



## Stephen E. Harris

Kenneth and Barbara Oshman Professor in the School of Engineering and  
Professor of Applied Physics, Emeritus  
Electrical Engineering

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### Bio

#### BIO

Harris' interests include lasers, quantum electronics, atomic physics, and nonlinear optics.

#### ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, Electrical Engineering

#### HONORS AND AWARDS

- Member, National Academy of Engineering
- Member, American Academy of Arts and Sciences
- Member, National Academy of Sciences

#### PROFESSIONAL EDUCATION

- PhD, Stanford University (1963)

#### LINKS

- <https://web.stanford.edu/~seharris/>: <https://web.stanford.edu/~seharris/>

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### Publications

#### PUBLICATIONS

- **Electromagnetically induced transparency and quantum heat engines** *PHYSICAL REVIEW A*  
Harris, S. E.  
2016; 94 (5)
- **X-ray second harmonic generation.** *Physical review letters*  
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- **X-ray and optical wave mixing** *NATURE*  
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- **A miniature ultrabright source of temporally long, narrowband biphotons** *APPLIED PHYSICS LETTERS*  
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- **X-Ray Parametric Down-Conversion in the Langevin Regime** *PHYSICAL REVIEW LETTERS*  
Shwartz, S., Coffee, R. N., Feldkamp, J. M., Feng, Y., Hastings, J. B., Yin, G. Y., Harris, S. E.  
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- **Anthony E. Siegman: Laser pioneer, Optical Society president, friend, and colleague** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
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2012; 109 (5): 1379-1379
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- **Polarization Entangled Photons at X-Ray Energies** *PHYSICAL REVIEW LETTERS*  
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2011; 106 (8)
- **Generation and Compression of Chirped Biphotons** *PHYSICAL REVIEW LETTERS*  
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2010; 104 (25)
- **Hiding Single Photons with Spread Spectrum Technology** *PHYSICAL REVIEW LETTERS*  
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2010; 104 (22)
- **Observation of Nonlocal Modulation with Entangled Photons** *PHYSICAL REVIEW LETTERS*  
Sensarn, S., Yin, G. Y., Harris, S. E.  
2009; 103 (16)
- **Modulation and measurement of time-energy entangled photons** *PHYSICAL REVIEW A*  
Belthangady, C., Du, S., Chuu, C., Yin, G. Y., Harris, S. E.  
2009; 80 (3)
- **Resonant Sum Frequency Generation with Time-Energy Entangled Photons** *PHYSICAL REVIEW LETTERS*  
Sensarn, S., Ali-Khan, I., Yin, G. Y., Harris, S. E.  
2009; 102 (5)
- **Observation of optical precursors at the biphoton level** *OPTICS LETTERS*  
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2008; 33 (18): 2149-2151
- **Electro-optic modulation of single photons** *PHYSICAL REVIEW LETTERS*  
Kolchin, P., Belthangady, C., Du, S., Yin, G. Y., Harris, S. E.  
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- **Nonlocal modulation of entangled photons** *PHYSICAL REVIEW A*  
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- **Generation of Biphotons with Controllable Temporal Length** *2008 CONFERENCE ON LASERS AND ELECTRO-OPTICS & QUANTUM ELECTRONICS AND LASER SCIENCE CONFERENCE, VOLS 1-9*

- Belthangady, C., Du, S., Kolchin, P., Yin, G. Y., Harris, S. E.  
2008; 3277-3278
- **Chirp and compress: Toward single-cycle biphotons** *PHYSICAL REVIEW LETTERS*  
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  - **Coherent control of laser-induced breakdown** *OPTICS LETTERS*  
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  - **Generation and control of femtosecond pulses by molecular modulation** *ITAMP/FOCUS Workshop on Attoscience*  
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Walker, D. R., Shverdin, M., YAVUZ, D., Yin, G. Y., Harris, S. E.  
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  - **Frequency mixing using electromagnetically induced transparency in cold atoms** *PHYSICAL REVIEW LETTERS*  
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  - **Quasiperiodic Raman technique for ultrashort pulse generation** *PHYSICAL REVIEW LETTERS*  
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- **Raman generation by phased and antiphased molecular states** *PHYSICAL REVIEW LETTERS*  
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- **Efficient nonlinear frequency conversion in an all-resonant double-lambda system** *Physical review letters*  
Merriam, A. J., Sharpe, S. J., Shverdin, M., Manuszak, D., Yin, G. Y., Harris, S. E.  
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- **Eigenvectors of a raman medium** *Physical review letters*  
Yavuz, D. D., Sokolov, A. V., Harris, S. E.  
2000; 84 (1): 75-8
- **Efficient gas-phase VUV frequency up-conversion** *IEEE JOURNAL OF SELECTED TOPICS IN QUANTUM ELECTRONICS*  
Merriam, A. J., Sharpe, S. J., Xia, H., Manuszak, D. A., Yin, G. Y., Harris, S. E.  
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- **Nonlinear optics at low light levels** *PHYSICAL REVIEW LETTERS*  
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Sokolov, A. V., Yavuz, D. D., Harris, S. E.  
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- **Light speed reduction to 17 metres per second in an ultracold atomic gas** *NATURE*  
Hau, L. V., Harris, S. E., Dutton, Z., Behroozi, C. H.  
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- **Subfemtosecond pulse generation by molecular modulation** *PHYSICAL REVIEW LETTERS*  
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- **Femtosecond-pulse-driven 10-Hz 41.8-nm laser in Xe IX** *JOURNAL OF THE OPTICAL SOCIETY OF AMERICA B-OPTICAL PHYSICS*  
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