

## MICHAL LIPSON, PHD

Eugene Higgins Professor, Columbia University

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### EDUCATION

B.S. Physics, Technion, Israel, 1992

M.S. Physics, Technion, Israel, 1994

Ph.D. Physics, Technion, Israel, 1998

### POSITIONS

President of the Optica Society (2023). (> 20,000 members worldwide)

Eugene Higgins Professor of Applied Physics, Columbia University, 2018-present

Eugene Higgins Professor of Electrical Engineering, Columbia University, 2015-present

Givens Professor of Engineering, School of Electrical and Computer Engineering, Cornell University, 2001-2015

Postdoctoral Associate, Department of Material Science, Massachusetts Institute of Technology (MIT) 1999 – 2001

### SELECTED HONORS AND AWARDS

- **Top 1% most highly cited researcher in Physics** since 2014, by Thomson-Reuter
- **John Tyndall Award**, IEEE Photonics and Optica Societies, 2021. Presented to an ‘individual who has made outstanding contributions in optical-fiber technology that met the test of time’.
- **Elected member of the American Academy of Arts and Sciences**, 2020
- **Elected Member of the National Academy of Sciences (NAS)**, 2019
- **Comstock Prize in Physics (NAS)**, 2019. Awarded once every 5 years, for “innovative discovery or investigation in electricity, magnetism, or radiant energy, broadly interpreted.”[1]
- **IEEE Photonics Award** 2019. The award is presented for outstanding achievements in photonics and is highest IEEE honor in photonics.
- **Honorary Degree of Doctor in Science, Trinity College of Dublin**, 2018.
- **R. W. Wood Prize Medal**, Optica (formerly the Optical Society of America), 2017. The medal recognizes an “outstanding discovery, scientific or technical achievement or invention in the field of optics”.
- **Macarthur Award**, 2010. Known as the "Genius Grant", the award is given to 20 individuals working on any field who have shown "extraordinary originality in their creative pursuits".

### RECENT PLENARY TALKS (OUT OF > 200 PLENARY, KEYNOTES, AND INVITED TALKS)

- International conf in Optics (ICO 25), “The revolution of silicon photonics,” Dresden, Sept 2022
- NanoPhoton Conference, “Si photonics”, Copenhagen, Denmark, March 2022
- Conference on Lasers and Electro-Optics (CLEO) Pacific Rim, “The revolution of silicon photonics”, Sapporo, Japan, July 2022
- Conference on Lasers and Electro-Optics (CLEO), “The revolution of silicon photonics,” San Jose, June 2022

- NanoPhotonics of 2D Materials, “Si photonics,” (virtual) July, 2020.
- Asia Communications & Photonics Conference, “The revolution of silicon photonics,” Chengdu, China, Nov. 2019
- International Optics and Photonics Conf, “Silicon photonics,” São Paulo, Brazil, October 2019
- CLEO/EUROPE-EQEC, “Silicon photonics,” Munich, Germany, Jun 2019

**SELECTED JOURNAL PUBLICATIONS( OUT OF >250, CITATIONS: =58,670, H-INDEX: 120)**

B. Stern, X. Ji, Y. Okawachi, A. L. Gaeta, M. Lipson, “Battery-operated integrated frequency comb generator,” *Nature*, **562**, 401, 2018. (> 600 citations)

C.T. Phare, Y.-H. D. Lee, J. Cardenas, and M. Lipson, “Graphene electro-optic modulator with 30 GHz bandwidth,” *Nat. Phot.* **9**, 511–514, 2015. (> 800 citations)

JS Levy, A Gondarenko, MA Foster, AC Turner-Foster, AL Gaeta, M Lipson CMOS-compatible multiple-wavelength oscillator for on-chip optical interconnects *Nature Phot.* **4**, 37-40, 2010 (>1200 citations)

Q. Xu, B. Schmidt, S. Pradhan, and M. Lipson, “Micrometre-scale silicon electro-optic modulator,” *Nature* **435**, 325–327, 2005. (> 2,500 citations)

Q. Xu, V. R. Almeida, R. R. Panepucci, and M. Lipson, “Experimental demonstration of guiding and confining light in nanometer-size low-refractive-index material,” *Opt. Lett.* **29**, 1626–1628, 2004. (> 1,000 citations)

V.R. Almeida, Q. Xu, C. A. Barrios, and M. Lipson, “Guiding and confining light in void nanostructure,” *Opt. Lett.* **29**, 1209–1211, 2004. (> 2000 citations)

V.R. Almeida, R. R. Panepucci, and M. Lipson, “Nanotaper for compact mode conversion,” *Opt. Lett.* **28**, 1302–1304, 2003. (> 1,100 citations)

**TECH TRANSFER AND ENTREPRENEURSHIP**

Lipson’s innovations are included in most silicon photonics design kits of today and fabricated by the top high-volume foundries in the world.

- Co-inventor of >45 granted patents. > 15 of these patents have been licensed.
- Co-founded two startups (Voyant Photonics – in the area of Lidar on-chip and Xscape Photonics -in the area of data communications.). These startups’ technology are based on silicon photonic innovations that emerged from Lipson’s laboratory: