Curriculum Vitae

November 2023

Personal Information

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

Education

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 Halkidikis (Greece) Grade graduation: 17.7/20

Employment record

Sept 2016- Now	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
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	PhD Candidate – Trainee

(5 years)	
	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, *"ePhys: Towards and effective use of ICT for Open Learning in Teaching of Physics in Europe",* Physics Department, Aristotle University of Thessaloniki, Greece

Publications (First author: 17, corresponding author: 14)

[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 MoS_2 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 $Fe_xO{-}Fe_{3-\delta}O_4$ Nanocrystals"

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

[25] A. Kostopoulou,* D. Vernardou,* D. Makri, K. Brintakis, K. Savva, E. Stratakis*

"Highly stable metal halide perovskite microcube anodes for lithium-air batteries"

Journal of Power Sources Advances **2020**, *3*, 100015

[26] I. Konidakis,* K. Brintakis, A. Kostopoulou, I. Demeridou, P. Kavatzikidou, E. Stratakis*

"Highly luminescent and ultrastable cesium lead bromide perovskite patterns generated in phosphate glass matrices"

Nanoscale **2020**, *12*, 13697-13707

[27] A Kostopoulou, * K Brintakis, E Serpetzoglou, E Stratakis*

"Laser-Assisted Fabrication for Metal Halide Perovskite-2D Nanoconjugates: Control on the Nanocrystal Density and Morphology"

Nanomaterials **2020**, *10*, 747

[28] A. Kostopoulou,* D. Vernardou,* D. Makri, K. Brintakis, K. Savva, E. Stratakis*

Highly stable metal halide perovskite microcube anodes for lithium-air batteries

Journal of Power Sources Advances 2020, *3*, 100015

[29] S. Mourdikoudis,* A. Kostopoulou*, AP. LaGrow*

"Magnetic Nanoparticle Composites: Synergistic Effects and Applications"

Advanced Science 2021, *8*, 2004951

[30] A. Kostopoulou, D Vernardou

"Perovskite Nanostructures: From Material Design to Applications"

Nanomaterials 2021, *12*, 97

[31] A Argyrou, K Brintakis,* A Kostopoulou,* E Gagaoudakis, I Demeridou, V. Binas, G. Kiriakidis, E. Stratakis*

"Highly sensitive ozone and hydrogen sensors based on perovskite microcrystals directly grown on electrodes"

Journal of Materiomics 2022, *8*, 446

[32] A. Kostopoulou,* K. Brintakis,* M. Sygletou, K. Savva, N. Livakas, M. A. Pantelaiou, Z. Dang, A. Lappas, L. Manna, E. Stratakis*

"Laser-Induced Morphological and Structural Changes of Cesium Lead Bromide Nanocrystals"

Nanomaterials 2022, *12*, 703

[33] A. Argyrou, K. Brintakis, A. Kostopoulou,* E. Gagaoudakis, I. Demeridou, V. Binas, G. Kiriakidis, E. Stratakis*

"Highly sensitive ozone and hydrogen sensors based on perovskite microcrystals directly grown on electrodes" , Journal of Materiomics 2022, 8 (2), 446-453

[34] A. Kostopoulou,* I. Konidakis, E. Stratakis

"Two-dimensional metal halide perovskites and their heterostructures: from synthesis to applications

Nanophotonics 2023, 12 (9), 1643-1710, https://doi.org/10.1515/nanoph-2022-0797

[35] S. Daskalakis, A. Kostopoulou, K. Brintakis, E. Stratakis, V. Prasad Prasadam, K. Menguelti, N. Bahlawane, D. Vernardou*

Investigation of Si-Coated Multiwalled Carbon Nanotubes as Potential Electrodes for Multivalent Metal-Ion Electrochemical Energy Storage Systems,

The Journal of Physical Chemistry C 2023, 127 (27), 13364-13379

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**

1) 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

2) EMRs Spring Meeting 31 May-4 June 2021,

“Metal halide perovskites for low-cost and safe Li-air batteries”

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

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 (€)
BRIDGE, Breath Research Interactions and Development via Guidance and Exchange	Horizon Europe	Co-PI (Partners: IIT-Italy, FSG Fraunhofer)	2022-2025	798,750

H.F.R.I. Research Projects to Support Prostdoctoral 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)

[4] 3 weeks in the IVV Fraunhofer (with Dr Jonathan Joanathan Beauchamp), training in breath research

[5] 4 weeks in IIT (with Prof. Liberato Manna) training in the synthesis and characterization of nanocrystals

Teaching Activities:

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

2022-23 Post Graduate Program on 'Nanotechnology for Energy Applications,Hellenic Mediterranean University, Coarse: Photonic Processes for Energy Devices

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] *3nd 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 Octomber 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 Octomber 2012, Heraklion, Greece.

"Hydrophilic γ-Fe_2O_3 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@FexOyNanocrystals"

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

[24] EMRS Fall Meeting, 19-22 September 2022, Warsaw

“Advanced photonic processes for perovskite-based energy storage devices”

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

[25] XXXVI Pan-Hellenic conference on Solid-State Physics and Materials Science Heraklion, 26-28 September 2022

“Advanced photonic processes for low-cost and safe perovskite-based energy storage devices”

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

[26] nanoGe International Conference on Emerging Light Emitting Materials (EMLEM22), 3-5 October 2022, Cyprus

“Low-temperature synthesis of all-inorganic metal halide perovskites for gas sensing and energy storage applications”

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

Conferences- Posters

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

"Μελέτη της μικροδομής του Ni_2MnGa, ενός υλικού που υφίσταται μαρτενσιτικό μετασχηματισμό"

A. Κωστοπούλου, Ε. 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 Octomber 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. Thétiot, 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. Antonaropoulos, 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

[23] NanoGe Online Meetup Conference, Shape-Controlled Nanocrystals: Synthesis, Characterization Methods and Applications, 7 May 2020

a) “All-inorganic Perovskite Nanocrystals: From Material Design to Potential Applications”

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

b) “Direct Growth of Ligand-Free All-Inorganic Metal Halides Nanostructures: A Versatile Method for Diverse Applications, The Gas Sensor Case”

K. Brintakis, A. Kostopoulou, E. Stratakis

[24] Internet NanoGe Conference on Nanocrystals, June 28- July 2, 2021

“Laser-assisted processes on metal halide nanocrystals: Shape/dimensionality transformations and conjugation with 2D materials”

A. Kostopoulou, K Brintakis, K. Savva, N. Livakas, E. Stratakis

[25] Online EMRS Spring Meeting, 31 May- 4 June 2021

a) “Metal halide perovskites for low-cost and safe Li-air batteries”

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

b) “Laser-assisted processes on metal halide perovskite nanocrystals: Shape/dimensionality transformations and conjugation with 2D materials”

K. Brintakis, K. Savva, A. Kostopoulou, 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

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).