

# Curriculum Vitae – Elad Greenfield

**Name:** Elad Greenfield

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**Languages:** Hebrew, English

## 1. Education and Professional Experience:

- 2013-today: Experimental Physics Division, RAFAEL, Israel
  - 2013-2015: Research Physicist
  - 2016-today: Head of Photonics Group in the Experimental Physics Division
  - 2016-today: Head of the Quantum Technologies Center in RAFAEL

### Job Description:

- I initiated and lead a central R&D project in the field of lasers. Today, the project is flourishing and occupies 15 workers: physicists, engineers and technicians
  - Today, I lead the Photonics Group, which practices R&D in diverse professional fields including optics and additional technologies. In additions, I also lead the Quantum Technologies Center which practices Quantum Metrology.
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- 2009-2012: PhD student, Technion, Israel
    - Research subject: “concepts in light-liquid interactions”, under the supervision of distinguished Prof. Moti Segev
    - Final GPA: 97
    - Practiced teaching and teaching assistant in a wide range of academic courses
  
  - 2006-2009: MSc student, Technion, Israel
    - Research subject: “characterization of electrical properties of electrically charges surfaces interacting with ionic solution as a function of the distance between them”, under the supervision of distinguished Prof. Uri Sivan
    - Final GPA: 100
  
  - 2002-2005: BSc student, Technion, Israel

- BSc in Electrical Engineering and Physics
- Final GPA: 85
- 2004-2006: Applied Materials, Israel
  - Physicist Position
  - Developed material process: “water ablation assisted water cleaning”

## 2. Awards and honors:

- 2014-2020: Katzir Fellowship for promotion of leading professional personal in the Israeli defense industry
- 2009-2013: Eshkol Fellowship for excellent PhD students
- 2008: RBNI Scholarship for excellent research
- 2005: Zeiden award and Asa Kasher award, for winning projects in the Electrical Engineering student project competition

## 3. Professional fields of interest and expertise:

- Atomic Force Microscopy
- Fabrication of Si devices
- Laser physics
- Experimental electro-optics

## 4. Publications list:

1. **Greenfield**, E., Segev, M., Walasik, W. and Raz, O., 2011. *Accelerating light beams along arbitrary convex trajectories*. **Physical Review Letters**, 106(21), p.213902.
2. Bandres, M. A. , Kaminer, I., Mills, M., Rodríguez-Lara, B. M., Greenfield, E., Segev, M. and Christodoulides, D. N. 2013. *Accelerating optical beams*. **Optics and Photonics News**, 24(6), 30-7.
3. **Schley**, R., Kaminer, I., Greenfield, E., Bekenstein, R., Lumer, Y. and Segev, M., 2014. *Loss-proof self-accelerating beams and their use in non-paraxial manipulation of particles' trajectories*. **Nature Communications**, 5, p.5189.
4. **Greenfield**, E., Schley, R., Hurwitz, I., Nemirovsky, J., Makris, K.G. and Segev, M., 2013. *Experimental generation of arbitrarily shaped diffractionless superoscillatory optical beams*. **Optics express**, 21(11), pp.13425-13435.
5. **Greenfield**, E., Nemirovsky, J., El-Ganainy, R., Christodoulides, D.N. and Segev, M., 2013. *Shockwave based nonlinear optical manipulation in densely scattering opaque suspensions*. **Optics Express**, 21(20), pp.23785-23802.
6. **Greenfield**, E. and Sivan, U., 2009. *Measuring changes in surface potential as two charged bodies approach in electrolyte solution*. **Physical Review Letters**, 102(10), p.106101.

7. Greenfield, E., Rotschild, C., Szameit, A., Nemirovsky, J., El-Ganainy, R., Christodoulides, D.N., Saraf, M., Lifshitz, E. and Segev, M., 2011. *Light-induced self-synchronizing flow patterns*. **New Journal of Physics**, 13(5), p.053021.
8. Lumer, Y., Liang, Y., Schley, R., Kaminer, I., Greenfield, E., Song, D., Zhang, X., Xu, J., Chen, Z. and Segev, M., 2015. *Incoherent self-accelerating beams*, **Optica**. 2(10),886-92.
9. Greenfield, E., Kaminer, I. and Segev, M., 2012. *Observation of Periodic Accelerating Beams*, **Frontiers in Optics**.
10. Schley, R., Kaminer, I., Greenfield, E., Bekenstein, R., Lumer, Y. and Segev, M., 2014. *Microparticles manipulation by nonparaxial accelerating beams*, **CLEO: Science and Innovations**.
11. Segev, M., Greenfield, E. and Christodoulides, D. N., 2012. *Complex Nonlinear Optofluidics-Optical Manipulation in Dense Suspensions*, **Latin America Optics and Photonics Conference**.
12. Greenfield, E., 2009. *Direct Mapping of the Way Surface Potential Varies when Charged Bodies Approach in Electrolyte Solution*, MSc thesis dissertation, **Technion-Israel Institute of Technology**.
13. Greenfield, E., Segev, M., and Raz, O., 2011. *Accelerating light beams along arbitrary trajectories*, **Quantum Electronics and Laser Science Conference**.
14. Greenfield, E., Segev, M. and Christodoulides, D. 2012. *Optical Manipulation in Strongly Scattering Suspensions*, **Frontiers in Optics**.
15. Greenfield, E., Rotschild, C., Lamhot, Y., Szameit, A., Nemirovsky, Y., Segev, M., El-Ganainy, R., Christodoulides, D. N., Saraf, M. and Lifshitz, E., 2009. *Complex Dynamic Optofluidics: Symbiotic Nonlinear Controls, Self-pulsation, and Chaos*, **Laser Science**.
16. Greenfield, E., Segev, M., El-Ganainy, R., and Christodoulides D. N. (2012). *Light-induced shock waves in dense colloidal suspensions*, **Quantum Electronics and Laser Science Conference**.
17. Lumer, Y., Schley, R., Kaminer, I., Greenfield, E., and Segev, M., 2014. *Incoherent nonparaxial accelerating beams*., **CLEO: QELS\_Fundamental Science**.
18. Segev, M. and Greenfield, E. 2015. *Complex optofluidics: Controlling fluids with light and vice-versa*, **Optical MEMS and Nanophotonics (OMN)**.
19. Greenfield, E., Segev, M. and Szameit, A., 2010. *Memory functions for comparative nonlinear dynamics: A new class of dynamic systems unifying chaotic Optofluidics and Electronics*, **Quantum Electronics and Laser Science Conference**.
20. Greenfield, E., Hurwitz, I., Schley, R., and Segev, M., 2013. *Tailored superoscillatory beams: Controlling symmetry, broadening, width, and orientation*, **Lasers and Electro-Optics (CLEO)**.
21. Greenfield, E., 2014. *Aspects of Light-fluid Interactions*, PhD thesis dissertation, **Technion-Israel Institute of Technology**.
22. Segev, M., Kaminer, I., Greenfield, E., Lumer, Y., Bekenstein, R., Nemirovsky, J. and Bar-Ziv U. 2015. *Accelerating Wavepackets*, **Laser Science**.