

ΒΙΟΓΡΑΦΙΚΟ ΣΗΜΕΙΩΜΑ

Αλέξανδρος ΠΙΤΙΛΑΚΗΣ

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Education

Ph.D. in Electrical and Computer Engineering, Aristotle University of Thessaloniki, Greece (2014)

MSc. in Electrical Engineering, Ecole Nationale Supérieure des Télécommunications, Paris, France (2007)

Diploma in Electrical and Computer Engineering, Aristotle University of Thessaloniki, Greece (2005)

Research and Teaching Appointments

- 2023 – present Postdoctoral Researcher Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation, Athens Greece
- 2017 – present Postdoctoral Researcher, Institute of Electronic Structure & Laser and Institute of Computer Science, Foundation for Research and Technology – Hellas, Heraklion, Greece
- 2014 – present Postdoctoral Researcher, School of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece
- 2016 – 2023 Adjunct Lecturer, School of Electrical and Computer Engineering, University of Western Macedonia, Kozani, Greece

- 2017 – 2018 Adjunct Lecturer, School of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece
- 2010 – 2011 Researcher, Information Technologies Institute, Centre of Research and Technology Hellas, Thessaloniki, Greece
- 2008 – 2014 Research and Teaching Assistant, School of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece

Main Research Interests

- Electromagnetic (EM) wave propagation: microwaves, mm-Waves, THz, infrared (NIR), visible (VIS).
- Interaction of matter and structure with EM waves, for control and processing of broadband signals.
- Applications in wireless and wired communications.
- Analysis, design and characterisation of EM components and devices: waveguides, antennas, receivers/detectors, amplifiers, mixers and sources.
- Theoretical and computational electromagnetism (applied physics, mathematical modelling).
- Applications in integrated photonics (waveguides, nonlinear components, 2D materials, modulators, switches) and radiated waves (metasurfaces, antennas)

Publications and Conferences

- 28 research papers in peer-reviewed international journals
- 6 book chapters
- 46 announcements in international/national conferences (8 invited)
- Citations: 1500+ / h-index: 21 (Google Scholar, 10/2023)

Teaching activities

- (2016-2023) Adjunct Lecturer in School of Electrical and Computer Engineering, University of Western Macedonia, Kozani, Greece: "Antenna Systems and Wireless Propagation" (7 semesters); "Photonics – Optical Devices" (5 semesters); "Optics" (2 semesters)
- (2017-2018) Adjunct Lecturer in School of Electrical and Computer Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece: "Optics I" (2 semesters)
- (2009-2014) Teaching Assistant in School of Electrical and Computer Engineering, Aristotle University of Thessaloniki: "Optical Communications", "Photonics Technology", "Microwave Engineering II",

- Full supervision of 3 Master-level (MSc diploma degree) thesis projects at UOWM. Co-supervision of 1 PhD student and 13 Master-level (MSc diploma degrees) thesis projects at AUTH.

Research Management & Evaluation

- Research collaboration in 2 major EU projects (H2020, FP7) and several Greek national projects (FORTH Synergy Grant, ΕΛΙΔΕΚ/HFRI, ΕΔΒΜ/EDULL, Ερευνώ-Δημιουργώ-Καινοτομώ, ΘΑΛΗΣ). Writer/co-writer in several national and EU project proposals.
- Reviewer for over 30 journals in the fields of electrical & electronic engineering, photonics, optics, and applied physics (IEEE, Optica, AIP, NPG/Springer, Wiley, ACS, Elsevier, IET, MDPI)
- Expert Reviewer for international research proposals (Horizon, FWD/FRHE)

Honors and Awards

- Awarded IEEE Senior Member grade (06/2022)
- IKY-Siemens scholarship (2014 – 2015)
- Best student paper award in the conference SPIE Photonics Europe 2012 – Nanophotonics (04/2012)
- "Heracleitus II" research scholarship for Ph.D. studies (2011 – 2013)
- Scholarship of the "Alexander S. Onassis" public benefit foundation for PhD studies in Greece (2010 – 2011)
- Scholarship "VRika!" awarded by the French Embassy in Greece in Collaboration with the THALES S.A. Group for postgraduate studies in France (2005-2006)

Professional Affiliations and Memberships

- (2016 - present) Member of Institute of Electrical and Electronics Engineers (IEEE). Awarded Senior Member grade in 2022.
- (2016 - present) Member of Optica, formerly OSA, The Optical Society

Selected Recent Publications

1. A. Ptilakis, M. Seckel, A. C. Tasolamprou, F. Liu, A. Deltsidis, D. Manassis, A. Ostmann, N. V. Kantartzis, C. Liaskos, C. M. Soukoulis, S. A. Tretyakov, M. Kafesaki, and O. Tsilipakos, "Multi-functional metasurface architecture for amplitude, polarization and wavefront control", *Phys. Rev. Applied*, **vol. 17**, no. 6., 064060 (2022). [[DOI Link](#)]
2. A. Ptilakis and E. E. Kriezis, "Ultrafast pulse propagation in graphene-comprising nanophotonic waveguides considering nonperturbative

- electrodynamic nonlinearity", *Journal of the Optical Society of America B*, **vol. 39**, no. 9, pp. 2723-2734, September (2022). [[DOI Link](#)]
3. H. Taghvaei, A. Ptilakis, O. Tsilipakos, A.C. Tasolamprou, N. Kantartzis, M. Kafesaki, A. Cabellos-Aparicio, E. Alarcon, and S. Abadal, "Multiwideband Terahertz Communications Via Tunable Graphene-Based Metasurfaces in 6G Networks: Graphene Enables Ultimate Multiwideband THz Wavefront Control," *IEEE Vehicular Technology Magazine*, **vol. 17**, no. 2, pp. 16-25, June (2022) [[DOI Link](#)]
 4. A. Ptilakis, D. Chatzidimitriou, T. V. Yioultsis, and Em. E. Kriezis, "Asymmetric Si-slot Coupler with Nonreciprocal Response Based on Graphene Saturable Absorption," *IEEE Journal of Quantum Electronics*, **vol. 57**, no. 3, 8400210 (2021). [[DOI Link](#)]
 5. D. Chatzidimitriou, A. Ptilakis, T. V. Yioultsis, and Em. E. Kriezis, "Breaking Reciprocity in a non-Hermitian Photonic Coupler with Saturable Absorption," *Physical Review A*, **vol. 103**, no. 5, 053503 (2021). [[DOI Link](#)]
 6. A. Ptilakis, O. Tsilipakos, F. Liu, K.M. Kossifos, A.C. Tasolamprou, D.-H. Kwon, M.S. Mirmoosa, D. Manassis, N. V. Kantartzis, C. Liaskos, M.A. Antoniadis, J. Georgiou, C.M. Soukoulis, M. Kafesaki, S.A. Tretyakov, "A multi-functional reconfigurable metasurface: Electromagnetic design accounting for fabrication aspects", *IEEE Transactions on Antennas & Propagation*, **vol. 69**, No. 3, pp. 1440-1454 (2020). [[DOI Link](#)]