

Refereed papers in professional journals (chronological order)

1. Schächter L. and Schieber D.
Electrodynamics of Solid Rotor Induction Machine with Stator Losses,
Electric Machines and Power Systems, **12** p. 13-25, (1987).
2. Schächter L.
Relativistic Quantum Mechanical Analysis of a Free Electron Laser,
J. Appl. Phys., **61** (8), pp. 2718-2728, April 1987.
3. Schächter L.
Remarks on Channeling Radiation.
J. Appl. Phys., **63** (3), 712-716, (1988).
4. Schächter L. and Ron A.
Exponential Gain in a Smith-Purcell Amplifier.
Appl. Phys. Lett., **53**, 828-830 (1988).
5. Schächter L. and Ron A.
Smith-Purcell Oscillator in an Exponential Gain Regime,
J. Appl. Phys. **65**, 3267-3269 (1989).
6. Schächter L. and Ron A.
Smith-Purcell Free Electron Laser.
Phys. Rev. A **40** (2) 876-896 (1989).
7. Schächter L.
Remarks on the Influence of the Guiding Magnetic Field on the Performance of a Smith-Purcell Amplifier Operating in the Weak Compton Regime.
J. Opt. Soc. Am. B Opt. Phys.(USA) Vol. **7**(5), 873-876(1990).
8. Schächter L.
The Influence of the Guiding Magnetic Field on the Performance of a Smith-Purcell Amplifier Operating in the Strong Compton Regime.
J. Appl. Phys. **67**, 3582-3592(1990).
9. Schächter L., Nation J. A. and G. S. Kerslick.
On the Bandwidth of Short Traveling Wave Tubes.
J. Appl. Phys., **68**(11) 5874-5882 (1990).
10. Schächter L. and Schieber D.
Scattering by Rotating Optical Fibers.
J. Electromagnetic Waves and Appl. **5**(5), 607-622 (1991).
11. Schächter L.
Cerenkov Traveling Wave Tube with a Spatially Varying Dielectric Coefficient.
Phys. Rev. A. **43**(7) 3785-3794(1991).
12. Shiffler D., Ivers J.D., Kerslick G. S., Nation J.A. and Schächter L.
A Two Stage High-Power Traveling-Wave Tube Amplifier.
Appl. Phys. Lett. **58**, 899-901(1991).
13. Shiffler D., Ivers J.D., Kerslick G.S., Nation J.A. and Schächter L..
A High Power Two Stage Traveling-Wave Tube Amplifier.
J. Appl. Phys. **70**(1), 106-113(1991).
14. Schächter L., Nation J.A. and Shiffler D.
Theoretical Studies of High-Power Cerenkov Amplifiers.
J. Appl. Phys. **70**(1), 114-124(1991).

15. Schächter L. and Nation J.A.
Analysis of a Traveling Wave Tube Tuned by a Cavity.
J. Appl. Phys. **70**(10), 5186-5192(1991).
16. Schächter L. and Nation J.A.
Slow Wave Amplifiers and Oscillators: A Unified Study.
Phys. Rev. A. **45**(12) 8820-32(1992).
17. Ivers J.D., Nation J.A., Kerslick G.S., Advani R. and Schächter L.
Electron Beam Using Ferroelectric Cathodes.
J. Appl. Phys. **73**(6) 2667-2671(1993).
18. Schächter L., Ivers J.D., G.S. Kerslick and Nation J.A.
The Analysis of a Diode with a Ferroelectric Cathode.
J. Appl. Phys. **73**(12) 8097-8110(1993).
19. Davis T.J., Nation J.A. and Schächter L.
High Power Microwaves at 9GHz from an Extended Length Cavity in a Coaxial Beam Geometry.
Appl. Phys. Lett. **63**(13) 1854-1856 (1993).
20. Kuang E., Davis T.J., Kerslick G. S., Nation J.A. and Schächter L.
Transit Time Isolation of a High Power Microwave Amplifier TWT.
Phys. Rev. Lett. **71**(16) 2666-2669(1993).
21. Schächter L. and Nation J.A.
An Analytical Method for Studying Quasiperiodic Disk Loaded Waveguide.
Appl. Phys. Lett. **63**(17),2441-2443 (1993).
22. Davis T.J., Nation J.A. and Schächter L.
Results from an X-Band Coaxial Extended Length Cavity.
IEEE - Trans. Plasma Science, **22**, 504-510, (1994).
23. Kuang E., Davis T.J., Kerslick G.S., Nation J. A. and Schächter L.
Low Group Velocity Traveling Wave Tube Amplifier.
IEEE - Trans. Plasma Science, **22**, 511-517 (1994).
24. Schächter L. and Nation J.A.
Propagation of Electromagnetic and Space Charge Waves in Quasi-periodic Structures.
Physics of Plasmas, Vol. 2, p.889-901 (1995).
25. Schächter L. and Nation J.A.
On the Coupling Between a Quasi-periodic Structure and an Asymmetric Output Arm, IEEE-MTT, **43**(1), 42-47 (1995).
26. Schächter L.
PASER: Particle Acceleration by Stimulated Emission of Radiation,
Phys. Lett. A ., **205**, p. 355-358(1995).
27. Schächter L.
High Efficiency Beam-Wave Interaction in Quasi-Periodic Structures
Phys. Rev. E. **52**, p.2037-2044 (1995).
28. Schächter L.
Particle Acceleration in an Active Medium
Phys. Rev. E. **53**, p. 6427-6434 (1996).

29. Naqvi S.A., Kerslick G.S., Nation J.A. and Schächter L.
Resonance Shift in Relativistic Traveling Wave Amplifiers
Phys. Rev. E. **53** (4) p.4229-4231 (1996).
30. Naqvi S.A., Kerslick G.S., Nation J.A. and Schächter L.
Axial Extraction of High-power Microwaves from Relativistic Traveling Wave Amplifiers
Appl. Phys. Lett. **69**(11), p. 1550-2 (1996).
31. Berger S., Schächter L. and Tamir S.
Photo-luminescence as a Surface Effect in Nano-structures
Nano-structured Materials, Vol. **8**(2) p.231-242, (1997).
32. Schächter L. and Schieber D.
On the Characteristics of the Cerenkov and Ohm Forces.
Nuclear Instruments and Methods in Physics Research A, **388**, pp.8-16 (1997).
33. Flechtner D., Golkowski C., Ivers J., Kerslick G., Nation J.A. and Schächter L.
Electron Emission from Lead-Zirconate-Titanate (PZT) Ceramics
J. Appl. Phys. **83**(2) p.955-961 (1998).
34. Schächter L.
Analytic Expression for Triple-Point Electron Emission from an Ideal Edge
Applied Physics Letters, **72**(4) p. 421-3 (1998).
35. Schieber D. and Schächter L.
Reaction Forces on a Point-Charge Moving above Dielectric or Metallic Half-Spaces
Physical Review E., **57**, pp.6008-6015 (1998).
36. Schächter L. and J.A. Nation
Beam-quality and Guiding Magnetic Field Requirements for a High-Power Traveling Wave Amplifier Operating at 35GHz.
Physical Review E, **57**, pp.7176-7183(1998).
37. Golkowski Cz., Flechtner D., Ivers J., Nation J. and Schächter L.
Annular Electron Beam Generation Using a Ferro-electric Cathode.,
IEEE Trans. Plasma Science - Special Issue, Vol.26(3) p. 835-9(1998).
38. Naqvi A.S., Nation J.A., Schächter L. and Wang Q.
High Efficiency TWT Design Using Traveling-Wave Bunch Compression
IEEE Trans. Plasma Science - Special Issue, Vol.26(3) p. 840-5(1998).
39. Schächter L., Fletchner D., Golkowski Cz., Ivers J.D. and Nation J. A.
Theoretical Study of a Diode with Dielectric-Gridded Cathode,
J. Appl. Phys., 84(12) p. 6528-6535 (1998).
40. B. Haddad and L. Schächter
Optimal Geometry for Electron Emission from a Metallic Grating
Appl. Phys. Lett., 74 p. 1180-2 (1999).
41. Nation J.A., Schächter L., Mako F., Len L., Peter W., Cha-Mei Tang and Triveni Srinivasan-Rao
Advances in Non-Thermionic Cathode Physics and Technology
Proceedings of the IEEE, Vol. 87(5), p. 865-889 (1999).

42. Ramesh P.D, Brandon D.G. and Schächter L.
Use of Partially Oxidized SiC Particle Bed for Microwave Sintering of Low-Loss Ceramics
Materials Science & Engineering A , vol. 216(1-2), pp. 211-220, 1999.
43. Schächter L.
Amplification of a Wake-Field Generated by a Charged Bunch in a Resonant Medium
Phys. Rev. Lett., 83(1), p. 92 (1999).
44. J.D. Ivers, D. Fletcher, Cz. Golkowski, G. Liu, J.A. Nation, and L. Schächter
Electron Beam Generation Using a Ferro-electric Cathode
IEEE Trans. Plasma Sci., PS-27(3) p.707-713(1999).
45. Wang P., Zhou Xu, Ivers J.D., Nation J.A, Naqvi S., and Schächter L.;
Efficient Operation of X-band Traveling Wave Tube Amplifier
Appl. Phys. Lett., 75(16), p.2506-7 (1999).
46. Tadmor A. and Schächter L.
Optimized Single-Mode Cavity for Ceramics Sintering.
IEEE Trans. on Microwave Theory and Techniq., Vol.47, no.9, pp. 1634, (1999)
47. Schächter L. and Nation J.A.
Limiting Current from a Metallic Ideal Edge Attached to a Dielectric Edge
Appl. Phys. Lett., 75(20), p.3084-6(1999).
48. Schächter L. and Schieber D.
Maximum Gradients on a Charged-Line Moving above a Corrugated Surface of Arbitrary Geometry,
Nuclear Instruments and Methods in Physics Research A 440 pp.1-4(2000)
49. Banna S., Nation J.A., Schächter L. and Wang P.
The Coupling of TM_{01} and HEM_{11} in a High-Power, High-Efficiency Traveling Wave Amplifier
Physical Review E, 61(4), p.4445 (2000).
50. Schächter L.
Hybrid Cerenkov Mode in a Resonant Medium
Physical Review E, 62(1), p.1252 (2000).
51. Lahav A., Berezovsky V. and Schächter L.
Energy Coupling in a Diode with a Dielectric-gridded Cathode
J. Appl. Phys., 88(6), p.3202 (2000).
52. Lasri J., Ramesh P.D. and Schächter L.
Energy Conversion During Microwave Sintering of Ceramic Surrounded by a Susceptor
Journal of American Ceramic Society, 83 (6), p.1465-8 (2000).
53. Banna S., Nation J.A., Schächter L. and Wang P.
The Interaction of Symmetric and Asymmetric Modes in a High-Power Traveling Wave Amplifier
IEEE Plasma Science - Special Issue, Vol. 28, p. 798-811 (2000).
54. Schächter L.
Resistive Absorption Instability
Phys. Lett. A, **277**, 65-69 (2000).

55. Wang P., Zhou Xu, Nation J.A., Banna S. and Schächter L.
Symmetric and Asymmetric Mode Interaction in High-Power Traveling Wave Amplifiers
IEEE Trans. Plasma Science, Vol.**28** (6), p.2262-2271 (2000).
56. Schächter L., Colby E. and Siemann R.H.
Saturation of Bunch-Wave Interaction in an Active Medium
Physical Review Letters, **87**, 134802 (2001).
57. D. Schieber and Schächter L.
Wake-Field of an Electron Bunch Moving Parallel to a Dielectric Cylinder
Physical Review E, **64**, 056503 (2001).
58. Y. Hayashi, X. Song, J. D. Ivers, D.D. Flechter, J. A. Nation, and L. Schächter
High power generation using a ferroelectric cathode electron gun,
IEEE Trans. on Plasma Science, **Vol.29** (4), 599 – 603 (2001).
59. Schächter L. and D. Schieber
Decelerating Field on a Bunch Moving in a Periodic Symmetric Structure
Physics Letters A., **293**, p.17-22 (2002).
60. S. Banna, and L. Schächter
An analytic method for evaluation of the field of a charge traversing a geometric discontinuity
Appl. Phys. Lett. **80**, 2842 (2002).
61. S. Banna, L. Schächter and D. Schieber
Wake-Field Generated by a Line Charge Moving in the Vicinity of a Dielectric Cylinder.
Nuclear Instruments and Methods in Physics Research A, **489** pp. 18-31 (2002).
62. A. Lahav, V. Berezowski and L. Schächter
Magnetic Insulation of a Space-Charge Dominated Flow
Journal of Applied Physics, Vol. **94**(7), p. 4251-6(2003)
63. L. Schächter
Wake-Field in Dielectric Acceleration Structures
Physical Review E **68**, 036502 (2003)
64. S. Banna, D. Schieber and L. Schächter
Wall Roughness Effects on an Electron Bunch
Applied Physics Letters, Vol.**84**(5) 723-5 (2004)
65. A. Mizrahi and L. Schächter
Optical Bragg Accelerator, Physical Review E, **70**, 016505 (2004)
66. L. Schächter
Energy Recovery in an Optical Linear Collider,
Physical Review E **70**, 016504 (2004).
67. S. Banna, D. Schieber and L. Schächter
Electromagnetic Wake-field due to Surface Roughness in an Optical Structure
J. of Appl. Phys. **95**(8) 4415-4426 (2004).
68. A. Mizrahi and L. Schächter
Bragg Reflection Waveguide with a Matching Layer,
Optics Express, Vol. **12**(14), 3156 (2004).

69. Dovrat A., Berenson R., Bormusov E., Lahav A., Lustman T., Sharon N. and Schächter L.
Localized Effects of Microwave Radiation on the Intact Eye Lens in Culture Conditions
Bioelectromagnetics; 26:398-405(2005).
70. Schächter L. and D. Schieber
Suppression of Synchrotron Radiation
Phys. Lett. A., Vol. 344/5 pp. 324-330 (2005).
71. Banna S., Ludwig A. and Schächter L.
Wake-field in an Array of Metallic Posts: Possible Application for Beam Position Monitoring
Nuclear Instruments and Methods in Physics Research A 555, 101–112 (2005).
72. Mizrahi A. and L. Schächter
Mirror Manipulation by Attractive and Repulsive Forces of Guided Waves
Optics Express, Vol. 13(24) 9804 (2005).
73. V. Karagodsky, A. Mizrahi and L. Schächter
Thermal Scaling Laws of the Optical Bragg Acceleration Structure
Physical Review Special Topics – Accelerators and Beams: **9**, 051301 (2006).
74. Mizrahi A. and Schächter L.
Electromagnetic forces on the dielectric layers of the planar optical Bragg acceleration structure,
Physical Review E, 74, 036504, (2006)
75. Banna S., Berezovsky V. and Schächter L.
Experimental Observation of Direct Particle Acceleration by Stimulated Emission of Radiation
Physical Review Letters, 97, 134801 (2006).
76. Banna S., Berezovsky V. and Schächter L.
Particle Acceleration by Stimulated Emission of Radiation: Theory and Experiment
Physical Review E, 74, 046501 (2006)
77. Mizrahi A. and Schächter L.
Two-slab all optical spring,
Optics Letters, Vol. 32(6), pp. 692-4 (2007)
78. Abdo B. and Schächter L.
Enhancement of the allowed gradient in a dielectric-loaded superconducting cavity.
Appl. Phys. Lett. **91**, 143506 (2007).
79. Bormusov, E., Andley, U., Sharon, N., Schächter L., Lahav A., and Dovrat, A.
Non-Thermal Electromagnetic Radiation Damage to Lens Epithelium
The Open Ophthalmology Journal, **2**, 94-98 (2008).
80. Levi Schächter
An analytic model for the electrostatic contribution of the electron cloud to the vertical tune-shift
Nuclear Instr. and Methods in Physics Research A, **592**(3). 125-140 (2008).

81. A. Mizrahi, M. Horowitz and L. Schächter
Torque and longitudinal force exerted by Eigen-modes on circular waveguides
Physical Review A **78**: 023802 (2008).
82. L. Schächter
Collisions of the Second Kind in a Penning Trap
Physical Review Letters **102**: 034801 (2009).
83. S. Banna, A. Mizrahi and L. Schächter
PASER – particle acceleration by stimulated emission of radiation: theory, experiment, and future applications
Laser & Photon. Rev. **3**, No. 1–2, 97–123 (2009).
84. V. Karagodsky, D. Schieber and L. Schächter
Enhancing X-Ray Generation by Electron-Beam Laser Interaction in an Optical Bragg Structure
Physical Review Letters, **104**: 024801 (2010).
85. V. Karagodsky and L. Schächter
High efficiency x-ray source based on inverse Compton scattering in an optical Bragg structure
Plasma Physics and Controlled Fusion, **53**: 014007 (2011).
86. L. Schächter
Optical injector based on particle acceleration by stimulated emission of radiation in a Penning trap
Plasma Physics and Controlled Fusion, **53**: 014010 (2011).
87. L. Schächter
Electrons' Dynamics in the Presence of an Active Medium Incorporated in a Penning Trap
J. Appl. Phys. 109, 054907 (2011).
88. V. Berezovsky, H. Alam and L. Schächter
Particle Acceleration by Stimulated Emission of Radiation in the Vicinity of a Solid-State Active Medium
Physics Letters A: 375, 256-259 (2011).
89. A. Reiser and L. Schächter
Enhanced Emission of Blackbody Radiation due to Geometric Effects
Physical Review A **87**, 033801 (2013).
90. M. Voin and L. Schächter
Enhanced Cerenkov Wake Amplification by Active Medium
Physical Review Letters, **112**, 054801 (2014).
91. M. Ben Yakir-Blumkin, Y. Loboda, L. Schächter and J. P. M. Finberg
Neuroprotective Effect of Weak Static Magnetic Fields in Primary Neuronal Cultures
Neuroscience. 2014 Oct 10;278:313-26.
doi: 10.1016/j.neuroscience.2014.08.029. Epub 2014 Aug 27.
92. M. Voin, W. D. Kimura and L. Schächter
2D theory of wakefield amplification by active medium
Nuclear Instruments and Methods in Physics Research A (NIMA) **740**, 117-123 (2014).

93. Z. Toroker, M. Void and L. Schächter
Nonlinear wake amplification by an active medium in a cylindrical waveguide using a modulated trigger bunch.
High Power Laser Science and Engineering Vol. 2, e29 (2014).
94. A. Hanuka and L. Schächter
Bragg Accelerator Optimization
High Power Laser Science and Engineering Vol. 2, e24 (2014).
95. A. Hanuka, B. Blankrot, L. Karabchevsky, E. Shoshan, L. Schächter, W. Hilo, D. Briscoe,
Eyelid Motion Monitor
Investigative Ophthalmology & Visual Science (IF 3.427),
Vol.55, 3103, 2014.
96. R. Joel England, Robert J. Noble, Karl Bane, David Dowell, Cho-Kuen Ng, James E. Spencer, Sami Tantawi, Ziran Wu, Robert L. Byer, Edgar Peralta, Ken Soong, Chia-Ming Chang, Behnam Montazeri, Stephen J. Wolf, Benjamin Cowan, Jay Dawson, Wei Gai, Peter Hommelhoff, Yen-Chieh Huang, Chunguang Jing, Christopher McGuinness, Robert B. Palmer, James Rosenzweig, Gil Travish, Amit Mizrahi, Levi Schächter, Christopher Sears, Gregory R. Werner, Rodney B. Yoder
Dielectric laser accelerators
Review of Modern Physics, 86, 1337-1388 (2014).
97. Schächter L. and Kimura W. D.
Vacuum Channeling Radiation by Relativistic Electrons in a Transverse Field of a Laser-Based Bessel Beam
Physical Review Letters, **114**, 195501 (2015).
98. M. Voin and L. Schächter
Linear analysis of active-medium two-beam accelerator
Physical Review Special Topics—Accelerators and Beams **18**, 071302 (2015).
99. Z. Toroker and L. Schächter
Deep saturation of a Cerenkov wakefield amplified by an active medium.
Phys. Rev. Special Topics - Accelerators and Beams **18**, 071301 (2015).
99. Z. Toroker and L. Schächter
Deep saturation of a Cerenkov wakefield amplified by an active medium.
Phys. Rev. Special Topics - Accelerators and Beams **18**, 071301 (2015).
100. Anthony C. Boucouvalas, Alan Wilner, Michael Zervas, Stuart Walker and Levi Schächter - Guest Editors.
Introduction to the Issue on Optical Waveguide Technology and Applications
IEEE J. of Selected Topics in Quantum Electronics Vol. 22 (2), (2016).
101. Ilya Sister, Yehuda Leviatan and Levi Schächter
Evaluation of blackbody radiation emitted by arbitrarily shaped bodies using the source model technique
Optics Express A589, Vol. 25, No. 12 (2017)
102. Schächter L. and Kimura W. D.
Quasi-monoenergetic ultrashort microbunch electron source
Nuclear Inst. and Methods in Physics Research, A 875, 80-86 (2017).

103. Adi Hanuka, Maor Itzhak, Alon Berger, Moni Orbach, Eli Shoshan, Levi Schächter and Daniel Briscoe,
A Novel Eyelid Motion Monitor,
Graefe's Archive for Clinical and Experimental Ophthalmology
Volume 255, Issue 9, pp 1811–1817 (2017)
104. A. Hanuka and L. Schächter,
Critical Phenomenon in Tapered Dielectric Structures
Optics Letters, 42, 4458-4461, (2017).
105. A. Hanuka and L. Schächter,
Trapping of Sub-relativistic Particles in Laser Driven Accelerators
Physics of Plasmas 24(12): 123116 (2017)
106. A.Hanuka and L. Schächter,
Operation Regimes of a Dielectric Laser Accelerator
Nuclear Inst. And Methods in Physics Research, A 888 (2018) 147-152
107. A. Hanuka , E. Goldemberg, A. Zilka and L. Schächter,
Metamaterials for Optical Bragg Structures,
Applied Physics Letters 112, 101902 (2018)
108. A. Hanuka and L. Schächter,
Optimized Operation of Dielectric Laser Accelerators: Single Bunch
Physical Review Accelerators and Beams, 21, 054001 (2018)
109. A. Hanuka and L. Schächter,
Optimized Operation of Dielectric Laser Accelerators: Multi Bunch
Physical Review Accelerators and Beams, 21, 064402 (2018).
110. A. Hanuka, D. Edstorm, J. Santucci, L. Schächter and J. Ruan,
Amplification of flat laser pulse train
Optics Express, vol 26, 30818-30825 (2018).
111. A. Hanuka, K. P. Wootton, Z. Wu, K. Soong, I.V. Makasyuk, R. J. England and L. Schächter;
Cumulative Material Damage from Train of Ultrafast Infrared Laser Pulses
High Power Laser Science and Engineering, 2019, Vol. 7, 7e
doi:10.1017/hpl.2018.62
112. Huang Hua and Levi Schächter;
Radial Kick in High-Efficiency Output Structures
Special Issue on High Power Microwave
Plasma 2019, 2, 15–26;
doi:10.3390/plasma2010003
113. Moriya Ben Yakir Blumkin, Yelena Loboda, Levi Schächter and John P.M. Finberg;
*Static Magnetic Field Exposure **In Vivo** Enhances the Generation of New Doublecortin-expressing Cells in the Sub-ventricular Zone and Neocortex of Adult Rats.*
Neuroscience, Volume 425, 15 January 2020, Pages 217-234
114. Levi Schächter and Wayne D. Kimura
Electron Beam Guiding by a Laser Bessel Beam
Physical Review Accelerators and Beams – to be published in August 2020.