

# GEORGIA ZISSIMOU

ONISILOS MSCA COFUND FELLOW



Πανεπιστήμιο Κύπρου  
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ONISILOS



Georgia's ONISILOS MSCA COFUND research is focusing on the synthesis, characterization and physical & spin-related properties of innovative (sub)phthalocyanine-fused triazinyl polyradicals.

Dr Georgia Zissimou (<https://www.researchgate.net/profile/Georgia-Zissimou>) obtained her BSc in Chemistry at Aristotle University of Thessaloniki and her PhD in Synthetic Heterocyclic Chemistry at the University of Cyprus. Her PhD research, involved the synthesis, chemistry, oxidative stability and characterization of new azaacene molecules with potential application in both biology and material sciences. Following her PhD, Georgia joined Prof. dr hab. inż. Piotr Kaszyński's group, at the Centre of Molecular and Macromolecular Studies in Łódź, Poland, for a 2-year research post-Doc. Her research includes more than 20 research articles, 1 patent appl., and 1 book chapter, focusing on the chemistry of azaacenes and Blatter radicals.

Georgia has taught chemistry-related subjects at the University of Cyprus, European University of Cyprus and KES College. Her ONISILOS MSCA co-fund research is focusing on the synthesis, characterization and physical & spin-related properties of innovative (sub)phthalocyanine-fused triazinyl polyradicals. Georgia will synthesize 6,7-dicyano-substituted Blatter radicals (Prof. Panayiotis Koutentis, Dept. Chemistry, UCY, primary advisor, <https://www.researchgate.net/profile/Panayiotis-Koutentis>) and in collaboration with Prof. Angela Sastre Santos (Univ. Miguel Hernández de Elche, Spain, secondment, <https://www.researchgate.net/profile/Angela-Sastre-Santos>), will cyclo-oligomerize (acid/metal-catalyzed) the 6,7-dicyano Blatter radicals to prepare, isolate and characterize open shell subphthalocyanines & phthalocyanines. Upon successful synthesis of these high-spin exotic targets, Georgia will study these polyradicals for magnetic (Dr Christos P. Constantinides, Univ. Michigan-Dearborn, USA, collaborator, <https://www.researchgate.net/profile/Christos-Constantinides-2>), electrical & spintronic applications (Dr Theodossis Trypiniotis, Dept. Physics, UCY, secondary advisor, <https://ucyweb.ucy.ac.cy/dir/en/cb-profile/theot>), which will include: X-ray, electrochemical, magnetic, liquid and solid-state EPR and VT-EPR, optical (abs./emiss.), and spintronic (electrical conductivity of single crystals & thin films, spin current injection and detection) studies, as well as theoretical (computational) studies.

An industrial secondment at Heliatek GmbH in Germany (<https://www.heliatek.com/en/>) will also provide further insight on film technology and possible applications for the synthesized polyradicals. The solid-state properties (magnetism and conductivity) will clarify the polyradical's application & commercial value. Overall, the project will advance the state of art in open shell high-spin materials and spintronics.