July 2026

DANIEL LAHAV

CURRICULUM VITAE

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Department of Physics, Bar-Ilan University, Ramat-Gan, Israel | Citations: ORCID, Google Scholar

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EDUCATION

Ph.D. in Physics, Bar-Ilan University, Ramat-Gan, Israel 2024 – Present
Thesis: "Flexible Spintronics Under Strain"

M.Sc. in Physics (Magna Cum Laude), Bar-Ilan University, Ramat-Gan, Israel 2022 – 2024
Thesis: "Flexible Planar Hall Effect Sensors Under Strain"

B.Sc. in Physics, Bar-Ilan University, Ramat-Gan, Israel 2019 – 2022

POSITIONS

Nano-Fabrication Center Operator, Bar-Ilan University, Ramat-Gan, Israel 2023 – Present
Support cleanroom nanofabrication and characterization workflows for interdisciplinary research projects:

- Operate sputtering systems, lithography systems, and dicing equipment.
- Perform thin-film deposition, lithography, and device fabrication.
- Conduct AFM measurements in the MIXA characterization unit.

TEACHING EXPERIENCE

Teaching Assistant, Bar-Ilan University, Ramat-Gan, Israel 2022 – Present
Teach undergraduate laboratory courses:

- 86-251: Electronics Lab
- 86-232: Computerized Physics Lab
- 86-129: General Physics Lab
- 96-900: Preparatory Physics Lab

Tutor undergraduate course:

- 86-250: Electronics for Physicists

MILITARY SERVICE

Team Leader, Unit 8200, Israel Defense Forces (Reserve Service) 2025 – 2026
Lead a multidisciplinary team in the research, design, and development of hardware systems for advanced signal acquisition and analysis.

Operational Soldier, Israeli Air Force 2015 – 2017

Aviation Cadet, Israeli Air Force Flight Academy, Hatzerim Airbase 2014 – 2015

FELLOWSHIPS, HONORS & AWARDS

M.Sc. in Physics - Magna Cum Laude 2024
Bar-Ilan University, Ramat-Gan, Israel.

Excel@BINA Scholarship for Outstanding Students 2024 – 2025
Institute of Nanotechnology and Advanced Materials, Bar-Ilan University.

The President's Scholarship Program for Outstanding Doctoral Fellows 2024 – 2025
Bar-Ilan University, Ramat-Gan, Israel.

Excel@BINA Scholarship for Outstanding Students 2025 – 2026
Institute of Nanotechnology and Advanced Materials, Bar-Ilan University.

KLA Scholarship for Outstanding Students 2026
Awarded for a lecture at the KLA-BINA Outstanding Students Seminar, Institute of Nanotechnology and Advanced Materials, Bar-Ilan University.

ACADEMIC SERVICE & OUTREACH

Student Representative, Physics Department – BIU Student Association 2023 – Present
Represent physics students in departmental and university committees and coordinate communication between students and faculty.

TECHNICAL SKILLS

Programming Languages: C++, MATLAB, Python
Software Tools: LabVIEW, COMSOL
Nanofabrication: Mask Aligner (MA), Maskless Aligner (MLA), Wafer Bonder, Ion-Beam Sputtering (IBS), BesTec (Sputtering and Evaporation), Disco Dicing Saw, ICP-RIE (Dry Etching)
Characterization: Atomic Force Microscopy (AFM), Scanning Electron Microscopy (SEM)
CAD Tools: AutoCAD, Fusion 360, SolidWorks, CleWin
Systems Engineering: Design and integration of custom electrical, magnetic, and low-noise measurement systems, including automated experimental platforms

LIST OF PUBLICATIONS

1. Nhalil, H., **Lahav, D.**, Schultz, M., Amrusi, S., Grosz, A., Klein, L., "Flexible planar Hall effect sensor with sub-200 pT resolution", *Applied Physics Letters* 123(2), 2023. doi:10.1063/5.0156588
2. Lahav, D., Schultz, M., Amrusi, S., Grosz, A., Klein, L., "Planar Hall Effect Magnetic Sensors with Extended Field Range", *Sensors* 24, 4384 (2024). doi:10.3390/s24134384
3. Vizel, M., Alimi, R., **Lahav, D.**, Schultz, M., Amrusi, S., Grosz, A., Klein, L., "Magnetic Source Detection Using an Array of Planar Hall Effect Sensors and Machine Learning Algorithms", *Applied Sciences* 15(2), 964 (2025). doi:10.3390/app15020964
4. Lahav, D., Schultz, M., Grosz, A., Klein, L., "Enhanced Magnetic Resolution in Elliptical Planar Hall Effect Sensors via Non-Collinear Anisotropy Engineering", *Measurement* (under review).
5. Vizel, M., Klein, L., Schneider, N., Fisher, E., **Lahav, D.**, Grosz, A., Alimi, R., "Enhancing Super-Resolution Fidelity through Physics-Guided Multi-View Conditioning", *Array* (under review).
6. Lahav, D., Ghosh, A., Schultz, M., Grosz, A., Klein, L., "Field-dependent shape anisotropy as a consequence of non-uniform magnetization in patterned ferromagnetic devices", (in preparation).

CONFERENCE PRESENTATIONS

Oral Presentations

- "Multi-Functional Flexible Planar Hall Effect Sensors", The 16th Joint Conference on Magnetism and Magnetic Materials and Intermag, 2025.
- "Multi-Functional Flexible Planar Hall Effect Sensors", BINA Conference, Bar-Ilan University, 2025.
- "Flexible Spintronics Under Strain", KLA-BINA Outstanding Students Seminar, Bar-Ilan University, 2026.
- "Multifunctional High-Resolution Flexible Elliptical Planar Hall Effect Sensors for Magnetometry and Strain Sensing", XV European Magnetic Sensors and Actuators Conference (EMSA), 2026.
- "Enhanced Magnetic Resolution in Elliptical Planar Hall Effect Sensors via Non-Collinear Anisotropy Engineering", Conference on Magnetism and Magnetic Materials (MMM), 2026 (accepted).
- "Multifunctional High-Resolution Flexible Elliptical Planar Hall Effect Sensors for Magnetometry and Strain Sensing", Conference on Magnetism and Magnetic Materials (MMM), 2026 (accepted).

Poster Presentations

- "Planar Hall Effect Magnetic Sensors with Extended Field Range", 69th Annual Meeting of the Israel Physical Society, 2024.
- "Expanding the Field Range of PHE Sensors for Increased Industrial Applicability", International Symposium on Integrated Magnetics (iSIM), 2025.
- "Multi-Functional Flexible Planar Hall Effect Sensors", International Symposium on Integrated Magnetics (iSIM), 2025.
- "Expanding the Field Range of PHE Sensors for Increased Industrial Applicability", The 16th Joint Conference on Magnetism and Magnetic Materials and Intermag, 2025.
- "Expanding the Field Range of PHE Sensors for Increased Industrial Applicability", BINA Conference, Bar-Ilan University, 2025.
- "Enhanced Magnetic Resolution in Elliptical Planar Hall Effect Sensors via Non-Collinear Anisotropy Engineering", XV European Magnetic Sensors and Actuators Conference (EMSA), 2026.

PRESS COVERAGE

"Flexible planar Hall effect sensor with sub-200 pT resolution":

- EurekAlert
- The Jerusalem Post
- AZO Sensors
- Israel National News
- Israel Noticias