeringue, D.J. Brady, D.J. Beebe, L. Raskin
Multicolor fluorescence detection of ribosomal RNA in microchannels
Proc. SPIE 3912, 2000 (35-49)
Conf. Micro- and Nanotechnology for Biomedical and Environmental Applications
San Jose, CA, USA, 22 January 2000
10. M. Balberg, G. Barbastathis, S. Fantini, D.J. Brady
Confocal imaging through scattering media with a volume holographic filter
Proc. SPIE 3919, 2000 (69-74)

Conf. Three-Dimensional and Multidimensional Microscopy: Image Acquisition Processing VII
San Jose, CA, USA, 22 January 2000

11. M. Balberg, K. Hristova, D.J. Brady, D.J. Beebe, L. Raskin
Optical detection of molecular beacons in microfluidic devices
Proc. 1st Annual Int'l. IEEE-EMBS Special Topic Conf. on Microtechnologies
in Medicine & Biology
Lyon, France, 12-14 October 2000 (425-428) [poster 104]
12. C. Xi, M. Balberg, J. Selby, S. Boppart, L. Raskin
Use of molecular beacons to study mixing and hybridization in microfluidic devices
Proc. 2nd Annual Int'l. IEEE-EMBS Special Topic Conf. on Microtechnologies
in Medicine & Biology
Madison, Wisconsin, USA, 2-4 May 2002 (541-544) [poster 203]
13. S.A. Boppart, A. Zysk, A. Schaefer, J. Reynolds, D. Marks, M. Balberg, L. Raskin
Structural and functional imaging of microfluid BioMEMS using an integrated optical coherence
tomography and multi-photon microscope
Conf. on Lasers and Electro-Optics (CLEO '02)
Long Beach, CA, USA, 19-24 May 2002, 1, 2002 (476-477)
14. A. Nini, M. Balberg, R. Shechter, I. Breskin, M. Rokni, Y. Metzger, N. Ko
The Pacifica oximeter: A novel spectrophotometric device for monitoring tissue oxygen saturation
5th Annual Meeting, Neurocritical Care Society, Las Vegas, Nevada, USA 2-3 November 2007
J. Neurocritical Care, 8, 2008
15. N. Racheli, A. Ron, Y. Metzger I. Breskin, G. Enden, M. Balberg, R. Shechter
Non-invasive blood flow measurements using ultrasound modulated diffused light
Proc. SPIE 8223 (paper 82232A)
Conf. Photons Plus Ultrasound: Imaging and Sensing
San Francisco, CA, USA, 21 January 2012
16. A. Ron, N. Racheli, I. Breskin, Y. Metzger, Z. Silman, M. Kamar, A. Nini, R. Shechter, M. Balberg
Measuring tissue blood flow using ultrasound modulated diffused light
Proc. SPIE 8223, 2012 (paper 82232J)
Conf. on Photons Plus Ultrasounds: Imaging and Sensing
San Francisco, CA, USA, 21 January 2012
17. M. Balberg, K. Kalinowski, M. Levi, N.T. Shaked
Using quantitative interference phase microscopy for sperm acrosome evaluation
Proc. SPIE 9718 (paper 97180W)
Conf. on Quantitative Phase Imaging II

San Francisco, CA, USA, 13 February 2016

18. A. Tsalach, Z. Schiffer, E. Ratner, I. Breskin, R. Zeitak, R. Shechter, M. Balberg
Depth discrimination in acousto-optic cerebral blood flow measurement simulation
Proc. SPIE 9708, 2016 (paper 97083F)
Conf. on Photons Plus Ultrasound: Imaging and Sensing
San Francisco, CA, USA, 15 March 2016 [poster]
19. M. Balberg, R. Shechter, P. Girshovitz, I. Breskin, S. Fantini
Simultaneous and co-localized acousto-optic measurements of spectral and temporal properties of diffusive media
Proc. SPIE 10059, 2017 (paper 1005903)
Conf. on Optical Tomography and Spectroscopy of Tissue XII
San Francisco, CA, USA, 28 January 2017
20. M. Balberg, P. Girshovitz, N. Racheli, R. Shechter, S. Fantini
The effects of blood flow velocity and blood volume on acousto-optic signs
OSA Biophotonics Congress: Biomedical Optics
Hollywood, FL, USA, 3-6 April 2018 [poster]
21. M. Balberg, R. Shechter
Acousto optics for cerebral blood flow monitoring
Proc. OSA Biophotonics Congress: Optics in Life Sciences – Optics and the Brain
Tucson, Arizona, USA, 14-17 April 2019 (paper BW1A.1) [invited]
22. D. Patashov, D. Goldstein, M. Balberg
Homologous connectivity maps can discriminate diseased from healthy brains
Proc. OSA Biophotonics Congress: Optics in Life Sciences – Optics and the Brain
Tucson, Arizona, USA, 14-17 April 2019 (paper BW4A.3)