

BIOGRAPHICAL SUMMARY

NAME
Ester Segal

POSITION TITLE
Professor

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	MM/YY	FIELD OF STUDY
Technion – Israel Institute of Technology	B.Sc.	1998	Chemical Engineering
Technion – Israel Institute of Technology	M.Sc.	2000	Chemical Engineering
Technion – Israel Institute of Technology	Ph.D.	10/2004	Chemical Engineering

Personal Statement

My research is at the broad interface between nanomaterials science and biotechnology, including the basic study of structure-property relationships of nanomaterials and inorganic/organic hybrid nanomaterials. With more than 20 years of pioneering experience in the field, my group has established outstanding expertise in tailoring porous silicon structure, surface chemistry, and optical properties to create highly sensitive, label-free sensing platforms, aiming to detect a wide range of targets over a large dynamic range, to allow identification and quantification of biochemical entities from small size (such as biomolecular interactions) to large-size live cells. Our developed porous silicon platforms have advanced from proof-of-concept and been validated in real-world applications, including monitoring of microbial contamination in food production, remote environmental screening of water-body pollutants, and early diagnosis of microbial infections directly from patients' urine in double-blind bed-side study. I have authored >120 papers in leading peer-reviewed journals and have five issued US patents.

Academic Appointments

2021 - present	The Beatrice Sensibar Chair in Engineering, Technion, Haifa
2019 - present	Professor, Department of Biotechnology and Food Engineering, Technion, Haifa
2013 - 2019	Associate Professor, Department of Biotechnology and Food Engineering, Technion, Haifa
2016 - 2017	Visiting Professor, Department of Nanoengineering, University of California, San Diego, USA
2007 - 2013	Assistant Professor, Department of Biotechnology and Food Engineering, Technion, Haifa
2005 - 2007	Postdoctoral Research Associate, Department of Chemistry and Biochemistry University of California, San Diego, USA
2004 - 2005	Rothschild Postdoctoral Fellow, University of California, San Diego, CA, USA

Technion Positions (5 years)

2025 – present	Dean, Department of Biotechnology and Food Engineering
2024	Member of the Technion's Standing Committee for Academic Studies
2021 - 2023	Deputy Executive Vice President for Research
2023	Member of the Committee for the Selection of the Technion's President

Honors (selected)

2023	Nanoscale Horizons Outstanding Paper Award – Runner up
2019	Advances in Measurement Science Lectureship Awards, by the American Chemical Society.
2017	Longitude Prize Discovery Award for Promising Developments in Rapid Diagnostics for Antibiotic Resistance.
2016	The Hershel Rich Innovation Award for outstanding innovative projects with commercial potential,
2016	Daniel Shiran Memorial Research Prize for outstanding research in Bio-Medicine
2014	Yanai Prize for Excellence in Academic Education, Technion
2014	Henri Taub Prize for Excellence in Academic Research
2009 - 2022	> 10 times Excellence in Teaching Award, Technion (Top 4%-12%)

Research Support (5 years)

The Segal lab has received >7.5 M\$ in support

2021-2025	Integration of Optical Porous Silicon Biosensors with 3D-Printed Microfluidics for Biomarker Detection	Volkswagen Stiftung
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2021-2025	Sticky Situations: Photonic Silicon Chip for Selective Spatial Colonization of Bacteria for Subsequent Analyses	ISF
2021 Equipment	Sticky Situations: Photonic Silicon Chip for Selective Spatial Colonization of Bacteria for Subsequent Analyses	ISF
2022-2023	Antiseptic Wax: Bioinspired, sustainable non-toxic coating for passive prevention of microbial biofilms	MOST (co-PI)
2022-2025	Sprayable Bio-inspired Antimicrobial Coatings for Reducing Food Loss and Enhancing Safety	MOST (co-PI)
2023-2026	SAFEWAX: Sustainable Bioinspired Wax Coating for Multi-Functional Crop Protection	EU EIC-Pathfinder
2023-2026	PATAFEST: Cultivating Resilience Driving Sustainable Potato Protection and Postharvest Excellence	EU – Horizon Europe
2024-2028	Side2Dairy: From Waste to Value: Valorizing Agrifood Side-Streams into Healthy Dairy Alternative	VATAT
2026-2030	Integrated Photonic Silicon Biosensor for Multiplex Fungal Detection and Antifungal Susceptibility Testing: Probing Fungal–Surface Interactions and Drug Response Dynamics	ISF
2026-2028	An integrated photonic sensor for monitoring air-borne nanoparticles	MOST

Public Professional Activity

Editorial board: ACS Sensors (since 2018); Analytical Chemistry (2020-2023); ACS Omega (since 2021); ACS Measurement Science Au (since 2021).

Scientific committees: ISF; Israel-Taiwan cooperative scientific research; Ministry of Science and Technology; The Israeli Foundation for Applied Sciences and Engineering; Israel Ministry of Agriculture

Reviewer for the following journals (selected list): Nature; Nature Nanotechnology; Advanced Materials; Advanced Functional Materials; Advanced Healthcare Materials; Advanced Optical Materials; Angewandte Chemie International Edition; ACS Sensors; ACS Nano; Biomaterials; Small; Nano Today; Analytical Chemistry; Lab-on-Chip; ACS Applied Materials & Interfaces.

Reviewer for the following foundations (selected list): Israel Science Foundation; Israel Ministry of Science; U.S.-Israel Binational Science Foundation; Health Innovation Challenge Fund (HIC Fund); Wellcome Trust; European Research Council: Starting Grants; Ireland Science Foundation; Engineering and Physical Sciences Research Council (EPSRC); US Army Research Office, BARD - US-Israel Agricultural Research and Development Fund, UK Research and Development – Medical Research Council.

Other scientific activities:

Coordinator of EU-H2020 NanoPack Project (2017-2020) – was granted with €7.7 million by the European Commission: <https://cordis.europa.eu/project/rcn/206834/factsheet/en>

European Polymer Federation, Israel representative (since 2014)

Porous Semiconductors - Science and Technology – International Scientific Committee (since 2018)

Co-coordinator of EU-Horizon Europe SafeWax Project (2023-2024)

ASTonix Ltd. – Scientific Founder and Scientific Board Chair (2026 – present)

Graduate Students

- Ph.D. – 18 completed; theses, M.Sc. – 9 completed, Postdocs – 8 completed

Publications

- >120 peer-reviewed journal articles; 10 book chapters; H-index: 48
- [Google scholar profile](#)