

Stanford



Eran Lustig

Postdoctoral Scholar, Electrical Engineering

Bio

BIO

Eran Lustig has a PhD in physics from the Technion, Israel, and is currently a Zuckerman Israeli Postdoctoral scholar and Rothschild fellow at the Ginzton Laboratory, Stanford University, USA. His work focuses on topological photonics, time varying media, nonlinear optics, and quantum optics. Eran is also the recipient of the Israeli Physical Society (IPS) Asher Peres prize for experimental students.

HONORS AND AWARDS

- Hershel Rich Technion Innovation Award, Technion, Israel (2022)
- IPS prize - Asher Peres Award for Outstanding Student - Experimental, Israel physical society (2022)
- Rothschild Fellow, Yad Hanadiv (2022)
- Outstanding Teaching Assistant Award, Technion, Israel (2021)
- Zuckerman Israeli Postdoctoral Scholar, Zuckeman STEM leadership program (2021)
- Physics Faculty Excellence Award for Best Student Publication, Physics Faculty, Technion (2019)
- Best Poster Award in the "Faculty Research Day", Physics Faculty, Technion (2019)
- Adams Fellowship for Doctoral Students, Israel Academy of Sciences and Humanities (2018)
- Leonard and Diane Sherman Interdisciplinary Graduate School Fellowship., Technion, Israel (2017)

STANFORD ADVISORS

- Shanhui Fan, Postdoctoral Faculty Sponsor

Publications

PUBLICATIONS

- **Photonic topological insulator induced by a dislocation in three dimensions.** *Nature*
Lustig, E., Maczewsky, L. J., Beck, J., Biesenthal, T., Heinrich, M., Yang, Z., Plotnik, Y., Szameit, A., Segev, M.
2022; 609 (7929): 931-935
- **Amplified emission and lasing in photonic time crystals** *SCIENCE*
Lyubarov, M., Lumer, Y., Dikopoltsev, A., Lustig, E., Sharabi, Y., Segev, M.
2022; 377 (6604): 425+
- **Spatiotemporal photonic crystals** *OPTICA*
Sharabi, Y., Lustig, E., Dikopoltsev, A., Lumer, Y., Segev, M.
2022; 9 (6): 585-592

- **Light emission by free electrons in photonic time-crystals** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Dikopoltsev, A., Sharabi, Y., Lyubarov, M., Lumer, Y., Tsesses, S., Lustig, E., Kaminer, I., Segev, M.
2022; 119 (6)
- **Topological insulator vertical-cavity laser array** *SCIENCE*
Dikopoltsev, A., Harder, T. H., Lustig, E., Egorov, O. A., Beierlein, J., Wolf, A., Lumer, Y., Emmerling, M., Schneider, C., Hoefling, S., Segev, M., Klemmt, S.
2021; 373 (6562): 1514-+
- **Synthetic-Space Photonic Topological Insulators Utilizing Dynamically Invariant Structure** *PHYSICAL REVIEW LETTERS*
Nemirovsky, L., Cohen, M., Lumer, Y., Lustig, E., Segev, M.
2021; 127 (9): 093901
- **Topological photonics in synthetic dimensions** *ADVANCES IN OPTICS AND PHOTONICS*
Lustig, E., Segev, M.
2021; 13 (2): 426-461
- **Disordered Photonic Time Crystals** *PHYSICAL REVIEW LETTERS*
Sharabi, Y., Lustig, E., Segev, M.
2021; 126 (16): 163902
- **Anomalous Floquet Thouless pumping**
Pan, Y., Dikopoltsev, A., Lustig, E., Cheng, Q., Segev, M., IEEE
IEEE.2021
- **Towards photonic time-crystals: observation of a femtosecond time-boundary in the refractive index**
Lustig, E., Saha, S., Bordo, E., DeVault, C., Chowdhury, S. N., Sharabi, Y., Boltasseva, A., Cohen, O., Shalaev, V. M., Segev, M., IEEE
IEEE.2021
- **Light emission by free electrons in photonic time-crystals**
Dikopoltsev, A., Sharabi, Y., Lyubarov, M., Lumer, Y., Tsesses, S., Lustig, E., Kaminer, I., Segev, M., IEEE
IEEE.2021
- **Topological insulator vertically-emitting laser array**
Dikopoltsev, A., Harder, T. H., Lustig, E., Egorov, O. A., Beierlein, J., Wolf, A., Lumer, Y., Emmerling, M., Schneider, C., Hofling, S., Segev, M., Klemmt, S., IEEE
IEEE.2021
- **Identifying Topological Phase Transitions in Experiments Using Manifold Learning** *PHYSICAL REVIEW LETTERS*
Lustig, E., Yair, O., Talmon, R., Segev, M.
2020; 125 (12): 127401
- **Photonic Floquet topological insulators in a fractal lattice.** *Light, science & applications*
Yang, Z., Lustig, E., Lumer, Y., Segev, M.
2020; 9 (1): 128
- **Photonic Floquet topological insulators in a fractal lattice.** *Light, science & applications*
Yang, Z., Lustig, E., Lumer, Y., Segev, M.
2020; 9: 128
- **Mode-Locked Topological Insulator Laser Utilizing Synthetic Dimensions** *PHYSICAL REVIEW X*
Yang, Z., Lustig, E., Harari, G., Plotnik, Y., Lumer, Y., Bandres, M. A., Segev, M.
2020; 10 (1)
- **Topological evolution-invariant photonic structures in synthetic dimensions**
Nemirovsky, L., Cohen, M., Lumer, Y., Lustig, E., Segev, M., IEEE
IEEE.2020
- **Topological insulator VCSEL array**
Dikopoltsev, A., Harder, T. H., Lustig, E., Egorov, O. A., Beierlein, J., Emmerling, M., Schneider, C., Hoefling, S., Segev, M., Klemmt, S., IEEE

IEEE.2020

- **Spatiotemporal Photonic Crystals**

Sharabi, Y., Lustig, E., Dikopoltsev, A., Lumer, Y., Segev, M., IEEE

IEEE.2020

- **Experimentally Realizing Photonic Topological Edge States in 3D**

Lustig, E., Maczewsky, L., Biesenthal, T., Yang, Z., Plotnik, Y., Szameit, A., Segev, M., IEEE

IEEE.2020

- **Photonic topological insulator in synthetic dimensions** *NATURE*

Lustig, E., Weimann, S., Plotnik, Y., Lumer, Y., Bandres, M. A., Szameit, A., Segev, M.

2019; 567 (7748): 356+

- **3D Parity Time symmetry in 2D photonic lattices utilizing artificial gauge fields in synthetic dimensions**

Lustig, E., Plotnik, Y., Yang, Z., Segev, M., IEEE

IEEE.2019

- **Light Propagation in Temporally Disordered Media**

Sharabi, Y., Lustig, E., Segev, M., IEEE

IEEE.2019

- **Mode-locked Topological Laser in Synthetic Dimensions**

Yang, Z., Lustig, E., Harari, G., Plotnik, Y., Bandres, M., Segev, M., IEEE

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- **Magnetic Gauge Field for Photons in Synthetic Dimensions by a Propagation-Invariant Photonic Structure**

Nemirovsky, L., Cohen, M., Lustig, E., Segev, M., IEEE

IEEE.2019

- **Topological aspects of photonic time crystals** *OPTICA*

Lustig, E., Sharabi, Y., Segev, M.

2018; 5 (11): 1390-1395

- **Classifying Photonic Topological Phases Using Manifold Learning**

Yair, O., Lustig, E., Talmon, R., Segev, M., IEEE

IEEE.2018

- **Experimental Realization of Photonic Topological Insulators in Synthetic Dimensions**

Lustig, E., Weimann, S., Plotnik, Y., Bandres, M. A., Szameit, A., Segev, M., IEEE

IEEE.2018

- **Topology of Photonic Time-Crystals**

Lustig, E., Sharabi, Y., Segev, M., IEEE

IEEE.2018

- **Curved-space topological phases in photonic lattices** *PHYSICAL REVIEW A*

Lustig, E., Cohen, M., Bekenstein, R., Harari, G., Bandres, M. A., Segev, M.

2017; 96 (4)

- **Extending edge modes with non-Hermitian forcing**

Sheinfux, H., Lustig, E., Lumer, Y., Plotnik, Y., Segev, M., IEEE

IEEE.2017

- **Topologically protected photonic propagation in the bulk**

Lustig, E., Weimann, S., Plotnik, Y., Lumer, Y., Bandres, M. A., Szameit, A., Segev, M., IEEE

IEEE.2017

- **Dynamic Localization by Curved Space**

Cohen, M., Lustig, E., Bekenstein, R., Sheinfux, H., Lumer, Y., Segev, M., IEEE

IEEE.2016

- **Photonic Topological Dynamics induced by Curved Surfaces**

Lustig, E., Cohen, M., Bekenstein, R., Bandres, M. A., Harari, G., Segev, M., IEEE

IEEE.2016