

- Tailoring the functionalities of nanoparticles, e.g. control over the size and the symmetry of nanocrystals during growth or phase transitions, energy flow at the nanoscale and at interfaces.
- EMF coherent interactions.
- Nanothermodynamics.
- Biophotonics.

External funding

Scientific coordinator of 16 European and 4 National research projects.

Conferences and invited talks

Participating at 157 international conferences, 41 invited talks.

Honors and awards

Greek Scholarship Foundation (1973); Greek Scholarship Foundation (1980-1983); NATO scholarship (1978-1979); NATO Summer Schools (1982, 1984, 1987); Royal Society (1986 University of Edinburgh and 1997 University of Liverpool); EU scholarship for access at large scale installations (1996).

Teaching activities

Teaching assistant at the Victorian University of Manchester, UK (1980-1983). Teaching at the Postgraduate School of Josef Stefan Institute, Slovenia (2004-). Teaching at the Postgraduate program of Department of Biology, National Capodistrian University of Athens. Teaching at the Postgraduate School of Department of Chemical Engineering, National Technical University of Athens. Supervision for 9 post-graduate students (6 Ph.D. and 3 Master Thesis), 6 honor theses.

Professional affiliations & activities

Greek National Expert at the Program Committee for Nanotechnology in European Union (2004-2007).

National Representative of Greece at the NMP-FP7, Nanotechnology, Materials, Processing (2007-2010).

Reviewer for several international scientific journals.

Evaluator of Research Projects in various European Commission panels.

Publications

93 publications in refereed journals, 33 publications in refereed conference proceedings, 4 chapters in books. More than 925 citations (h-19).

Selected recent publications

1. "Charge transport mechanisms and memory effects in amorphous TaNx thin films", N. Spyropoulos-Antonakakis, E. Sarantopoulou, G. Drazic, Z. Kollia, D.Christofilos, G. Kourouklis, D. Palles and A. C. Cefalas, [Nanoscale Res. Lett.](#) **8**, 432 (2013).
2. "Pulsed-laser fabrication of gas-filled hollow Co–Pt nanospheres", S. Sturm, K.Z. Rozman, B. Markoli, N.S. Antonakakis, E. Sarantopoulou, Z. Kollia and S. Kobe, [Acta Mater.](#) **61**, 7924 (2013).
3. "Thermionic field emission in gold nitride Schottky nanodiodes", N. Spyropoulos-Antonakakis, E. Sarantopoulou, Z. Kollia, Z. Samardzija, S. Kobe and A. C. Cefalas, [J. Appl. Phys.](#) **112**, 094301 (2012).
4. "Entropic nanothermodynamic potential from molecular trapping within photon induced nano-voids in photon processed PDMS layers", A. C. Cefalas, E. Sarantopoulou, Z. Kollia, M. Kitsara, I. Raptis and E. Bakalis, [Soft Matter](#) **8**, 5561 (2012).
5. "Protein immobilization and detection on laser processed polystyrene surfaces", E. Sarantopoulou, P.S. Petrou, Z. Kollia, D. Palles, N. Spyropoulos-Antonakakis, S. Kakabakos and A.C. Cefalas, [J. Appl. Phys.](#) **110**, 064309 (2011).
6. "Interplanetary survival probability of *Aspergillus terreus* spores under simulated solar vacuum ultraviolet irradiation", E. Sarantopoulou, I. Gomoiu, Z. Kollia and A.C. Cefalas, [Planet. Space Sci.](#) **59**, 63 (2011).

7. "Magnetic Field Trapping in Coherent Antisymmetric States of Liquid Water Molecular Rotors", A. C. Cefalas, E. Sarantopoulou, Z. Kollia, C. Riziotis, G. Dražic, S. Kobe, J. Stražičar, and A. Meden, [J. Comput. Theor. Nanosci. **7**, 1800 \(2010\).](#)
8. "Nanocrystallization of CaCO₃ at solid/liquid interfaces in magnetic field: A quantum approach", A. C. Cefalas, S. Kobe, G. Dražic, E. Sarantopoulou, Z. Kollia, J. Stražičar, A. Meden, [Appl. Surf. Sci. **254**, 6715 \(2008\).](#)