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| Physics Department |  Phone: 972-3-738-7377 |
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Professional Experience

Senior Lecturer, Physics Department, Bar Ilan University, Ramat Gan, Israel. 2012-present

Education

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| Ph.D. in Physics, Technion, Haifa, Israel, December 2008 Advisor: Prof. Mordechai Segev B.A. in Physics,Technion, Haifa, Israel, May 2001 |  |

Research Experience

Postdoctoral Fellow**,** Stanford University, Stanford, CA, Dec. 2008-2012

 Supervisor: Prof. Stephen E. Harris

Scientist, R&D, Optimaze Telecom, Rehovot, Israel, 2001-2003

**Teaching Experience**

Bar-Ilan, University, 2012-prerent, Lecturer

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| Technion, Haifa, Israel, 2003-2008, Teaching assistant |  |

**Awards**

* The Israel Academy of Sciences and Humanities, The Adams Fellowship (2005)
* Technion, The Applied Materials Fellowship (2005)
* Tecnion, The Miriam and Aharon Gutwirth Fellowship Award (2004)
* Technion award for excellence in teaching (2004)

**Current Research Interests**

* Quantum optics.
* Biphotons generation and manipulation.
* Theory of nonlinear phenomena at x-ray energies.
* Quantum optics in the x-ray regime.

Papers published in Refereed Journals (last 3 years)

1. **S. Shwartz**, M. Segev, S. Berger, E. Zolotoyabko, and U. El-Hanany, “Light-induced ionic polarization in CdZnTe:V semiconductors giving rise to giant nonlinearities”, Physical Review B 79, 193202 (2009).
2. **S. Shwartz** and S. E Harris, “Polarization Entangled Photons at X-Ray Energies”, Physical Review Letters,106, 080501 (2011).
3. **S. Shwartz**, K.V. Adarsh, M. Segev, E. Lakin, E. Zolotyoyabko, and U. El-Hanany, “Giant light-induced band-gap shift and reversible control over the band gap in bulk semiconductor crystals”, Physical Review B (Rapid Communication), 83, 241201(R), (2011).
4. **S. Shwartz**, R. N. Coffee, J. M. Feldkamp, Y. Feng, J. B. Hastings, G. Y. Yin, and S. E. Harris, “X-ray Parametric Down-Conversion in the Langevin Regime”, Phys. Rev. Lett.,109, 013602, (2012)
5. T.E. Glover, D.M. Fritz, M. Cammarata, T.K. Allison, Sinisa Coh, J.M. Feldkamp, H. Lemke, D. Zhu, R.N. Coffee, M. Fuchs, S. Ghimire, J. Chen, **S. Shwartz**, D.A. Reis, S.E. Harris, and J. B. Hastings, “X-ray and optical wave mixing”, Nature, 488, 603 (2012)

**Conferences (last 3 years)**

1. Adarsh, K V, **Sharon Shwartz,** Mordechai Segev, Emil Zolotoyabko, Uri El-Hanany, “Light-Induced Reversible Shift and Control of the Bandgap of Bulk CdZnTe:V Crystals” ,Conference on Laser and Electro-Optics (CLEO), Baltimore, MD (2009).
2. Adarsh, K V, **Sharon Shwartz**, Mordechai Segev, Lev Chuntonov, Zohar Amitay2, Emil Zolotoyabko, Uri El-Hanany “Light-Induced Tuning and Enhancement of Two Photon Absorption in Bulk Semiconductor Single Crystal”, Frontier in Optics, San Jose, CA, (2009).
3. **S. Shwartz** and S. E. Harris, "Generation of Polarization Entangled Photons at X-Ray Energies ", SPRC 2010 Annual Symposium, Stanford, CA (2010).
4. **S. Shwartz** and S. E Harris, “Polarization Entangled Photons at X-Ray Energies”, OSA Topical Meeting on Nonlinear Optics (NLO), Kauai, Hi (2011).
5. **S. Shwartz**, "Generation of Polarization Entangled Photons at X-Ray Energies ", SPRC 2010 Annual Symposium, Stanford, CA (2011). (**Invited** )
6. **S. Shwartz**, "X-ray Nonlinear Optics in Crystals ", LCLS/SSRL users' meeting SLAC, CA (2011). (**Invited** )
7. **S. Shwartz**, "X-Ray Parametric Down-Conversion in The Langevin Reime", The Winter Colloquium on the Physics of Quantum Electronics (PQE), Snowbird, UT (2012). (**Invited**)
8. S. E. Harris **and S. Shwartz**, “Attosecond Biphotons by Parametric Down Conversion at X-ray wavelengths”, 21th INTERNATIONAL LASER PHYSICS WORKSHOP, Calgary, Canada (2012). (**Invited**)
9. **S. Shwartz and S. E. Harris**, " Parametric Down-Conversion at X-Ray Wavelengths ", International Workshop on Atomic Physics 2012, Dresden, Germany (2012). (**Invited**)
10. **S. Shwartz,** “ Second Harmonic Generation at X-Ray wavelengths” OASIS 2013- The International Meeting on Optical Engineering and Science in Israel, Tel Aviv, Israel (2013).