Yazan Lampert, PhD.
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Curriculum vitae

RESEARCH INTERESTS

I am working on developing photonic integrated circuits that operate in the ultrafast regime. By integrating electrical and optical signals, my work establishes physical phenomena that could support next-generation on-chip and off-chip technologies.

EDUCATION

3/2022 – 10/2026 **PhD. in Electrical Engineering**, École polytechnique fédérale de Lausanne (EPFL), Switzerland

10/2018 – 10/2020 **M.Sc. in Micro-, Nano, and Optoelectronics**, Karlsruhe Institute of Technology (KIT), Germany

10/2014 – 10/2018 **B.Sc. in Electrical Engineering and Information Technology,** Karlsruhe Institute of Technology (KIT), Germany

RESEARCH AND WORK EXPERIENCE

3/2022 – 10/2026 **Doctoral Student in Electrical Engineering**
École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland
Faculty Advisor: Ileana-Cristina Benea-Chelmus
Project: Integrated photonic circuits for terahertz applications.
Expertise: Ultrafast optics, optical and RF setups, design, simulation, and characterization of photonic integrated chips, antenna arrays.

1/2021 – 1/2022 **Optical Engineer for Timing Systems**
Cycle GmbH, Hamburg, Germany
Company Founder: Franz Kärtner
Project: Synchronization of femtosecond pulses and microwave signals.
Expertise: Fiber and free-space setups, ultrafast optics, electronics

PROFESSIONAL ACTIVITIES

Committee Activity (2025-2026)
EDEE committee member, EPFL, Switzerland

Referee Activity
Contributed 19 reviews in various journals, including Light: Science & Applications.

Science Outreach

- Developed an open-source notebook for designing terahertz transmission lines in Tidy3D
- Wrote an article for Laser Focus World about terahertz capabilities within photonic chips
- Participated in outreach event “Nuit de la Science“, Geneva

AWARDS & HONORS

2024 Zurich Instruments Student Travel Grant
2017 Extension for DAAD Baden-Württemberg Scholarship Program II

2016 DAAD Baden-Württemberg Scholarship Program II

SELECTED PUBLICATIONS

[1] **Lampert, Yazan†**, Amirhassan Shams-Ansari†, Aleksei Gaier, Alessandro Tomasino, Xuhui Cao, Leticia Magalhaes, Shima Rajabali, Marko Lončar, and Ileana-Cristina Benea-Chelmus. "Photonics-integrated terahertz transmission lines." *Nature Communications* 16, no. 1 (2025): 7004. *Publication selected by Optics & Photonics News for "most exciting peer-reviewed optics research that has emerged in 2025"*

[2] Cao, Xuhui†, **Yazan Lampert†**, Amirhassan Shams-Ansari, Aleksei Gaier, Alessandro Tomasino, Leticia Magalhaes, Shima Rajabali, Marko Lončar, and Ileana-Cristina Benea-Chelmus. "Terahertz Time-domain Spectroscopy based on Thin-film Lithium Niobate with Broad Operation Wavelength Compatibility" Under consideration for APL Photonics

[3] **Lampert, Yazan†**, Jiawen Liu†, Xuhui Cao, and Ileana-Cristina Benea-Chelmus. "Photonic traveling-wave emitters with built-in metasurface functionalities" In preparation.

[4] Gaier, Aleksei, Karen Mamian, Jiawen Liu, **Yazan Lampert**, Shima Rajabali, Leticia Magalhaes, Amirhassan Shams-Ansari, M. Loncar, and I-C. Benea-Chelmus. " Frequency-scalable single-photon electro-optic nonlinearity in thin-film lithium niobate." Under consideration for Nature Communications Physics.

† Equally contributing authors

INVITED TALKS

[1] "Broadband Photonic and Terahertz Integrated Circuits on Thin-film Lithium Niobate", Seminar of the Institute of Photonics and Quantum Electronics (IPQ), Germany (2026).

[2] "Terahertz Transmission Lines", International Terahertz Summer TSA2024, China (2024).

PATENTS

[1] BENEA-CHELMUS, Ileana-Cristina, Marko Loncar, Jerome Faist, Alessandro TOMASINO, Amirhassan SHAMS-ANSARI, Alexa HERTER, and **Yazan LAMPERT ALMAHMOUD**. "On-chip terahertz thin-film devices." U.S. Patent Application 18/213,691, filed December 26, 2024.