

## CURRICULUM VITAE ALEXANDROS LAPPAS

Research Director (Grade A) | IESL-FORTH, Heraklion, Crete, Greece  
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### A. TRACK RECORD

#### Research & Publication History

Alexandros Lappas leads the **Quantum Materials & Magnetism Lab** at IESL-FORTH; his research is motivated by cooperative phenomena of interacting charge carriers and magnetic moments in bulk (e.g., van der Waals compounds) and nanoscale (e.g., metal-oxide crystals) materials for energy and biomedical technologies [[extended CV](#)].

Publications 115 papers in international peer-reviewed journals [ResearcherID: [F-6771-2011](#)].

Citations h-index = 29 (Web of Science, 2026) • >2,500 citations (excluding self-citations)

Key journals Phys. Rev. X • Phys. Rev. Lett. • Nat. Commun. • JACS • Chem. Mater. • Nanoscale • Adv. Funct. Mater. • Science.

Patent No. 20120100419 (2012): Ferrimagnetic colloidal nanoclusters for MRI — Greek Industrial Property Organisation.

**Selected publications:** Lappas et al., Chem. Mater. 37, 8581 (2025) — *orbital selective instabilities at the verge of superconductivity*; Lappas et al., Phys. Rev. X 9, 041044 (2019) — *vacancy-driven magnetic anisotropy in iron-oxide nanocrystals* (highlighted by Brookhaven National Lab); Zorko, ..., Lappas, Nat. Commun. 5, 3222 (2014) — *frustration-induced nanoscale inhomogeneity*; Giot, ..., Lappas, Phys. Rev. Lett. 99, 247211 (2007) — *symmetry breaking in a frustrated antiferromagnet*; Lappas et al., Science 267, 1799 (1995) — *spontaneous magnetic ordering in (TDAE)C<sub>60</sub>*.

#### Competitive Funding & Grant Management

PI and co-PI of competitive grants since 2000, totalling **over €2.1 M in direct IESL funding** from European, US, state (NSRF; National Strategic Reference Framework), and international agencies:

2021–2023 FORTH Synergy Grant: €80 k — Functional Nanoclusters for Multimodal Imaging of (PI) Atherosclerosis (LAMIA; ranked 2nd/24).

2017–2022 US Office of Naval Research Global ([ONRG](#)): €300 k — [Molecule Intercalated Iron Chalcogenides](#) (DOMINION) (PI)

2013–2015 NSRF KRIPIS-I: €800 k at IESL (€1,573 k total) — Advanced Energy Materials (co-PI) (PROENYL).

2006–2010 EC Marie-Curie TOK-DEV: €657 k — Hybrid Nanocrystals with Tailored Properties (PI) (NANOTAIL).

2000–present PI at NCNR-NIST, ISIS-RAL, NSLS-BNL, SpS-PSI, ALBA, ESRF — all beam-time competitively peer-reviewed.

Additional funds from: The Royal Society (study visit), NATO, YAMADA Science Foundation (Japan), and multiple EC and GSRT (General Secretariat for Research & Technology) bilateral grants.

#### Teaching, Mentorship & Capacity Building

2016 Fulbright Fellow, Stony Brook Univ. (USA): 18-hr UG/PG course — Functional (Nano)materials & Magnetism [UG= undergraduate; PG= postgraduate].

2015 Chaire TOTAL, Univ. de Montpellier (FR): 10-hr PG course — Advanced Functional Nanomaterials.

2005–2008 Adjunct Prof., Dept. Physics, Univ. of Crete: Experimental Methods for Physical Properties (4 hrs/wk UG & PG); Structural Analysis of Materials (4 hrs/wk UG).

2001–2005 Adjunct Prof., Dept. Materials Science & Technology, Univ. of Crete: Crystallography, Materials Syntheses (at 3 hrs/wk each, UG); General Chemistry lab (5 hrs/wk UG).

2021–2022 Online lecturer, Mathesis/Crete Univ. Press: 6-video course on nanoscale magnets.

PhD/ MSc 7 PhD awarded (2006–2024) + 1 in progress; 8 MSc awarded (2000–2022).

Post-docs ~20 supervised (2000–present) incl. 11 Marie-Curie Fellows; led to >25 published papers; alumni now in tenure-track posts at Kent Univ., École Centrale Paris, National Physical Lab, Johnson Matthey, PANalytical, Zhejiang Sci-Tech Univ., TITAN Group.

PhD examiner External: Univ. of Montpellier, Ljubljana, Warsaw Univ. of Technology, and multiple Greek Universities (AUTH, Univ. of Ioannina, Univ. of Crete).

## B. CURRENT POSITION & CAREER PROGRESSION

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### Employment

- 2012–present **Research Director, Grade A (open-ended, equivalent to Full Professor)**  
Institute of Electronic Structure & Laser (IESL-FORTH), Heraklion, Greece
- 2002–2012 Principal Researcher, Grade B (tenured) — IESL-FORTH, Greece
- 1998–2002 Associate Researcher, Grade C (tenure-track) — IESL-FORTH, Greece
- 1997–1998 Temporary Lecturer — School of Chemistry, Univ. of Sussex, UK
- 1993–1995 EPSRC Postdoctoral Fellow — School of Chemistry, Univ. of Sussex (Supervisor: Prof. K. Prassides)

### Education

- 1989–1993 D.Phil., Chemical Physics — Univ. of Sussex, UK; “Physical Properties of Magnetic and Superconducting Layered Copper Oxides”. Supervisor: Prof. K. Prassides
- 1983–1988 B.Sc. (Hons) Physics, 2:1 — Dept. of Physics, Univ. of Crete, Greece

### Visiting Scientist

- 2016 (Sep–Dec) Fulbright Visiting Scholar — Brookhaven National Lab (BNL), Condensed Matter Physics & Materials Science Dept., USA (hosts: E.S. Bozin).
- 2015 (Nov) Institut Charles Gerhardt Montpellier, Univ. de Montpellier, FR (host: W. Paulus).
- 2014 (Jun–Jul) Brookhaven National Lab, Condensed Matter Physics & Materials Science Dept. (CMPMSD) (host: S.J.L. Billinge.)
- 2010 (May–Jun) National Nanotechnology Lab, Lecce, Italy (host: L. Manna).
- 2003 (Jun–Jul) Visiting Fellow — Graduate School of Chemistry, Kyoto Univ., Japan (YAMADA Science Foundation) (host: H. Kageyama).
- 2000–present PI at competitive international user facilities: NSLS-BNL, ALBA, ESRF (synchrotron) • NCNR-NIST & ISIS-RAL (neutron) • PSI (muon)

### Distinctions – Awards – Fellowships

- 2018 [Gold Medal of the City of Xanthi](#) (scientific ambassador) — Municipality of Xanthi, GR
- 2016 [Fulbright Visiting Scholars Award](#) — Fulbright Foundation Greece
- 2015 [Chaire TOTAL](#) – Pôle Chimie Balard — Fondation Balard, Montpellier, France
- 2003 Visiting Fellowship — YAMADA Science Foundation, Osaka, Japan
- 2000 Award for Scientific Research — EBEIRIKIO Foundation, Athens, GR
- 1998 1st Prize, Best Oral Presentation — NATO ASI on Muon Science, Univ. of St. Andrews, UK
- 1996 1st Prize, Best Oral Presentation — XII Pan-Hellenic Conference on Solid State Physics, GR
- 1993–1995 Postdoctoral Research Fellowship — EPSRC, UK
- 1990–1993 BRITE-EURAM Research Bursary — European Commission
- 1989–1992 Research Studentship (Quota Award) — SERC, UK
- 1983–1984 Physics Excellence Award, Univ. of Crete — State Scholarships Foundation, GR

### Eligible Leave & Obligation

- 1996–1997 Compulsory Military Service (18 months), Greek Army

## C. WIDER CONTRIBUTIONS TO RESEARCH & RESEARCH CULTURE

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### International Profile: Invited Lectures & Seminars

[Delivered](#) 35 invited (1 keynote, 2 plenary) lectures at major international conferences; 49 contributed talks. Invited colloquia at: **Brookhaven National Lab** (CMPMSD Seminar Series, NSLS-II Users' Meeting, 2016 & 2021); **Oak Ridge National Lab (ORNL)**; **Lawrence Berkeley National Lab**; NHMFL; FIU, Columbia, Northwestern, and Stony Brook Universities (USA); ISIS-RAL, Univ. of Bath, Kent, Edinburgh-CSEC (UK); ICGM Montpellier (France); Zhejiang Sci-Tech Univ. (China). Plenary speaker: ICPAM-12 (2018), ICPAM-11 (2016). Keynote speaker: EPDIC15 (2016).

## **Institutional Leadership & Service**

- Elected Head, “NanoElectronics, Photonic & Quantum Materials” Division, IESL-FORTH (2023-25).
- Advisory committee member, valorisation of Greece’s participation in CERN (GSRI, 2022-present); invited reviewer for the Greek Synchrotron Users’ Network (GrSUN) on the white paper supporting Greece’s candidature for ESRF membership (2022).
- Fulbright Selection Committee Member (2021–2022): Evaluated Greek graduate scholarship applicants in Sciences, Engineering, and Business Administration.
- Expert witness (2014–2018), COST Action MP1308 management committee (“Towards Oxide-Based Electronics”); elected to electoral boards for faculty hiring at Universities of Ioannina, Patras, NKUA, DUTH, Aristotle Univ. of Thessaloniki (AUTH), NCSR “Demokritos” and FORTH.
- Elected member (2006–2018, consecutive terms), IESL Scientific Council — advised on science & technology priorities, annual budgets, and research personnel development.
- Elected Vice-Chairman (2012–2014), governing board of the Union of FORTH Tenure-Track Researchers; elected (2016) to 7-member committee selecting FORTH’s Head of Board of Directors (university chancellor-equivalent).
- Chairman (2011, 2013) and member (2006, 2008), executive committee for professional development of IESL administrative & technical personnel; appointed (2009) to science committee restructuring IESL research directions.

## **Open Science & Research Infrastructure**

- Steering committee member (2018–present) of the IESL-FORTH, INNOVATION-EL — a distributed Greek infrastructure network for Nanotechnology, Advanced Materials and Micro/Nanoelectronics providing research tools to the community via open-access programmes.
- Key contributor within NFFA-Europe (EU distributed infrastructure) — his lab at IESL-FORTH provides access to tools and expertise for nanoscale materials growth and characterisation.

## **Science Policy & Knowledge Transfer**

- Expert group on Nanotechnology (2011–2015), advising the Hellenic Federation of Enterprises (SEV) on industrial adoption of frontier technologies; produced annual foresight reports.
- Appointed (2004) to expert committee advising the government (GSRT) – during the Greek EU Presidency – on European Research Infrastructures and their role in European Research Area.

## **Peer Review, Editorial & Grant Reviewing**

- Referee for: Physical Review B/Letters • Nature Communications • Chemistry of Materials • Nanoscale • ACS Nano Letters • Advanced Science • JACS • ACS Omega, and others.
- Section editorial board, Materials Physics, “Materials” (MDPI, 2019–present).
- External reviewer for: EC MSCA PF (2025), EIC Pathfinder (2022), FET Open (2018–19), ERC Starting Grants (2012–13); NIST Center for Neutron Research (6 access cycles, 2011–2021); ORNL Neutron Science Review Committee (2024–2026); ICMAB-CSIC (Spain); UEFISCDI (Romania); “RESEARCH–CREATE–INNOVATE” state aid Action, GSRT (Greece).

## **Public Engagement & Research Outreach**

- Research highlighted by [BNL](#) newsroom (2020), [Phys.org](#), [Nanowerk](#), [Fulbright](#); nationwide ([Kathimerini](#) Sunday supplement); numerous local press articles ([Empros](#), [NeaKriti](#)) and bulletins ([FORTH](#), [EKT](#), [PATRIS](#), [Maxitisthrakis](#)); Greek TV interviews ([ERT3](#) and [CRETA](#)). Selected for [ESRF](#) Highlights 2014, and an [International Innovation](#) monograph (2011).
- Online lectures ([Mathesis](#), Greece’s leading non-profit MOOC; Crete Univ. Press): 6 videos on smart nanocrystals for non-specialist audience (2021-22; remains available to enrolled learners).

## **International Collaboration Network**

- Active bilateral collaborations with: Institute Jozef Stefan, Slovenia (D. Arcon); Univ. of Pavia, Italy (A. Lascialfari); Institute of Physics Belgrade, Serbia (E.S. Bozin); CMPMSD BNL, USA (I. Robinson); Warsaw Univ. of Technology, Poland (A. Krzton-Maziopa); Univ. of Warwick, UK (G. Balakrishnan); IPCMS Strasbourg, France (S. Begin-Colin). National network: Universities of Crete, Ioannina, AUTH, NCSR “Demokritos”.

## **Conference Organisation**

- Co-chair, Programme committee, 2013 Joint European Magnetic Symposia (Rhodes, Greece). Advisory/scientific board, Hellenic Crystallographic Association International Conferences (2014, 2018). Co-organiser, Panhellenic Conf. on Solid State Physics & Materials Science (2008, 2014). Organising committee, 14<sup>th</sup> FORTH Scientific Retreat (2024).