

Curriculum Vitae

December 2019

Personal Information

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| Name | Athanasia Kostopoulou |
| Telephone(s) | +302810391874 |
| E-mail(s) | akosto@iesl.forth.gr |

Education

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| 2007-2012 | PhD in Chemistry Thesis Title: " Synthesis and Characterization of Hybrid Nanocrystals Structures with Tailored Properties " Supervisors: Dr. Alexandros Lappas, Research Director at IESL-FORTH (main supervisor) Dr. Pantelis N. Trikalitis, Assistant Professor at Chemistry Department, University of Crete The PhD research work was carried in the "Functional Nanocrystals and Quantum Magnetism" laboratory at the IESL-FORTH in Heraklion. |
| 2004 - 2006 | Master of Science in "Materials Physics and Technology" Postgraduate Course, Physics Department – AUTH Thessaloniki (Greece) Grade graduation: 9.04/10 |
| 1998 - 2004 | Bachelor in Physics Physics Department – AUTH Thessaloniki (Greece) Grade graduation: 7.76/10 |
| 1994 - 1997 | Degree of High School General High School Ierissos Χαλχαρακιδικis (Greece) Grade graduation: 17.7/20 |

Employment record

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|---------------------------------|---|
| Aug. 2018- Now | Coordinator of the 3-years project "Low-Temperature Growth of Perovskite Nanosystems for High-Performance Perovskite Solar Cells", financially supported by General Secretariat for Research and Technology (GSRT) and the Hellenic Foundation for Research and Innovation (HFRI) (Contract no: 1179) Institute of Electronic Structure & Laser, FORTH Heraklion, Crete, Greece |
| Sept 2016- Oct 2018 | Post-doc Fellow Foundation for Research and Technology - Hellas (FORTH) Institute of Electronic Structure & Laser, Ultrafast Laser Micro- and Nano- processing (ULMNP) Laboratory Heraklion, Crete, Greece |
| Jan 2014 – Dec 2014 (1 year) | Post-doc Fellow Foundation for Research and Technology - Hellas (FORTH) Institute of Electronic Structure & Laser, Functional NanoCrystals Laboratory Heraklion, Crete, Greece |

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| Jan 2013- Dec 2013 (1 year) | Post-doc Fellow Foundation for Research and Technology - Hellas (FORTH) Institute of Electronic Structure & Laser, Functional NanoCrystals Laboratory Heraklion, Crete, Greece |
| Mar 2007 – Nov 2012 (5 years) | PhD Candidate – Trainee Foundation for Research and Technology - Hellas (FORTH) Institute of Electronic Structure & Laser, Functional NanoCrystals Laboratory Heraklion, Crete, (Greece) |
| Oct 2003-June 2004 (9 months) Sept 2005-Dec 2005 (4 months) | Program, “ <i>ePhys: Towards and effective use of ICT for Open Learning in Teaching of Physics in Europe</i> ”, Physics Department, Aristotle University of Thessaloniki, Greece |

Publications (First author: 12, corresponding author: 5)

[1] A. Kostopoulou, I. Tsiaoussis and A. Lappas*

"Magneto-optical properties of iron oxide nanoclusters"

AIP Conference Proceedings, 1288, **2010**.

[2] A. Kostopoulou, I. Tsiaoussis and A. Lappas*

"Magnetic Iron Oxide Nanoclusters with Tunable Optical Response"

Photon. Nanostruct: Fundam. Appl. **2011**, 9 (2), 201-206

[3] A. Kostopoulou, F. Thétiot, I. Tsiaoussis, M. Androulidaki, P. D. Cozzoli, and A. Lappas*

"Colloidal Anisotropic ZnO-Fe@Fe_xO_y Nanoarchitectures with Interface-Mediated Exchange-Bias and Band-Edge Ultraviolet Fluorescence"

Chem. Mater., **2012**, 24 (14), 2722-2732.

[4] E. Magoulakis, A. Kostopoulou, G. N. Arvanitakis, A. G. Kanaras, A. N. Andriotis, A. Lappas and P. A. Loukakos*

"Porosity-moderated ultrafast electron transport in Au nanowire networks"

Applied Physics A, **2013**, 111 (3), 711-717.

[5] D. Fragouli, B. Torre, F. Villafiorita-Monteleone, A. Kostopoulou, G. Nanni, A. Falqui, A. Casu, A. Lappas, R. Cingolani, A. Athanassiou*

"Nanocomposite pattern-mediated magnetic interactions for localized deposition of nanomaterials"

ACS Appl. Mater. Interfaces, **2013**, 5 (15), 7253–7257

[6] A. Kostopoulou, K. Brintakis, A. Lascialfari, M. Angelakeris, M. Vasilakaki, K.N. Trohidou, A.P. Douvalis, S. Psycharakis, A. Ranella, L. Manna, A. Lappas*

"Iron-oxide colloidal nanoclusters: From fundamental physical properties to diagnosis and therapy"

Progress in Biomedical Optics and Imaging - Proceedings of SPIE, **2014**

[7] A. Kostopoulou, K. Brintakis, M. Vasilakaki, K.N. Trohidou, A.P. Douvalis, A. Lascialfari, L. Manna, A. Lappas*

"Assembly-mediated Interplay of Dipolar Interactions and Surface Spin Disorder in Colloidal Maghemite Nanoclusters" (*Editor's choice as a "Hot Article"*)

Nanoscale, **2014**, *6*, 3764-3776

[8] A. Kostopoulou, S. K. P. Velu, K. Thangavel, F. Orsini, K. Brintakis, S. Psycharakis, A. Ranella, L. Bordonali, A. Lappas, A. Lascialfari*

"Colloidal Assemblies of Oriented Maghemite Nanocrystals and their NMR Relaxometric Properties"

Dalton Transactions, **2014**, *43*, 8395-9404

[9] E. Y. Yuzik-Klimova, N. V Kuchkina, S. Sorokina, D. G. Morgan, L. Z. Nikoshvili, N. L., V. G. Matveeva, E. M Sulman, B. D Stein, W. E Mahmoud, A. A. Al-Ghamdi, A. Kostopoulou, A. Lappas, Z. B Shifrina and L. M. Bronstein*

"Magnetically Recoverable Catalysts Based on Polyphenylenepyridyl Dendrons and Dendrimers: Control over Nanoparticle Formation and Catalytic Properties"

RSC Adv., **2014**, *4*, 23271-23280

[10] E. Kasotakis, A. Kostopoulou, M. Spuch-Calvar, M. Androulidaki, N. Pelekanos, A. G. Kanaras, A. Mitraki, A. Lappas*

"Assembly of quantum dots on peptide nanostructures and their spectroscopic properties"

Appl. Phys. A, **2014**, *116*, 977-985

[11] E. Kasotakis, A. Kostopoulou, M. Spuch-Calvar, M. Androulidaki, N. Pelekanos, A. G. Kanaras, A. Mitraki, A. Lappas*

"Thin film mesoscale organization of nanoparticles by using biomolecular peptide tools" (Conference paper)

Source of the Document Progress in Biomedical Optics and Imaging - Proceedings of SPIE, **2014**

[12] G.M. Morgan, B.S. Boris, N.V. Kuchkina, E.Y. Yuzik-Klimova, S.A. Sorokina, B.D. Stein, D.I. Svergun, A. Spilotros, A. Kostopoulou, A. Lappas, Z.B. Shifrina, L.M. Bronstein*

"Multicore Iron Oxide Mesocrystals Stabilized by a Poly(phenylenepyridyl) Dendron and Dendrimer: Role of the Dendron/Dendrimer Self-Assembly"

Langmuir, **2014**, *30*, 8543-8550.

[13] N.V. Kuchkina, D.G. Morgan, A. Kostopoulou, A. Lappas, K. Brintakis, B.S. Boris, E.Y. Yuzik-Klimov, B.D. Stein, D.I. Svergun, A. Spilotros, M.G. Sulman, L. Zh. Nikoshvili, E.M. Sulman, Z.B. Shifrina, L.M. Bronstein*

"Hydrophobic periphery tails of polyphenylenepyridyl dendrons control nanoparticle formation and catalytic properties"

Chem. Mater., **2014**, *26*, 5654–5663

[14] A. Kostopoulou, A. Lappas*

"Colloidal magnetic nanocrystal clusters: Variable length-scale interaction mechanisms, synergetic functionalities and technological advantages" (Review)

Nanotechnology Reviews, **2015**, 4, 595-624

[15] D. Sakellari, K. Brintakis, A. Kostopoulou, K. Simeonidis, A. Lappas and M. Angelakeris*

"Ferrimagnetic nanocrystal assemblies as versatile magnetic particle hyperthermia mediators"

Materials Science and Engineering: C, **2016**, 58, 187-193

[16] A. Kostopoulou,* M. Sygletou, K. Brintakis, A. Lappas and E. Stratakis*

"Low-temperature benchtop-synthesis of all-inorganic perovskite nanowires"

Nanoscale, **2017**, 9, 18202-18207

[17] A. Kostopoulou, E. Kymakis, E. Stratakis

"Perovskite nanostructures for photovoltaic and energy storage devices"

J. Mater. Chem. A, **2018**, 6, 9765-9798

[18] A. Kostopoulou, K. Brintakis, E. Fragogeorgi, A. Anthousi, L. Manna, S. Begin-Colin, C. Billotey, A. Ranella, G. Loudos, I. Athanassakis, A. Lappas*

"Iron Oxide Colloidal Nanoclusters as Theranostic Vehicles and Their Interactions at the Cellular Level"

Nanomaterials, **2018**, 8, 315 (**Front cover**)

[19] K. Alexaki, A. Kostopoulou,* M. Sygletou, G. Kenanakis, E. Stratakis*

"Unveiling the Structure of MoS_x Nanocrystals Produced upon Laser Fragmentation of MoS₂ Platelets"

ACS Omega, **2018**, 3, 16728–16734

[20] A. Kostopoulou,* D. Vernardou,* K. Savva, E. Stratakis*

"All-inorganic lead halide perovskite nanohexagons for high performance air-stable lithium batteries"

Nanoscale **2019**, 11, 882-889.

[21] A. Kostopoulou,* K. Brintakis, NK. Nasikas, E. Stratakis*

"Perovskite nanocrystals for energy conversion and storage"

Nanophotonics **2019**, 8, 1607-1640.

[22] A. Heuer-Jungemann, N. Feliu, I. Bakaimi, M. Hamaly, A. Alkilany, I. Chakraborty, A. Masood, M. F. Casula, A. Kostopoulou, E. Oh, K. Susumu, M. H. Stewart, I. L. Medintz, E. Stratakis, W. J. Parak, A. G. Kanaras,*

"The role of ligands in the chemical synthesis and applications of inorganic nanoparticles"

Chemical Reviews **2019**, 119, 4819-4880 (**Front Cover**).

[23] K. Brintakis, E. Gagaoudakis, A. Kostopoulou,* V. Faka, K. Argyrou, V. Binas, G. Kiriakidis, E. Stratakis,*

"Ligand-free all-inorganic metal halide nanocubes for fast, ultra-sensitive and self-powered ozone sensors"

Nanoscale Adv. **2019**, 1, 2699-2706.

[24] A. Lappas,* G. Antonaropoulos, K. Brintakis, M. Vasilakaki, K. N. Trohidou, V. Iannotti, G. Ausanio, A. Kostopoulou, M. Abeykoon, I. K. Robinson, E. S. Bozin

"Vacancy-Driven Noncubic Local Structure and Magnetic Anisotropy Tailoring in $\text{Fe}_x\text{O}-\text{Fe}_{3-\delta}\text{O}_4$ Nanocrystals"

Phys. Rev. X **2019**, 9, 041044.

Book Chapter

[1] "Ferrocene-containing polyphenylenes as precursors for magnetic nanomaterials"

R.A. Dvorikova, Y.V. Korshak, L.N. Nikitin, M.I. Buzin, V.A. Shanditsev, Z.S. Klemenkova, A.L. Rusanov, A.R. Khokhlov, A. Lappas, [A. Kostopoulou](#)

Characterization and Development of Novel Materials Research Compendium, **2013**, 169-182

[2] "Magnetic Nanoparticles in Polymers"

R.A. Dvorikova, Y.V. Korshak, L.N. Nikitin, M.I. Buzin, V.A. Shanditsev, Z.S. Klemenkova, A.L. Rusanov, A.R. Khokhlov, A. Lappas, [A. Kostopoulou](#)

Engineering of Polymers and Chemical Complexity, Volume II, 2014, pp. 145-160

[3] "Metal Nanoparticles in Polymers"

R.A. Dvorikova, Y.V. Korshak, L.N. Nikitin, M.I. Buzin, V.A. Shanditsev, Z.S. Klemenkova, A.L. Rusanov, A.R. Khokhlov, A. Lappas, [A. Kostopoulou](#)

Engineering of Polymers and Chemical Complexity, Volume I, **2014**, pp. 71-87

Patent

A. Lappas, [A. Kostopoulou](#), A. Lascialfari, F. Orsini, S.K.P. Velu, K. Thangavel

"Ferrimagnetic Colloidal Nanoclusters of Maghemite for MRI applications";

No. 1008081, *Greek Industrial Property Organization (OBI)*

Fellowships- Awards- Distinctions

- **Team leader** that excelled in the 10 best in the category for Applied Research in the 3rd Competition "Greece innovates!" Organized by Eurobank and SEV (2016)

16890-APPLIED RESEARCH: "Magnetic nanoparticle clusters as multimodal agents for biological applications of diagnosis and therapy"

- Sep 2016- June 2017 **FELLOWSHIP** OF EXCELLENCE FOR POSTGRADUATE STUDIES IN GREECE- SIEMENS PROGRAM

- Postdoctoral **fellowship** for new researchers in the frame of the project "Human Resources Development, Education and Lifelong Learning 2014-2020" in the context of the project "Development of hybrid 2D-perovskites materials for enhanced efficiency of perovskites solar cells" (MIS 5004411), funded by Greece and the European Union (European Social Fund- ESF)

- **Best poster presentation**

20th International Conference on Magnetism, At Barcelona, 5th to 10th July 2015

“Maghemite Nanocrystal Clusters for MRI Diagnosis and Hyperthermia Medical Treatment”

K. Brintakis, A. Kostopoulou, M. Vasilakaki, K. N. Trohidou, A. Ranella, I. Athanassakis, M. Angelakeris, A. Lascialfari, A. P. Douvalis, A. Lappas

Participation in Research Programs and Funding Sources

[1] Research studentship within “ePhys: Towards and effective use of ICT for Open Learning in Teaching of Physics in Europe”, SOCRATES-Minerva program supported by European Commission.

[2] PhD research studentship (*Tasks*: structure-property relationships in hybrid magnetic nanocrystals) within "NANOTAIL": a Marie-Curie Transfer of Knowledge program (Grant no. MTKD-CT-2006-042459) supported by European Commission.

[3] Post-doc fellowship (*Tasks*: synthesis & characterization of magneto-optical ZnO-based hybrids nanocrystals) within “na(Z)nOwire”: THALES cooperation program, supported by the European Social Fund and Greek national funds through the Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF).

[4] Post-doc fellowship (*Tasks*: development of growth strategies and study of nanoparticle-superlattice physics) within the "Extreme Light Infrastructure-ELI": supported by the GSRT within the framework of the operational program “Competitiveness and Entrepreneurship”.

[5] Post-doc fellowship (*Tasks*: Synthesis and spectroscopic characterization of colloidal magnetic nanocrystals) in the frame of the project NFFA: H2020-INFRAIA-2014-2015, Proposal number: 654360), funded under H2020-E.U.1.4.1.2 - Integrating and opening existing national and regional research infrastructures of European interest.

[6] Post-doc fellowship in the frame of the project “Human Resources Development, Education and Lifelong Learning 2014-2020” in the context of the project “Development of hybrid 2D-perovskites materials for enhanced efficiency of perovskites solar cells” (MIS 5004411), funded by Greece and the European Union (European Social Fund- ESF)

Granted Research Projects

| Call/Title | Funding Source | Role | Dates | Budget (€) |
|--|---|--|-----------|------------|
| H.F.R.I. Research Projects to Support Prosdctoral Researchers LowT-Perovksites “Low-Temperature Growth of Perovskite Nanosystems for High-Performance Perovskite Solar Cells” | General Secretariat for Research and Technology (GSRT) and the Hellenic Foundation for Research and Innovation (HFRI) | PI | 2018-2021 | 179,974.8 |
| FLAG-ERA 2019 PeroGaS “Solution-Processed Perovskite/Graphene Nanocomposites for Self-Powered Gas Sensors” | European Structural and Investment Funds | Co-PI (Partners: IIT-Italy, BIU-ISRAEL) | 2020-2023 | 199,518 |

Summer Schools & Workshops:

- [1] 16th *Summer School in Physics*, July **2004**, Heraklion, Greece.
- [2] "*European School on Magnetism: New Magnetic Materials and their Functions*", 9-18 September **2007**, Cluj-Napoca, Romania.
- [3] "*7th PSI summer school on condensed matter research: probing the nanometer scale with neutrons, photons and muons*", 16-22 August **2008**, Zuoz, Switzerland.
- [4] "*NANOTAIL workshop: Hybrid nanocrystals exhibiting advanced and tailored properties*", 28-29 January **2008**, Lecce, Italy.
- [5] *1st iPEN Intensive Program: Modern teaching methods and soft skills development in science*, 24 – 25 October 2018, Weizmann Institute of Science, Israel

Training:

- [1] 7 days in the Laboratory of NNL-CNR in Lecce in Italy (chemistry synthesis with Dr. P.D. Cozzoli)
- [2] 10 days in the Laboratory of Transmission Electron Microscopy in the Physics Department of Aristotle University of Thessaloniki (with Prof. E. Polychroniadis).
- [3] 10 days in the Laboratory of Transmission Electron Microscopy CEMES/CNRS in Toulouse in France (with Dr. M.-J. Casanove)

Teaching Activities:

2008-09 Laboratory Assistant of undergraduate laboratory courses: "Analytical Chemistry", Chemistry Department, University of Crete, Heraklion, Crete, Greece.

Conferences- Oral presentations (underline indicates the presenter)

- [1] *2nd NANOTAIL Meeting*, 28-29 January 2008, NNL-CNR Lecce, Italy.

"Water Soluble Magnetic Nanoclusters"

A. Kostopoulou

- [2] *1st International Conference from Nanoparticles & Nanomaterials to Nanodevices & Nanosystems*, 16-18 June 2008, Halkidiki, Greece.

"Synthesis and Characterization of Water Soluble Magnetic Nanoclusters"

A. Kostopoulou and A. Lappas

- [3] *XXIV Panhellenic Conference on Solid State Physics and Materials Science*, 21-24 September 2008, Heraklion, Greece.

"Superstructures of Water Soluble Magnetic Nanoclusters"

A. Kostopoulou and A. Lappas

- [4] *3rd NANOTAIL Meeting*, 8-9 December 2008, Toulouse, France.

"Iron- oxide Nanoclusters: Magnetism and Photonic Response"

A. Kostopoulou

[5] *XXV Panhellenic Conference on Solid State Physics & Materials Science*, 20- 23 September, 2009, Thessaloniki, Greece.

"Magneto-Optical Properties of Iron Oxide Nanoclusters"

A. Kostopoulou and A. Lappas

[6] *Emerging Trends & Novel Materials in Photonics*, 7-9 October 2009, Delphi, Greece.

"Magneto-optical Properties of Iron Oxide Nanoclusters"

A. Kostopoulou and A. Lappas

[7] *Final NANOTAIL meeting*, 22-23 September 2010, IESL-FORTH Heraklion, Greece.

"Iron-Oxide CNCs: a) Size Dependent Magnetic Properties b) Development of a New Binary System (CNCs@Au)"

A. Kostopoulou

[8] *Trends in Spintronics and Nanomagnetism*, 23-27 May 2010, Lecce, Italy.

"Coupled ZnO/Iron Oxide Fluorescent Ferromagnetic Nanocrystal"

F. Thetiot, A. Kostopoulou, I. Tsiaoussis, M. Androulidaki, P. D. Cozzoli, and A. Lappas

[9] *XXVI Panhellenic Conference on Solid State Physics & Materials Science*, 26-29 September 2010, Ioannina, Greece.

"Magnetic and Fluorescent ZnO/Iron Oxide Hybrid Nanocrystals"

A. Kostopoulou, F. Thétiot, I. Tsiaoussis, M. Adroulidaki, P. D. Cozzoli, and A. Lappas

[10] *Biomaterials and Bionanomaterials: Recent Advances and Safety-Toxicology Issues*, 5- 12 May 2011, Heraklion, Greece.

"Development of Maghemite Colloidal Nanoclusters as MRI Contrast Agents"

A. Kostopoulou, S. K. P. Velu, T. Kalaivani, A. Lascialfari, A. Douvalis, L. Manna, A. Lappas

[11] *19th Annual International Conference on Composites and Nano Engineering*, 24- 30 July 2011, Shanghai, China.

"Exchange Bias in Hybrid Nanocrystals of Zinc Oxide"

A. Lappas, A. Kostopoulou, F. Thetiot, I. Tsiaoussis, M. Androulidaki, and P.D. Cozzoli

[12] *Joint European Magnetic Symposia-JEMS*, 9-14 September 2012, Parma, Italy.

"Ferrimagnetic Maghemite Colloidal Nanocrystal Clusters: From Material Design to Imaging and Hyperthermia Treatment"

A. Kostopoulou, A. Lappas, K. Brintakis, A. P. Douvalis, S. K. P. Velu, T. Kalaivani, F. Orsini, A. Lascialfari, D. Sakellari, K. Simeonidis, M. Angelakeris, and L. Manna

[13] *5th International Conference on Micro-Nanoelectronics, Nanotechnology and MEMS*, 7-10 October 2012, Heraklion, Greece.

"Hydrophilic γ -Fe₂O₃ ferrimagnetic assemblies: From synthesis to theranostic applications"

A. Kostopoulou, A. Lappas, K. Brintakis, A. P. Douvalis, S. K. P. Velu, K. Kalaivani, F. Orsini, A. Lascialfari, D. Sakellari, K. Simeonidis, M. Angelakeris, and L. Manna

[14] *4th International Congress BioNanoMed*, 13-15 March 2013, Krems, Austria.

"Colloidal Nanoclusters: From materials design to theranostic applications"

A. Kostopoulou, A. Lappas, K. Brintakis, S. K. P. Velu, T. Kalaivani, F. Orsini, A. Lascialfari, A. P. Douvalis, D. Sakellari, K. Simeonidis, M. Angelakeris and L. Manna

[15] *8th International Conference on Fine Particle Magnetism*, Perpignan, France, 24-27 June 2013

"Interface Engineered Fluorescent-Ferromagnetic ZnO-Fe@Fe_xO_yNanocrystals"

A. Kostopoulou, F. Thétiot, M. Androulidaki, A. Lappas, I. Tsiaoussis. and P.D. Cozzoli

[16] *Joint European Magnetic Symposia-JEMS*, 25-30 August 2013, Rhodes, Greece.

"Interface-Mediated exchange-bias in Fluorescent ZnO-Fe@Fe_xO_y Colloidal Hybrid Nanocrystals"

A. Kostopoulou, F. Thétiot, I. Tsiaoussis, M. Androulidaki, P. D. Cozzoli, A. Lappas

[17] *Joint European Magnetic Symposia-JEMS*, 25-30 August 2013, Rhodes, Greece.

"Maghemite Nanoclusters: Static, Dynamic Magnetic Properties and Monte Carlo Simulations"

K. Brintakis, A. Kostopoulou, M. Vasilakaki, K. N. Trohidou, A. Lappas

[18] *SPIE Photonics West: Colloidal Nanoparticles for Biomedical Applications*, 1-4 February 2014, San Francisco, USA.

"Iron-oxide Colloidal Nanoclusters: from Fundamental Physical Properties to Diagnosis and Therapy"

A. Kostopoulou, K. Brintakis, A. Lascialfari, M. Angelakeris, M. Vasilakaki, K. Trohidou, A. P. Douvalis, S. Psycharakis, A. Ranella, L.Manna, and A. Lappas

[19] *30th Panhellenic Conference on Solid-State Physics and Materials Science*, 21-24 September 2014, Heraklion, Greece.

"Maghemite nanoclusters: A promising multifunctional material for biomedicine"

K. Brintakis, A. Kostopoulou, S. Psycharakis, A. Ranella, M. Vasilakaki, K.N. Trohidou, A.P. Douvalis, S.K.P. Velu, L. Bordonali, A. Lascialfari, D. Sakellari, K. Simeonidis, M. Angelakeris, I. Athanassakis and A. Lappas

[20] *NanoBio Conference*, 24-28 September 2018, Heraklion, Crete

"All-inorganic perovskite nanocrystals: from material design to potential applications"

A.Kostopoulou, K. Brintakis and E. Stratakis

[21] EMRS Spring Meeting, 27-31 May 2019, Nice France

"All-inorganic perovskite-based nanosystems: from material design to potential applications"

A. Kostopoulou, K. Brintakis, E. Serpetzoglou, E. Stratakis

[22] EMRS Spring Meeting, 27-31 May 2019, Nice France

"Development of a rapid, room-temperature and self-powered metal-halide gas sensor in few steps"

K. Brintakis, A. Kostopoulou, E. Stratakis

[23] Applied Nanotechnology and Nanoscience International Conference, 18-20 November 2019, Paris

"Direct growth of ligand-free all inorganic metal halides nanostructures: a versatile method for diverse applications"

K. Brintakis, A. Kostopoulou, A. Argyrou, E. Stratakis

Conferences- Posters

[1] XXII Panhellenic Conference on Solid State Physics & Materials Science, 24-27 September 2006, Patra, Greece.

"Μελέτη της μικροδομής του Ni₂MnGa, ενός υλικού που υφίσταται μαρτενσιτικό μετασχηματισμό"

A. Κωστοπούλου, E. Πολυχρονιάδης, H. Morawiec

[2] 7th PSI summer school on condensed matter research: probing the nanometer scale with neutrons, photons and muons, 16-22 August 2008, Zuoz, Switzerland.

"Ordered structures of water soluble superparamagnetic nanoclusters of Fe-O"

A. Kostopoulou, and A. Lappas

[3] XXIV Pan-Hellenic Conference on Solid State Physics, 21-24 September 2008, Heraklion, Greece.

"Electrical Properties of Single Metallic Nanocrystals"

K. Brintakis, A. Kostopoulou, G. Konstantinidis, T. Kostopoulos, Z. Hatzopoulos, and A. Lappas

[4] XXV Panhellenic Conference on Solid State Physics & Materials Science, 20- 23 September 2009, Thessaloniki, Greece.

a) "Au Core-Shell Nanocrystals: Magnetic and Optical Properties"

K. Brintakis, A. Kostopoulou, and A. Lappas

b) "Structural and Magnetic Properties of Colloidal Iron Oxide Magnetic Nanoclusters"

A. P. Douvalis, A. Kostopoulou, A. Lappas, and T. Bakas

[5] *Emerging Trends & Novel Materials in Photonics*, 7-9 October 2009, Delphi, Greece.

"Magnetic- Fluorescent Hybrid Nanocrystals of Zinc Oxide"

F. Thetiot, A. Kostopoulou M. Androulidaki, P.D. Cozzoli, and A. Lappas,

[6] 9th FORTH RETREAT, 9-10 October 2009, Loutra Kyllinis, Greece.

"Magneto-optical Properties of Iron Oxide Nanoclusters"

A. Kostopoulou, F. Thetiot, I. Tsiaoussis, M. Androulidaki, P. D. Cozzoli, and A. Lappas

[7] XXVI Panhellenic Conference on Solid State Physics & Materials Science, 26-29 September 2010, Thessaloniki, Greece.

"Synthesis and Characterization of Iron Oxide Magnetic Nanocrystals"

K. Brintakis, A. Kostopoulou, and A. Lappas

[8] *8th International Conference on Nanosciences & Nanotechnologies*, 12-15 July 2011, Thessaloniki, Greece.

"Shared Interfaces as a Means to Engineer Multifunctionality: Magnetic Fluorescent ZnO Hybrid Nanocrystals"

A. Kostopoulou, F. Th  tiot, I. Tsiaoussis, M. Androulidaki, P. D. Cozzoli, and A. Lappas

[9] *20th Soft Magnetic Materials Conference*, 18- 22 September 2011, Kos, Greece.

"Bottom-up Approach to Magnetic Hyperthermia Agents: From Maghemite Nanoparticles to Large-ferrimagnetic Nanoclusters"

D. Sakellari, E. Mirovalli, K. Simeonidis, A. Kostopoulou, K. Brintakis, A. Lappas, and M. Angelakeris

[10] *Joint European Magnetic Symposia-JEMS*, 9-14 September 2012, Parma, Italy.

"Interparticle Interactions and Spin-glass Behaviour in Colloidal Maghemite Nanocrystals Clusters"

K. Brintakis, A. Kostopoulou, A. Douvalis, and A. Lappas

[11] *5th International Conference on Micro-Nanoelectronics, Nanotechnology and MEMS*, 7-10 October 2012, Heraklion, Greece.

"Interparticle interactions and spin-glass behaviour in colloidal maghemite nanocrystals clusters"

K. Brintakis, A. Kostopoulou, A. Douvalis, and A. Lappas

[12] *8th International Conference on Fine Particle Magnetism*, Perpignan, France, 24-27 June 2013

"Magnetic Nanoclusters as a Theranostic Agent"

K. Brintakis, A. Kostopoulou, A. Lappas, S.K.P. Velu, T. Kalaivani, F. Orsini, A. Lascialfari, A.P. Douvalis, M. Vasilakaki, K.N. Trochidou, L. Manna, D. Sakellari, K. Simeonidis, and M. Angelakeris

[13] *SPIE Photonics West: Colloidal Nanoparticles for Biomedical Applications*, San Francisco, USA, 1-4 February 2014.

"Thin Film Mesoscale Organization of Nanoparticles by using Biomolecular Peptide Tools"

E. Kasotakis, A. Kostopoulou, M. Spuch-Calvar, M. Androulidaki, N. T. Pelekanos, A.G. Kanaras, A. Mitraki, and A.Lappas

[14] *10th Meeting-International Conference on the Scientific and Clinical Applications of Magnetic Carriers*, Dresden, 10-14 June 2014

"Multitasking Iron Oxide Magnetic Nanoclusters for Diagnosis and Medical Treatment"

K. Brintakis, A. Kostopoulou, M. Vasilakaki, A. Ranella, S. K. P. Velu, L. Bordonali, I. Athanasakis, M. Angelakeris, A. Lascialfari, A. P. Douvalis, K. N. Trohidou, A. Lappas

[15] *30th Panhellenic Conference on Solid-State Physics and Materials Science*, 21-24 September 2014, Heraklion, Greece.

"Shaping core-shell iron oxide nanocrystals"

G. Antonopoulos, K. Brintakis, A. Kostopoulou, A. Lappas

[16] 2nd Israel – Greece joint meeting on Nanotechnology and Bionanoscience, 25-28 October 2016, Heraklion, Greece

"Organic- and all inorganic- Lead halide Perovskites: From material synthesis to advanced photovoltaic applications"

I. Konidakis, A. Kostopoulou, G. Kakavelakis, T. Maksudov, E. Kymakis, E. Stratakis

[17] 2nd Israel – Greece joint meeting on Nanotechnology and Bionanoscience, 25-28 October 2016, Heraklion, Greece

"A Maghemite Nanocrystal Cluster for MRI and Hyperthermia Theranostic Medical Approach"

K. Brintakis, A. Kostopoulou, M. Vasilakaki, K. N. Trohidou, A. Ranella, I. Athanassakis, M. Angelakeris, A. Lascialfari, A. P. Douvalis, A. Lappas

[18] 2nd Israel – Greece joint meeting on Nanotechnology and Bionanoscience, 25-28 October 2016, Heraklion, Greece

"Unraveling the local structure of functional iron oxide nano-architectures"

G. Antonaropoulos, K. Brintakis, A. Kostopoulou, G. Ausanio, V. Iannotti, M. Abeykoon, E.S. Bozin, A. Lappas

[19] European Congress and Exhibition on Advanced Materials and Processes- EUROMAT, 17-22 September 2017, Thessaloniki, Greece

"Low-temperature Benchtop-synthesis of All-inorganic Perovskite Nanowires"

A. Kostopoulou, M. Sygletou, K. Brintakis, A. Lappas, E. Stratakis

[20] NanoBio Conference, 24-28 September 2018, Heraklion, Crete

"Different Morphologies of All-Inorganic Perovskite Nano/Microparticles: Physical Properties and Anion Exchange"

K. Brintakis, M. Sygletou, A. Kostopoulou, E. Stratakis

[21] 1st iPEN Intensive Program, 24- 25 October 2018, Weizmann Institute of Science, Israel

"Ultrafast Laser Micro and Nano Processing Laboratory"

I. Konidakis, K. Brintakis, A. Kostopoulou, E. Stratakis

[22] Applied Nanotechnology and Nanoscience International Conference, 18-20 November 2019, Paris

"Metal Halide Perovskite Nanocrystals: Synthesis, Photo-induced Modifications and Applications"

A. Kostopoulou, K. Brintakis, D. Vernardou, E. Stratakis

Lab skills and expertise

- Use of a **Glove-Box** for handling air sensitive reactants and materials.
- Use of **Schlenk techniques** for handling air sensitive materials and preparing of high quality in shape and size nanocrystals (metal oxides, metals, semiconductors) or complex architectures with at least two different materials (Hybrid nanocrystals).
- **Powder X-Ray Diffraction** for the identification of the structure of a material.
- **Conventional Transmission Electron Microscopy (CTEM)** to study the morphological characteristics of the nanocrystals (size distribution and shape).

- **High Resolution Transmission Electron Microscopy (HRTEM)** for the structural characterization and the study of the interface between two different material domains in hybrid nanocrystals.
- **FFT transformation analysis of the HRTEM images** for the structural characterization of single or binary nanocrystals.
- **High Resolution Transmission Electron Microscopy (HRTEM)** for biological samples.
- **SQUID Magnetometry** to study the magnetic properties of materials.
- **UV-Vis Spectrophotometry** for the optical characterization (plasmonic) of metal-based nanocrystals.
- **Writing of scientific papers and proposals.**

Language skills

English: Listening: B2, Reading: C2, Speaking: B3, Writing: C2

Computer skills

- Microsoft Office 2010 (Word, Excel, Power point)
- Origin Pro 9.0
- Adobe Photoshop CS6 (Processing photos or HRTEM & CTEM images).
- Digital Micrograph 2.11 (Processing and analyzing HRTEM & CTEM images).
- ImageJ 1.48 (Processing and analyzing HRTEM & CTEM images).