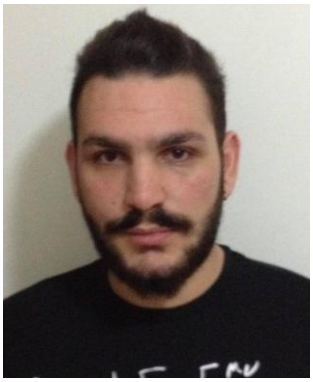
KYRIACOS GEORGIOU, PhD

Current Address: 4, Pekinou street, 3021 Limassol, Cyprus

E-mail: Georgiou.Kyriacos@ucy.ac.cy

Tel: Cy +357 99331551

Personal webpage: www.kyriacosgeorgiou-physics.com



Kyriacos is a hardworking, motivated and career-oriented researcher with expertise in Experimental Physics and Molecular Engineering, and an impressive research track record. He holds a master degree in Electrical and Electronic Engineering specializing in Renewable Energy and Clean Technology Systems. He has also completed a PhD in Quantum Optics and Materials Physics and worked as a postdoctoral fellow on a variety of EU, UK, CY and US funded projects with many academic and industrial collaborators. He has more than 10 years of research experience and was recently a Postdoctoral Scholar in the Pritzker School of Molecular Engineering at University of Chicago and Center for Nanoscale Materials at Argonne National Laboratory in the US. At the moment he is a Marie Skłodowska-Curie Individual Fellow in the Department of Physics at University of Cyprus. His main research interests focus on understanding fundamental concepts in organic semiconductor physics with an aim to develop efficient optoelectronic devices for applications in photonics, light-harvesting, communications, information processing etc. He is also interested in nano-structures for photon-assisted modification of chemical and physical properties of molecular materials as well as non-invasive bio-optical engineering.

Professional Experience

Apr 2023 – date **University of Cyprus**

Department of Physics

Marie Skłodowska-Curie Individual Fellow in Photonics, Material Physics and Organic/Hybrid Optoelectronics.

Mar 2022 – Mar 2023 **Argonne National Laboratory**

Division of Nanoscience Technology – Center for Nanoscale Materials

Postdoctoral Scholar in Molecular Engineering, Optical Microcavities, Material Physics, Infrared Photonics.

Mar 2022 – Mar 2023 **University of Chicago**

Pritzker School of Molecular Engineering

Postdoctoral Scholar in Molecular Engineering, Optical Microcavities, Material Physics, Infrared Photonics.

Sept 2020 – Mar 2022 **University of Cyprus**

Department of Physics

Onisilos Research Fellow in Material Physics, Photonics, Ultrafast Spectroscopy and Organic/Hybrid Optoelectronics.

Sept 2021 – Jan 2022 **University of Cyprus**

Department of Physics

Lecturer of the undergraduate module 'PHY322 - Advanced Physics Laboratory II – Atomic and Nuclear Physics'.

Oct 2020 – Sept 2022 **The University of Sheffield**

Department of Physics and Astronomy

Honorary Research Fellow in Material Physics, Photonics, Ultrafast Spectroscopy and Organic/Hybrid Optoelectronics.

Oct 2018 – Oct 2020 **The University of Sheffield**

Department of Physics and Astronomy

Post-Doctoral Research Associate in Material Physics, Photonics and Organic/Hybrid Optoelectronics.

Education

Oct 2014 – Oct 2018 **The University of Sheffield**
Department of Physics and Astronomy

PhD in Physics

Research interests: Material Physics, Photonics, Organic/Hybrid Optoelectronics

- **Thesis Title:** Exciton-Polaritons in BODIPY-filled Microcavities

Thesis Defense: 05/12/2018 **PhD Awarded:** 15/01/2019 **PhD Advisor:** Prof. David G. Lidzey
Thesis Examiners: Prof. Maurice Skolnick and Prof. William Bill Barnes

Sept 2012 – Sept 2013 **The University of Manchester**

School of Electrical and Electronic Engineering

MSc Renewable Energy and Clean Technology

- MSc thesis: 'Effects of temperature and series resistance variation on the performance of silicon solar cells'

Sept 2007 – Jul 2012 **The University of Patras**
Department of Physics

BSc in Physics

- Specialization: Energy Materials and Environmental Physics

Publications

2024

- **Georgiou K.** *et al.* Orientation Sensitive SEIRA Sensors Based on Single-Walled Carbon Nanotube Near Fields, 24(34), 10540-10546, *Nano Letters* (2024).
- Russo M., **Georgiou K.** *et al*. Direct Evidence of Ultrafast Energy Delocalization Between Optically Hybridized J-Aggregates in a Strongly Coupled Microcavity, 12(25), 2400821, *Adv. Opt. Mater*., (2024).
- Sasaki Y., **Georgiou K.** *et al.* Radiative pumping in a strongly coupled microcavity filled with a neat molecular film showing excimer emission, 26, 14745-14753, *ChemPhys PhysChem*, (2024).

2023

- **Georgiou K.** et al. Strong exciton-photon coupling in free-standing organic membranes. *J. Chem. Phys.*, 159(23), 234303 (2023).
- McGhee K. *et al.* Ultrafast optical control of polariton energy in an organic semiconductor microcavity. *Adv. Opt. Mater.*, 11(16), 2300262 (2023).

2022

- Athanasiou M. *et al.* Flexible, Free-Standing Polymer Membranes Sensitized by CsPbX3 Nanocrystals as Gain Media for Low Threshold, Multicolor Light Amplification. *ACS Photonics*, 9 (7), 2385-2397 (2022).
- Pandya R. *et al.* Tuning the coherent propagation of organic exciton-polaritons through dark state delocalization. *Adv. Sci.*, 9 (18), 2105569 (2022).
- McGhee K. E. *et al.* Polariton condensation in a microcavity using a highly-stable molecular dye. *J. Mater. Chem. C,* 10 (11), 4187-4195 (2022).

2021

- McGhee K. E. *et al.* Polariton condensation in an organic microcavity utilising a hybrid metal-DBR mirror. *Sci. Rep.*, 11, 20879 (2021).
- Renken S. *et al.* Untargeted Effects in Organic Exciton-Polariton Transient Spectroscopy: A Cautionary Tale. *J. Chem. Phys.*, 155, 154701 (2021).
- **Georgiou K.** *et al.* Ultralong-range polariton-assisted energy transfer in organic microcavities. *Angew. Chem. In. Ed.*, 60 (30), 16661-16667 (2021).
- **Georgiou K.** *et al.* Observation of Photon-Mode Decoupling in a Strongly Coupled Multimode Microcavity. *J. Chem. Phys.*, 154 (12), 124309 (2021).

2020

- **Georgiou K.** *et al.* Strong Coupling of Organic Dyes Located at the Surface of a Dielectric Slab Microcavity. *J. Phys. Chem. Lett*., 11, 9893-9900 (2020).
- Alanazi T. I. *et al.* Potassium iodide reduces the stability of triple-cation perovskite solar cells. *RSC Advances,* 10 (66), 40341-40350 (2020).
- Jayaprakash R., Whittaker C. E., **Georgiou K.** *et al.* A two-dimensional organic-exciton polariton lattice fabricated using laser patterning. *ACS Photonics*, 7 (8), 2273–2281 (2020).
- Putintsev A. *et al.* Nano-second exciton-polariton lasing in organic microcavities. *Appl. Phys. Lett.*, 117 (12), 123302 (2020).
- Gillard D. *et al.* Strong Exciton-Photon Coupling in Large Area $MoSe_2$ and WSe_2 Heterostructures Fabricated from Two-Dimensional Materials Grown by Chemical Vapor Deposition. *2D Materials* (2020).
- Yagafarov T. *et al.* Mechanisms blueshifts in organic polariton condensates. *Commun. Phys.*, 3 (1), 1-10 (2020).

2019

- Al-Jashaam F. L. *et al.* The optical structure of micropillar microcavities containing a fluorescent conjugated polymer. *Adv. Quantum Technol.*, 7 (17), 1900163 (2019).

- Polak D. *et al.* Manipulating matter with strong coupling: harvesting triplet excitons in organic exciton microcavities. *Chem. Sci.*, 11, 343-354 (2019).
- Jayaprakash R., **Georgiou K.** *et al.* A hybrid organic-inorganic polariton LED. *Light Sci. Appl.*, **8**(81) (2019).
- Sannikov D. *et al.* Room-temperature broadband polariton-lasing from a dye-filled microcavity. *Adv. Opt. Mater.*, **7**(17) (2019).

2018

- **Georgiou K.** *et al.* Generation of anti-Stokes fluorescence in a strongly coupled organic semiconductor microcavity. *ACS Photonics*, **5**(11), 4343-4351 (2018).
- **Georgiou K.** *et al.* Control over energy transfer between fluorescent BODIPY dyes in a strongly-coupled microcavity. *ACS Photonics*, **5**(1), 258-266 (2018).

2017

- Musser, A. J., Rajendran, S. K., **Georgiou, K.** *et al.* Intermolecular states in organic dye dispersions: excimers vs. aggregates. *J. Mater. Chem. C*, **5**(33), 8380–8389 (2017).
- **Georgiou K.** and Cookson T. *et. al.* A Yellow Polariton Condensate in a Dye Filled Microcavity. *Adv. Opt. Mater.*, **5**(18), 1700203 (2017).

2016

- Grant, R. T. *et al.* Efficient Radiative Pumping of Polaritons in a Strongly Coupled Microcavity by a Fluorescent Molecular Dye. *Adv. Opt. Mater.*, **4**(10), 1615 (2016).

Publications Under Preparation

- Genco A. *et al*. Femtosecond switching of strong light-matter interactions in microcavities with two-dimensional semiconductors, *Under Review* in *Nat*. Comms., (2025).
- Manoli A. *et al*. Optical Properties of Thin Films of Tin Iodide Perovskite Nanostructures, *Under Review* in *Adv. Opt. Mater*., (2025).
- Lioudakis E., **Georgiou K.** *et al*. Observation of a localized surface-related state in the strong confinement regime of InAs NCs which leads to the formation of hybridized In-Zn-S(e) states at the interlayer of InAs/ZnS(e) core/shells, *In preparation*, (2025).

Regular Peer-Review Services to Scientific Journals

- ACS Photonics
- Nano Letters
- Nature Communications
- Advanced Optical Materials
- Scientific Reports
- Chemical Physics Letters
- Optical and Quantum Electronics
- Chemistry – A European Journal

Editorial Services in Scientific Journals

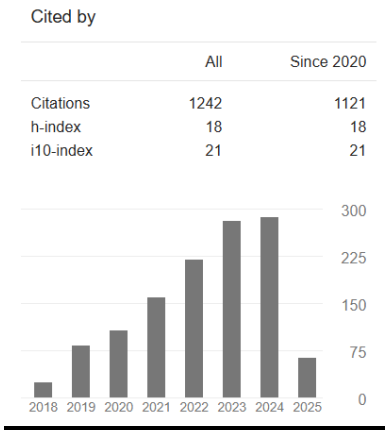
- Nanomaterials - Guest Editor for the special issue '*Novel Advances in Optical Nanocavities*', (2022).

Selected Conferences

- GRC Plasmonics and Nanophotonics, Maine, USA, July 2024.
- Invited – Kyushu University, Fukuoka, Japan, May 2024.

- UK Semiconductors, Sheffield, UK, July 2023.
- OECS18, Lecce, Italy. June 2023.
- SCOM 2021, Gothenburg, Sweden, April 2021. (held online due to Covid-19)
- PLMCN 2020, Clermont-Ferrand, France, October 2020. (held online due to Covid-19)
- UK Semiconductors, Sheffield, UK, July 2019.
- International School on Polaritonics and Photovoltaics, Sicily, Italy, August 2017.
- UK Semiconductors, Sheffield, UK, July 2017.
- Invited - Science of the future, Kazan, Russia, September 2016.
- EOSAM, Berlin, Germany, September 2016.
- ICSCE8, Edinburgh, UK, April 2016.
- Workshop on Condensates of Light, Buckinghamshire, UK, January 2016.
- 2nd Russian-British workshop for young scientists: Advanced Polaritonics and Photonics, Suzdal, Russia, March 2015.

Research Impact (Google Scholar)



Research Grants, Scholarships and Awards

- Project Coordinator – Bilateral Collaborations – IδEK Grant No. 'BILATERAL/ISRAEL (MOST)/0224/0023' – €200,000.00 – (2024-2027).
- Project Coordinator / Fellow – Marie Skłodowska-Curie Individual Fellowship – SYZEFXIS – European Commission – Grant Agreement No. '101066752' – €164,328.00 – (2023-2025).
- Collaborator / Participant on project HoloCIM funded by CODEVELOP – RESTART RESEARCH – IδEK Grant No. 'CODEVELOP-ICT-HEALTH/0322/0047' – €599,980.80 – (2023-2025).

- Holder – Royal Society International Exchanges – Exchange Researcher Grant (University of Exeter – University of Cyprus) – Grant No. 'IES\R3\213193' – £12,000.00 – (2022-2023).

- Holder – Laserlab Europe Collaboration – Visiting Researcher Travel Grant (Politecnico di Milano) – Grant No. 'CUSBO002805' – (2021-2023).

- Honorary Research Fellow – University of Sheffield – (2020-2022).

- Holder – Onisilos Research Fellowship – University of Cyprus €70,000.00 – (2020-2022).

- PhD Scholarship – EPSRC Doctoral Training Grant – (2014-2018).

- Winner of a competitive research grant (£1000.00) by the University of Sheffield to use in any way to develop my doctoral skills under the scheme Postgraduate Researcher Experience Programme (PREP), 2017.

- First prize award winner for the presentation 'Hybridization of Frenkel-excitons through strong coupling.' Research Away Day, Sheffield, UK, July 2016.

- Award – Invited by the Rossotrudnichestvo to the Science of the Future – New Generation Program. The aim was to bring together the most promising young scientist from around the world and encourage collaborations, Kazan, Russia, September 2016.

Science Communication and Outreach Activities

- Exhibition: 'Laser Physics and VCSEL Cake', Discovery Night - University of Sheffield, March 2019, Sheffield, UK – Exhibition Organizer and Demonstrator.

- Exhibition: 'Quantum Light', Cheltenham Science Festival, June 2017, Cheltenham, UK – Demonstrator.

- Exhibition: 'European Researchers' Night 2023', September 2023, Nicosia, Cyprus – Participating.

- Exhibition: 'Science is Wonderful' European Commission, March 2024, Brussels, Belgium – Participating.

Reference Letters

If Reference Letters are required, please get in touch with me and I will provide the contact details of the following academics:

- Professor Andreas Othonos – University of Cyprus
- Associate Professor Grigorios Itskos – University of Cyprus
- Professor David G. Lidzey – University of Sheffield