

# PROF. EMMANUEL KYMAKIS

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Researcher ID: <http://www.researcherid.com/rid/B-2829-2008>  
Google Scholar: <http://scholar.google.gr/citations?user=AWrgzokAAAAJ&hl>

## 1. EDUCATION

**Cambridge University**, Cambridge, UK (1999-2003)  
*Ph. D. in Electrical Engineering* (Department of Engineering)  
Thesis Title: Organic Photovoltaic Devices Based on Conjugated Polymers & Carbon Nanotubes  
Advisor: Professor Gehan A.J. Amaratunga

**Liverpool University**, Liverpool, UK (1995 - 1999)  
*Bachelor of Engineering* (Electrical Engineering & Electronics)  
*First Class Honours*, Graduated Valedictorian  
Diploma Thesis: A Multifunctional, Personal & Mobile Spiral Antenna for Satellite Communications

## 2. AWARDS, DISTINCTIONS, AND FELLOWSHIPS

**Vice-President** of the Hellenic Mediterranean University Research Center 2020-  
**Editorial Board Member** of of Discover Materials (Springer Nature) 2021-  
**Leader** of Energy Generation WP of the Graphene Flagship 2020-2023  
**Member** of Engineering Sciences board of the **Greek National Council** for Research & Innovation 2018-2020  
**Elected member** of the General Assembly of the Greek Foundation of Research & Innovation, 2017-2019  
**Excellence (ARISTEIA II) Award** by the General Secretariat of Research & Technology, 2014  
**Emerging Investigator** – RSC Chemical Communications, 2014  
**National Representative and Member of the Management Committee** of the COST MP1307: Stable Next-Generation Photovoltaics: Unraveling degradation mechanisms of Organic Solar Cells by complementary characterization techniques (StableNextSol)  
**National Representative and Member of the Management Committee** of the COST MP1202: Rational design of hybrid organic-inorganic interfaces: the next step towards advanced functional materials  
**National Representative and Member of the Management Committee** of the Cost action MP0902: Composites of Inorganic Nanotubes and Polymers  
**Member of the Steering committee** of the ESF research programme ‘New generation of organic based photovoltaic devices’ (ORGANISOLAR)  
**Honorary Lecturer**, University of Connecticut, Institute of Material Sciences  
**Cambridge European Trust Fellowship**  
**Isaac Newton Research Studentship** for PhD at Cambridge University  
**EPSRC Research Scholarship**, for study towards a PhD

## 3. AREAS OF INTEREST

### **Research Topics**

Photovoltaic materials and devices  
Organic & hybrid electronic materials  
Synthesis and fabrication of nanocomposites  
Field emission emitters  
Graphene and related 2D materials  
Photovoltaic cells and panels evaluation

### **Engineering & Consultancy Topics**

Design and Implementation of photovoltaic power plants  
Grid connection study of power plants  
Due diligence analysis of renewable energy projects  
Environmental study of PV plants  
Solar thermal power systems  
Simulation of energy systems

## 4. PUBLICATIONS – PRESENTATIONS – OTHER ACTIVITIES (Synopsis)

Dr. Kymakis has published 125 papers in peer-reviewed journals, 4 in books, 8 in refereed conference proceedings. His work has been presented 102 times (40 invited) in international meetings. He has given 12 invited lectures at academic and industrial institutions. He has received **9,074 citations** with an **h-index of 49**. He has been a reviewer for *Advanced Materials*; *Energy & Environmental Science*; *Advanced Energy Materials*; *ACS Nano*; *Materials Today*; *Nature Communications*; *Advanced Functional Materials*; *Progress in Photovoltaics*; *Chemistry of Materials*; *Small*; *Nanoscale*; *Journal of Materials Chemistry*; *ACS Applied Materials & Interfaces*; *Carbon*; *Solar Energy Materials Solar Cells*; *Journal of Physical Chemistry C*; *Langmuir*; *Organic Electronics*; *Applied Physics Letters*; *Nanotechnology*; *Journal of Applied Physics*. He is also member of the advisory council Nanopolis, Multimedia Education and Courses in Nanotechnology. He is an evaluator for the *National Science Foundation*, U.S.A., for the *European Science Foundation*, for the *Department of Energy*, USA, for the *European Union FP7*, for the *Research Promotion Foundation of Cyprus*, for the *Agence Nationale de la Recherche*, for the *General Secretariat for Research and Technology*, Greece.

## **5. EXPERIENCE**

***Vice-President*** of the Hellenic Mediterranean University Research Center 2020-

***Full Professor (tenured)***, Dept. of Electrical & Computer Engineering, Hellenic Mediterranean University, Greece (May 2019- )

***Head*** of the Dept. of Electrical Engineering, TEI of Crete, Greece (Sep 2018 – May 2019)

***Director*** of the Center of Materials Technology and Photonics, *TEI of Crete, Greece (Mar 2019 – Feb 2022)*

***Full Professor (tenured)***, Dept. of Electrical Engineering, TEI of Crete, Greece (Dec 2016- May 2019)

***Associate Professor (tenured)***, Dept. of Electrical Engineering, TEI of Crete, Greece (Dec 2012-Dec 2016)

***Assistant Professor (tenure track)***, Dept. of Electrical Engineering, TEI of Crete, Greece (Apr 2009-Dec 2012)

***Adjunct Assistant Professor***, Dept. of Electrical Engineering, TEI of Crete, Greece (Sep 2005-Apr 2009)

**Teaching activities:** >15 years of teaching experience in electrical engineering. Courses included: Electronics I and II, Electrical circuits, Telecommunications, Renewable energy systems, Advanced Materials & Microelectronics, Energy Materials & Devices -Author of lecture notes for Electronics I, Telecommunications, Renewable energy systems and Advanced Materials & Microelectronics.

**Research interests:** synthesis and solution processing of graphene, carbon nanotubes and layered crystals for the development of electronic and energy devices for emerging technologies and applications, compatible with roll-to-roll large area manufacturing methods. - Supervisor of: 9 Postdocs, 5 Ph.D. students, 10 M.Sc students and 40 B.Eng students

***Consultant Engineer in the field of Photovoltaics and Solar Thermal*** (Jun 2006 – 2009)

**Engineering and consultancy services in the field of photovoltaic power plants.**

Solar potential site evaluation, preparation and issuance of production, grid connection, environmental and installation licenses. (Issuance of Production licenses for 67,57 MWp)

Engineering services and implementation studies of PV plants

Technical due diligence analysis of PV projects

**Engineering and consultancy services in the field of solar thermal power plants.**

Feasibility Study of Solar Thermal Parks

Environmental study of Solar Thermal Parks

Measurements and analysis of direct normal irradiance.

***Director of the Electronics Laboratory, Electrical Engineering Dept, TEI of Crete, Greece (Jun 2010-today)***

***Member of Technical Advisory Board, Enecsys Ltd, Cambridge, UK (Jan 2006- Dec 2008)***

Design, fabrication and marketing of micro-inverter systems architecture using one DC to AC converter with comprehensive monitoring to the level of individual modules.

***Visiting Research Associate, Department of Engineering, Cambridge University (Nov 2004 – 2010)***

Center of Advanced Electronics & Photonics

***Soldier in the Greek Army, Telecommunications Division (Aug 2003 - Aug 2004)***

***Teaching Assistant, Department of Engineering, Cambridge University (Oct 2000 – Feb 2003)***

Assisted in instruction of the undergraduate laboratory course in Electrical Engineering

## **6. PROFESSIONAL AFFILIATIONS**

Chartered Electrical Engineer in Greece

IEEE, Institute of Electrical and Electronics Engineers

IET, Institution of Engineering and Technology

MRS, Materials Research Society

ACS, American Chemical Society

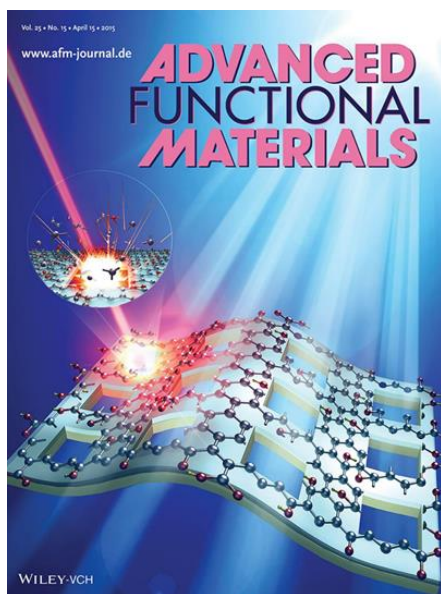
Technical Chamber of Greece (Member of New Technologies Committee)

Regular evaluator for: European Commission FP7 (Organic Large Area Electronics 2007, 2009, 2011); Marie Curie Actions; Department of Energy, U.S.A.; National Science Foundation, U.S.A.; ACS Petroleum Research Fund; Research Promotion Foundation of Cyprus; General Secretariat for Research and Technology, Greece, Research Council of Canada.

Regular referee for: Advanced Materials, Advanced Functional Materials, Advanced Energy Materials, ACS Nano, Langmuir, Applied Physics Letters; Organic Electronics; Carbon; Journal of Applied Physics; Journal of Physical Chemistry, Synthetic Metals; Progress in Photovoltaics; Organic Electronics; Solar Energy Materials & Solar Cells; Nanotechnology; IEEE Nanotechnology, etc.

## 7. PUBLISHED WORK

### 7.1 COVERS

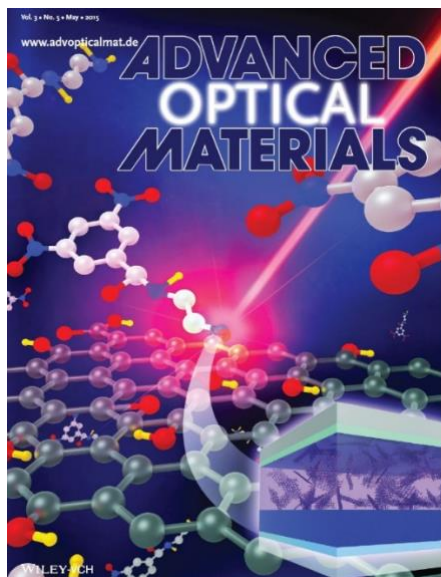


#### 1. Inside Front Cover

Reduced Graphene Oxide Micromesh Electrodes for Large Area, Flexible, Organic Photovoltaic Devices (Adv.Funct.Mater. 25,15, page 2206)

APR 2015 | DOI: 10.1002/adfm.201570101

A facile, one step, roll-to-roll compatible laser patterning technique to improve and simultaneously tune the optoelectronic properties of graphene based transparent conductive electrodes (TCE) is demonstrated by E. Stratakis, E. Kymakis, and colleagues on page 2213. In order to overcome the trade-off between the sheet resistance and transparency, reduced graphene oxide micromeshes are laser-patterned on plastic substrate and incorporated in flexible organic photovoltaic devices as the TCE.

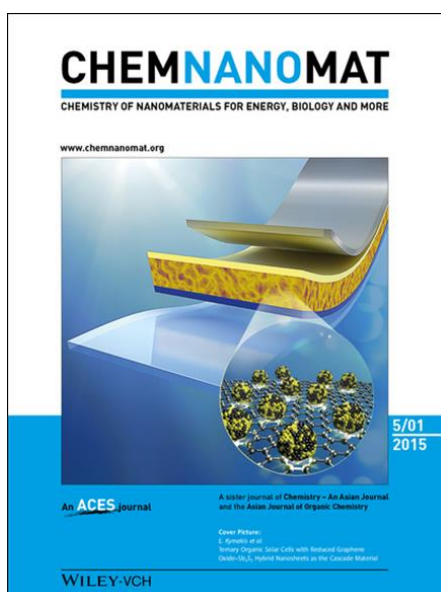


#### 2. Inside Front Cover

Photochemical Synthesis of Solution-Processable Graphene Derivatives (Adv. Optical Mater. 3, 5, page 596)

MAY 2015 | DOI: 10.1002/adom.201570027

The artwork represents the photochemical reaction for the synthesis of a graphene-based electron-accepting derivative. Ethylene-dinitro-benzoyl small molecules are shown in the vicinity of a graphene oxide nanosheet, one of which is preferentially bonded to the graphene oxide lattice under the photochemical action of a laser beam. On page 658, E. Kymakis, E. Stratakis, and co-workers use this photochemical synthetic route to create graphene-based electron acceptors with tunable bandgaps for organic solar cells.



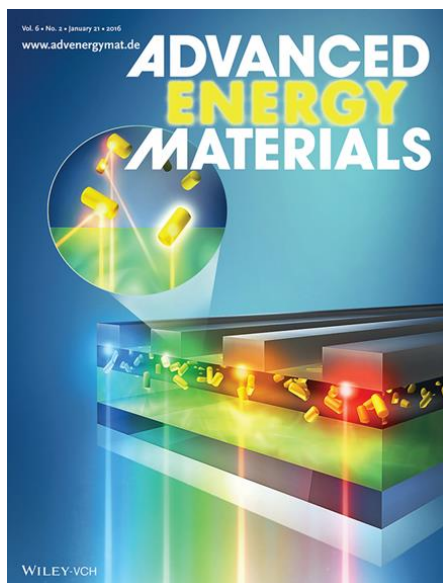
#### 3. Back Cover

Ternary Organic Solar Cells with Reduced Graphene Oxide–Sb<sub>2</sub>S<sub>3</sub> Hybrid Nanosheets as the Cascade Material (ChemNanoMat 1,5, page 364)

SEP 2015 | DOI: 10.1002/cnma.201500117

The Back Cover illustrates the use of reduced graphene oxide-antimony sulfide (rGO-Sb<sub>2</sub>S<sub>3</sub>) hybrid nanosheets as the cascade material in ternary organic solar cells. Their utilization in PCDTBT:PC71BM blend leads to power conversion efficiency of 6.81%; a value 23% higher than the efficiency of the binary devices. The results demonstrate that the exploitation of on-demand functionalized graphene derivatives as electron cascade materials is a promising way towards improving the performance of organic photovoltaics. More details can be found in the Full Paper by E. Kymakis et al. on page 346 in Issue 5, 2015

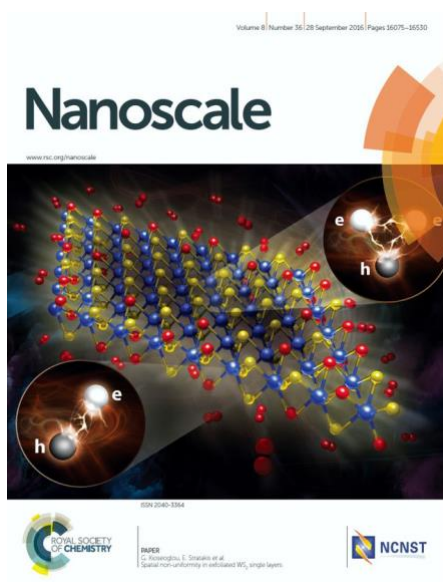




#### 4. Back Cover

Plasmonic Backscattering Effect in High Efficient Organic Photovoltaic Devices (Adv. Energy Mater 6,2 2016)  
 JAN 2015 | DOI: 10.1002/aenm.201670013

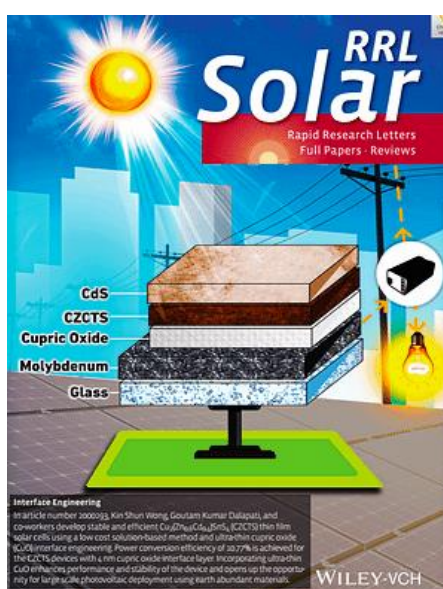
A new light trapping architecture to enhance the power conversion efficiency of organic photovoltaics is proposed and implemented. In article number 1501640, Emmanuel Kymakis and co-workers demonstrate that the incorporation of gold nanorods inside the rear buffer layer, leads to the redistribution of photons inside the active medium mainly through efficient light back-scattering, simultaneously increasing the exciton generation and charge collection.



#### 5. Front cover

Spatial non-uniformity in exfoliated WS<sub>2</sub> single layers (Nanoscale, 2016,8, 16075-16076)  
 SEP 2016 | DOI: 10.1039/C6NR90196D

Extraordinary spatial non-uniformity of the photoluminescence (PL) and strain properties of exfoliated WS<sub>2</sub> monolayers. PL enhancement of the outer regions is attributed to the pronounced oxygen chemisorption and physisorption.



#### 6. Frontispiece

Solution-Processed Pure Sulfide Cu<sub>2</sub>(Zn<sub>0.6</sub>Cd<sub>0.4</sub>)SnS<sub>4</sub> Solar Cells with Efficiency 10.8% Using Ultrathin CuO Intermediate Layer (Solar RRL 2020,4,9, 2070096 )  
 SEP 2020 | DOI: 10.1002/solr.202070096

Development of stable and efficient Cu<sub>2</sub>(Zn<sub>0.6</sub>Cd<sub>0.4</sub>)SnS<sub>4</sub> (CZCTS) thin film solar cells using a low cost solution-based method and ultra-thin cupric oxide (CuO) interface engineering. Power conversion efficiency of 10.77% is achieved for the CZCTS devices with 4 nm cupric oxide interface layer. Incorporating ultra-thin CuO enhances performance and stability of the device and opens up the opportunity for large scale photovoltaic deployment using earth abundant materials.

## **7.2. PUBLICATIONS IN REFEREED JOURNALS**

1. **Kymakis, E.\***, Amaratunga, G.A.J. Single-wall carbon nanotube/conjugated polymer photovoltaic devices (2002) *Applied Physics Letters*, 80 (1), pp. 112-114.<sup>i</sup> [DOI:10.1063/1.1428416](https://doi.org/10.1063/1.1428416)
2. Alexandrou, I., **Kymakis, E.**, Amaratunga, G.A.J. Polymer-nanotube composites: Burying nanotubes improves their field emission properties (2002) *Applied Physics Letters*, 80 (8), pp. 1435-1437. [DOI:10.1063/1.1449537](https://doi.org/10.1063/1.1449537)
3. **Kymakis, E.\***, Alexandrou, I., Amaratunga, G.A.J. Single-walled carbon nanotube-polymer composites: Electrical, optical and structural investigation (2002) *Synthetic Metals*, 127 (1-3), pp. 59-62.<sup>ii</sup> [DOI:10.1016/S0379-6779\(01\)00592-6](https://doi.org/10.1016/S0379-6779(01)00592-6)
4. **Kymakis, E.\***, Alexandrou, I., Amaratunga, G.A.J. High open-circuit voltage photovoltaic devices from carbon-nanotube-polymer composites (2003) *Journal of Applied Physics*, 93 (3), pp. 1764-1768. [DOI:10.1063/1.1535231](https://doi.org/10.1063/1.1535231)
5. **Kymakis, E.\***, Amaratunga, G.A.J. Photovoltaic cells based on dye-sensitisation of single-wall carbon nanotubes in a polymer matrix (2003) *Solar Energy Materials and Solar Cells*, 80 (4), pp. 465-472. <sup>iii</sup> [DOI:10.1016/j.solmat.2003.08.013](https://doi.org/10.1016/j.solmat.2003.08.013)
6. **Kymakis, E.\***, Amaratunga, G.A.J. Optical properties of polymer-nanotube composites (2004) *Synthetic Metals*, 142 (1-3), pp. 161-167. <sup>iv</sup> [DOI:10.1016/j.synthmet.2003.08.011](https://doi.org/10.1016/j.synthmet.2003.08.011)
7. Bhattacharyya, S., **Kymakis, E.**, Amaratunga, G.A.J. Photovoltaic properties of dye functionalized single-wall carbon nanotube/conjugated polymer devices (2004) *Chemistry of Materials*, 16 (23), pp. 4819-4823. [DOI:10.1021/cm0496063](https://doi.org/10.1021/cm0496063)
8. **Kymakis, E.\***, Amaratunga, G.A.J. Carbon nanotubes as electron acceptors in polymeric photovoltaics (2005) *Reviews on Advanced Materials Science*, 10 (4), pp. 300-305.
9. **Kymakis, E.\***, Koudoumas, E., Franghiadakis, I., Amaratunga, G.A.J. Post-fabrication annealing effects in polymer-nanotube photovoltaic cells (2006) *Journal of Physics D: Applied Physics*, 39 (6), art. no. 010, pp. 1058-1062. [DOI:10.1088/0022-3727/39/6/010](https://doi.org/10.1088/0022-3727/39/6/010)
10. **Kymakis, E.\***, Amaratunga, G.A.J. Electrical properties of single-wall carbon nanotube-polymer composite films (2006) *Journal of Applied Physics*, 99 (8), art. no. 084302.<sup>v</sup> [DOI:10.1063/1.2189931](https://doi.org/10.1063/1.2189931)
11. **Kymakis, E.\***, Koudoumas, E., Franghiadakis, I. Bi-layer photovoltaic devices with PPQ as the electron acceptor layer (2006) *Solar Energy Materials and Solar Cells*, 90 (12), pp. 1705-1714. [DOI:10.1016/j.solmat.2005.09.006](https://doi.org/10.1016/j.solmat.2005.09.006)
12. **Kymakis, E.\***, Klapsis, G., Koudoumas, E., Stratakis, E., Kornilios, N., Vidakis, N., Franghiadakis, Y. Carbon nanotube/PEDOT:PSS electrodes for organic photovoltaics (2006) *EPJ Applied Physics*, 36 (3), pp. 257-259. [DOI:10.1051/epjap:2006148](https://doi.org/10.1051/epjap:2006148)
13. Vaddiraju, S., Mathai, M., **Kymakis, E.**, Papadimitrakopoulos, F. Radical salt-doped hole transporters in organic photovoltaic devices (2007) *Chemistry of Materials*, 19 (16), pp. 4049-4055. [DOI:10.1021/cm070744c](https://doi.org/10.1021/cm070744c)
14. **Kymakis, E.\***, Stratakis, E., Koudoumas, E. Integration of carbon nanotubes as hole transport electrode in polymer/fullerene bulk heterojunction solar cells (2007) *Thin Solid Films*, 515, pp. 8598-8600.<sup>vi</sup> [DOI:10.1016/j.tsf.2007.03.173](https://doi.org/10.1016/j.tsf.2007.03.173)
15. Vernardou, D., Kenanakis, G., Couris, S., Koudoumas, E., **Kymakis, E.**, Katsarakis, N. pH effect on the morphology of ZnO nanostructures grown with aqueous chemical growth (2007) *Thin Solid Films*, 515, pp. 8764-8767. [DOI:10.1016/j.tsf.2007.03.108](https://doi.org/10.1016/j.tsf.2007.03.108)
16. **Kymakis, E.\***, Servati, P., Tzanetakakis, P., Koudoumas, E., Kornilios, N., Rompogiannakis, I., Franghiadakis, Y., Amaratunga, G.A.J. Effective mobility and photocurrent in carbon nanotube-polymer composite photovoltaic cells (2007) *Nanotechnology*, 18 (43), art. no. 435702. [DOI:10.1088/0957-4484/18/43/435702](https://doi.org/10.1088/0957-4484/18/43/435702)
17. **Kymakis, E.\***, Kornilios, N., Koudoumas, E. Carbon nanotube doping of P3HT:PCBM photovoltaic devices (2008) *Journal of Physics D: Applied Physics*, 41 (16), art. no. 165110 [DOI:10.1088/0022-3727/41/16/165110](https://doi.org/10.1088/0022-3727/41/16/165110)

\* Asterisks denote the corresponding author

<sup>i</sup> Virtual Journal of Nanoscale Science and Technology, 5, 2 (2002).

<sup>ii</sup> Sciencedirect Top 25 Hottest Articles, July - September 2008

<sup>iii</sup> Fuel and Energy Abstracts, 45, 6, 382, (2004)

<sup>iv</sup> Sciencedirect Top 25 Hottest Articles, July - September 2004

<sup>v</sup> Virtual Journal of Nanoscale Science and Technology, 13, 17 (2006).

<sup>vi</sup> Sciencedirect Top 25 Hottest Articles, October - December 2007 & January - March 2008

18. Stratakis, E., **Kymakis, E.**, Spanakis, E., Tzanetakos, P., Koudoumas, E. Polymer-nanotube composite mats with improved field emission performance and stability (2009) *Physical Chemistry Chemical Physics*, 11 (4), pp. 703-709. [DOI:10.1039/b813198h](https://doi.org/10.1039/b813198h)
19. **Kymakis, E.\***, Kalykakis, S., Papazoglou, T.M. Performance analysis of a grid connected photovoltaic park on the island of Crete (2009) *Energy Conversion and Management*, 50 (3), pp. 433-438. [DOI: 10.1016/j.enconman.2008.12.009](https://doi.org/10.1016/j.enconman.2008.12.009)
20. Vernardou, D., Vlachou, K., Spanakis, E., Stratakis, E., Katsarakis, N., **Kymakis, E.**, Koudoumas, E. Influence of solution chemistry on the properties of hydrothermally grown TiO<sub>2</sub> for advanced applications (2009) *Catalysis Today*, 144 (1-2), pp. 172-176. [DOI: 10.1016/j.cattod.2009.02.009](https://doi.org/10.1016/j.cattod.2009.02.009)
21. Stylianakis, M.M., Mikroyannidis, J.A., **Kymakis, E.\*** A facile, covalent modification of single-wall carbon nanotubes by thiophene for use in organic photovoltaic cells (2010) *Solar Energy Materials and Solar Cells*, 94 (2), pp. 267-274. [DOI: 10.1016/j.solmat.2009.09.013](https://doi.org/10.1016/j.solmat.2009.09.013)
22. Stratakis, E., Giorgi, R., Barberoglou, M., Dikonimos, Th., Salernitano, E., Lisi, N., **Kymakis, E.** Three-dimensional carbon nanowall field emission arrays (2010) *Applied Physics Letters*, 96 (4), art. no. 043110.vii [DOI:10.1063/1.3298648](https://doi.org/10.1063/1.3298648)
23. **Kymakis, E.\***, Stratakis, E., Koudoumas, E., Fotakis, C. Plasmonic organic photovoltaic devices on transparent carbon nanotube films (2011) *IEEE Transactions on Electron Devices*, 58 (3), art. no. 5701662, pp. 860-864. [DOI:10.1109/TED.2010.2102630](https://doi.org/10.1109/TED.2010.2102630)
24. Spyropoulos, G.D., Stylianakis, M., Stratakis, E., **Kymakis, E.\*** Plasmonic organic photovoltaics doped with metal nanoparticles (2011) *Photonics and Nanostructures - Fundamentals and Applications*, 9 (2), pp. 184-189.viii [DOI:10.1016/j.photonics.2010.09.001](https://doi.org/10.1016/j.photonics.2010.09.001)
25. Paci, B., Spyropoulos, G.D., Generosi, A., Bailo, D., Albertini, V.R., Stratakis, E., **Kymakis, E.** Enhanced structural stability and performance durability of bulk heterojunction photovoltaic devices incorporating metallic nanoparticles (2011) *Advanced Functional Materials*, 21 (18), pp. 3573-3582. [DOI:10.1002/adfm.201101047](https://doi.org/10.1002/adfm.201101047)
26. **Kymakis, E.\***, Stratakis, E., Stylianakis, M.M., Koudoumas, E., Fotakis, C. Spin coated graphene films as the transparent electrode in organic photovoltaic device (2011) *Thin Solid Films*, 520 (4), pp. 1238-1241. [DOI:10.1016/j.tsf.2011.04.208](https://doi.org/10.1016/j.tsf.2011.04.208)
27. **Kymakis, E.\***, Stylianakis, M.M., Spyropoulos, G.D., Stratakis, E., Koudoumas, E., Fotakis, C. Spin coated carbon nanotubes as the hole transport layer in organic photovoltaics (2012) *Solar Energy Materials and Solar Cells*, 96 (1), pp. 298-301. [DOI:10.1016/j.solmat.2011.09.046](https://doi.org/10.1016/j.solmat.2011.09.046)
28. Stylianakis, M.M., **Kymakis, E.\*** Efficiency enhancement of organic photovoltaics by addition of carbon nanotubes into both active and hole transport layer (2012) *Applied Physics Letters*, 100 (9), art. no. 093301.ix [DOI:10.1063/1.3690056](https://doi.org/10.1063/1.3690056)
29. Spyropoulos, G.D., Stylianakis, M.M., Stratakis, E., **Kymakis, E.\*** Organic bulk heterojunction photovoltaic devices with surfactant-free Au nanoparticles embedded in the active layer (2012) *Applied Physics Letters*, 100 (21), art. no. 213904. [DOI:10.1063/1.4720510](https://doi.org/10.1063/1.4720510)
30. Stratakis, E., Eda, G., Yamaguchi, H., **Kymakis, E.**, Fotakis, C., Chhowalla, M. Free-standing graphene on microstructured silicon vertices for enhanced field emission properties (2012) *Nanoscale*, 4 (10), pp. 3069-3074. [DOI:10.1039/c2nr32799f](https://doi.org/10.1039/c2nr32799f)
31. Stylianakis, M.M., Stratakis, E., Koudoumas, E., **Kymakis, E.\***, Anastasiadis, S.H. Organic bulk heterojunction photovoltaic devices based on polythiophene-graphene composites (2012) *ACS Applied Materials and Interfaces*, 4 (9), pp. 4864-4870. [DOI:10.1021/am301204g](https://doi.org/10.1021/am301204g)
32. Stylianakis, M.M., Spyropoulos, G.D., Stratakis, E., **Kymakis, E.\*** Solution-processable graphene linked to 3,5-dinitrobenzoyl as an electron acceptor in organic bulk heterojunction photovoltaic devices (2012) *Carbon*, 50 (15), pp. 5554-5561. [DOI:10.1016/j.carbon.2012.08.001](https://doi.org/10.1016/j.carbon.2012.08.001)
33. Paci, B., Generosi, A., Albertini, V.R., Spyropoulos, G.D., Stratakis, E., **Kymakis, E.** Enhancement of photo/thermal stability of organic bulk heterojunction photovoltaic devices via gold nanoparticles doping of the active layer (2012) *Nanoscale*, 4 (23), pp. 7452-7459. [DOI:10.1039/c2nr32799f](https://doi.org/10.1039/c2nr32799f)
34. Petridis, C., Lin, Y.-H., Savva, K., Eda, G., **Kymakis, E.**, Anthopoulos, T.D., Stratakis, E. Post-fabrication, in situ laser reduction of graphene oxide devices (2013) *Applied Physics Letters*, 102 (9), art. no. 093115. [DOI:10.1063/1.4794901](https://doi.org/10.1063/1.4794901)

vii Virtual Journal of Nanoscale Science and Technology, 21, 6 (2010).

viii ScienDirect Top 25 Hottest Articles, July - September 2011 [1<sup>st</sup>], Jan - Dec 2011 [2<sup>nd</sup>]

ix Virtual Journal of Nanoscale Science and Technology, 25, 11 (2012)



35. Stratakis, E., **Kymakis, E.**\* Nanoparticle-based plasmonic organic photovoltaic devices (2013) *Materials Today*, 16 (4), pp. 133-146.<sup>x</sup> [DOI:10.1016/j.mattod.2013.04.006](https://doi.org/10.1016/j.mattod.2013.04.006)
36. Stratakis, E., Stylianakis, M.M., Koudoumas, E., **Kymakis, E.**\* Plasmonic organic photovoltaic devices with graphene based buffer layers for stability and efficiency enhancement (2013) *Nanoscale*, 5 (10), pp. 4144-4150. [DOI:10.1039/c3nr00656e](https://doi.org/10.1039/c3nr00656e)
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117. J. Huang, S. Huang, Y. Zhao, B. Feng, K. Jiang, S. Sun, C. Ke, **E. Kymakis**, X. Zhuang, Azulene-Based Molecules, Polymers, and Frameworks for Optoelectronic and Energy Applications, *Small methods* (2020) 4, 10, 2000628 [DOI:10.1002/smt.202000628](https://doi.org/10.1002/smt.202000628)
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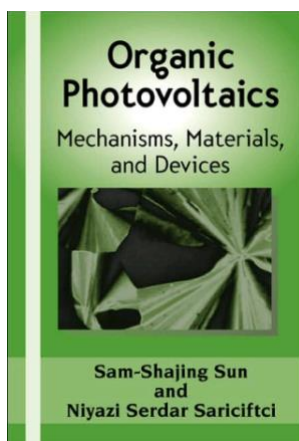


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121. K. T. Yu, Y. Wang, K. Jiang, G. Zhai, C. Ke, J. Zhang, J. Li, D. Tranca, **E. Kymakis**, X. Zhuang, Catechol-coordinated framework film-based micro-supercapacitors with AC line filtering performance, *Chemistry - A European journal*, 2021, DOI:[10.1002/chem.202100171](https://doi.org/10.1002/chem.202100171)
122. Z. Ouyang, D. Tranca, Y. Zhao, Z. Chen, X. Fu, J. Zhu, G. Zhai, C. Ke, **E. Kymakis**, X. Zhuang, Quinone-Enriched Conjugated Microporous Polymer as an Organic Cathode for Li-Ion Batteries, *ACS Applied Materials & Interfaces*, 2021, 13, 7, 9064–9073 [DOI:10.1021/acsami.1c00867](https://doi.org/10.1021/acsami.1c00867)
123. P. Jiang, K. Jiang, D. Tranca, J. Zhu, F. Qiu, C. Ke, C. Lu, **E. Kymakis**, X. Zhuang Rational Control of Topological Defects in Porous Carbon for High-Efficiency Carbon Dioxide Conversion, *Advanced Materials Interfaces*, 2021, 2100051 [DOI:10.1002/admi.202100051](https://doi.org/10.1002/admi.202100051)
124. L.A. Castriotta, F. Matteocci, L. Vesce, L. Cinà, A. Agresti, S. Pescetelli, A. Ronconi, M. Löffler, M. Stylianakis, F. Di Giacomo, P. Mariani, M. Stefanelli, E.M. Speller, A. Alfano, B. Paci, A. Generosi, F. Di Fonzo, A. Petrozza, B. Rellinghaus, **E. Kymakis**, A. Di Carlo, Air-Processed Infrared-Annealed Printed Methylammonium-Free Perovskite Solar Cells and Modules Incorporating Potassium-Doped Graphene Oxide as an Interlayer, *ACS Applied Materials and Interfaces*, 2021, 13, 10, 11741–11754 [DOI:10.1021/acsami.0c18920](https://doi.org/10.1021/acsami.0c18920)

### **7.3. MONOGRAPHS**

*E. Kymakis “The Impact of Carbon Nanotubes on Solar Energy Conversion” Nanotechnology Law & Business, 3,4 , 405-410 (2006)<sup>xv</sup>.*

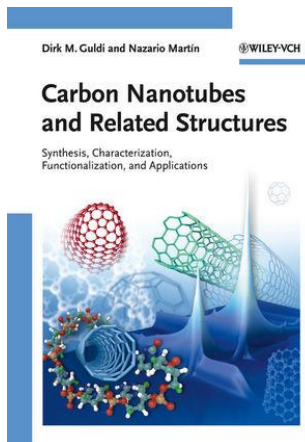
### **7.4. INVITED CHAPTERS IN BOOKS**



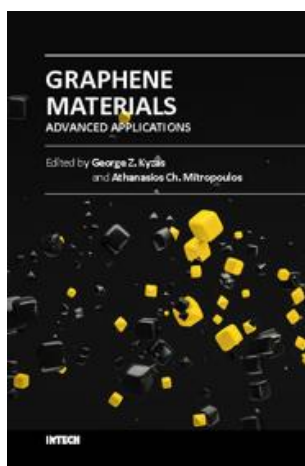
1. E. Kymakis and G.A.J. Amaratunga “Solar Cells Based on Composites of Donor Conjugated Polymers and Carbon Nanotubes “ in “Organic Photovoltaics: Mechanism, Materials, and Devices”, Editors S.Sun and N.S Sariciftci. Dekker/CRC Press, US. ISBN: 082475963X (2005).

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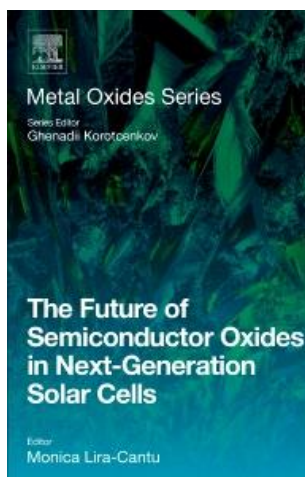
<sup>xv</sup> Invited contribution.



2. E. Kymakis “Photovoltaic Devices Based on Carbon Nanotubes and Related Structures” in “Carbon Nanotubes & Related Structures”, Editors D. Guldi and N. Martin Wiley – VCH, ISBN: 978-3-527-32406-4 (2009)



3. M. Stylianakis, D. Konios, C. Petridis, E. Kymakis “Solution-Processed Graphene-Based Transparent Conductive Electrodes as Ideal ITO Alternatives for Organic Solar Cells” in “Graphene Materials - Advanced Applications”, Editors G Kyzas, A. Mitropoulos, InTech ISBN 978-953-51-3142-7, Print ISBN 978-953-51-3141-0 (2017)



4. D. Konios, E. Kymakis “Graphene Oxide like materials in organic and perovskite solar cells” in “The Future of Semiconductor Oxides in Next-Generation Solar Cells”, Editor M. Lira-Cantu, Elsevier ISBN 9780128111659 (2017)

## 7.5. PUBLICATIONS IN REFEREED CONFERENCE PROCEEDINGS

1. **Kymakis, E.**, Amaratunga, G.A.J., Alexandrou, I., Chhowalla, M., Milne, W.I. Photovoltaic response in poly(3-octylthiophene) based metal-semiconductor-metal diodes. (2001) *Proceedings of SPIE - The International Society for Optical Engineering*, 4108, pp. 112-116.
2. Vohra A., Flewitt A.J., **Kymakis E.**, Chhowalla M., Vardoulakis G., Amaratunga G.A.J., Milne W.I. Tetrahedrally bonded Amorphous Carbon/a-Si:H Heterojunction Solar Cells, (2001) *Proceedings of the 16th European Photovoltaics Conference*, 1, pp.526-528
3. **Kymakis E.**, Bhattacharyya S., Amaratunga G.A.J. Photovoltaic cells based on dye functionalized single-wall carbon nanotubes (2005) *POLY Division Preprints*, 46 (1), pp. 213-214
4. Vaddiraju, S., Mathai, M., **Kymakis, E.**, Papadimitrakopoulos, F. Efficient photovoltaic devices based on blends of C60 and radical salt doped hole transporters (2007) *Proceedings of SPIE - The International Society for Optical Engineering*, 6656, art. no. 66561B.

5. **Kymakis, E.**, Koudoumas, E. P3HT/PCBM/SWNTs photovoltaic devices (2008) *Proceedings of SPIE - The International Society for Optical Engineering*, 6999, art. no. 69991N.
6. Spanou E., Kyprianou A., Georgiou G.E., Vernardou D., Kenanakis G., **Kymakis E.**, Katsarakis N., Koudoumas E. Metal oxide nanostructures for use inorganic photovoltaic cells (2008) *Proc. of Conference on Deregulated Electricity Market Issues in South-Eastern Europe*
7. Stratakis, E., Stylianakis, M.M., Savva, K., Fotakis, C., **Kymakis, E.** Pulsed laser generation of novel nanomaterials for organic electronics (2013) *Optics InfoBase Conference Papers*.
8. Stylianakis M.M., Stratakis E., Kymakis E., Chemical and Photochemical functionalization of graphene oxide and its use in organic photovoltaic applications (2013) *Proceedings of the 9th Panhellenic Scientific Chemical Engineering Congress*.
9. Savva, K., Kakavelakis, G., Sigletou, M., Konios, D., Paradissanos, I., Stylianakis, M.M., Petridis, C., Kioseoglou, G., Fotakis, C., **Kymakis, E.**, Stratakis, E. Pulsed laser processing of graphene and related two-dimensional materials (2014) *Optics InfoBase Conference Papers*, 1 p.
10. Paci, B., Generosi, A., Stratakis, E., **Kymakis, E.** Stability enhancement in OPV: In-situ studies of plasmonic devices (2017) *Proceedings of the World Congress on New Technologies*, 2 p.
11. Paradissanos, I., Germanis, S., Pliatsikas, N., Pelekanos, N.T., Patsalas, P., Fotakis, C., **Kymakis, E.**, Kioseoglou, G., Stratakis, E. Spatial nonuniformity of excitonic properties in exfoliated WS<sub>2</sub> monolayers (2017) *Optics InfoBase Conference Papers*, Part F81-EQEC 2017, 1 p.
12. Petridis, K., **Kymakis, E.**, Stratakis, E. Advanced laser processes for photovoltaic energy production (2017) *Proceedings - 2016 3<sup>rd</sup> International Conference on Mathematics and Computers in Sciences and in Industry, MCSI 2016*, art. no. 7815112, pp. 1-6.
13. Savva, K., Kakavelakis, G., Sigletou, M., Konios, D., Paradissanos, I., Stylianakis, M.M., Petridis, C., Kioseoglou, G., Fotakis, C., **Kymakis, E.**, Stratakis, E. Pulsed laser processing of graphene and related two-dimensional materials (2019) *Proceedings 2015 European Conference on Lasers and Electro-Optics - European Quantum Electronics Conference, CLEO/Europe-EQEC 2015*.

## **8. CONFERENCE/SEMINARS PRESENTATIONS**

### **8.1. INVITED TALKS**

1. “*Photovoltaic Devices Based on Dye-Functionalized Carbon Nanotubes*” 229<sup>th</sup> American Chemical Society Annual Meeting, San Diego, USA, March 2005
2. “*Solar cells based on conjugated polymer / single wall carbon nanotube bulk heterojunctions*” European Workshop on Carbon Nanotubes: Present and Future, Amalfi, Italy, May 2002.
3. “*Organic Electronics Processing and Manufacturing*” 1st Erasmus Intensive Programme: Org. Electronics and Applications, Chania, Crete, Jul 2010
4. “*Carbon nanotubes and graphene based Photovoltaics*” 2<sup>nd</sup> Erasmus Intensive Programme: Org. Electronics and Applications, Chania, Crete, Jul 2011
5. “*Organic Photovoltaic Devices*”, 1st International Conference on Bioinspired Materials for Solar Energy Utilization, Chania, Greece, Sep 2011
6. “*Engineering plasmonic nanostructures for applications in OPVs*, Conference and Workshop on Nanostructured Ceramics and other Nanomaterials (ICWNCN), Delhi, India, Mar 2012
7. “*Carbon nanotubes and graphene based Photovoltaics*” 3<sup>rd</sup> Erasmus Intensive Programme: Org. Electronics and Applications, Chania, Crete, Jul 2012
8. “*Organic Photovoltaics*” Erasmus Intensive Programme: Bioinspired Materials for Solar Energy Utilization, Heraklion, Crete, Jul 2012
9. “*Solution Processable Graphene Derivatives in Organic Photovoltaics*” 9<sup>th</sup> International Conference on Nanosciences & Nanotechnologies, Thessaloniki, Greece, July 2012
10. “*Combining organic photovoltaics with metal nanoparticles*, Inter-Continental Advanced Materials & Photonics – NANOPV Workshop, Boulder, USA, Aug 2012
11. “*Solution processed graphene and noble nanoparticles for organic photovoltaics*” XI International Conference on Nanostructured Materials, Rhodes, Greece, Aug 2012



12. “*Application of graphene in optoelectronics*”, Summer School on Graphene: Properties and Applications, Patra, Greece, Jun 2013.
13. “*OPV devices: fabrication and characterization*”, Erasmus Intensive Programme: Bioinspired Materials for Solar Energy Utilization, Heraklion, Greece, Jul 2013
14. “*Polymer Solar Cells: Materials, processes, challenges*”, Erasmus Intensive Programme: Transparent Electronics: From Materials & Devices to Devices & Systems, Chania, Greece, Jul 2013.
15. “*Pulsed Laser Generation of Novel Nanomaterials for Organic Electronics*”, 6th International Symposium on Flexible Organic Electronics, Thessaloniki, Greece, Jul 2013
16. “*Solution processable graphene-based materials for organic photovoltaic devices*”, EMN Fall Meeting (Energy Materials Nanotechnology) Orlando, USA, Dec 2013
17. “*Current progress in organic PV materials and devices*”, Industrial Technologies 2014, WS21, Athens, Greece, Apr 2014.
18. “*Solution processable graphene in organic photovoltaic cells*”, Israel-Greece Joint Meeting on Nanotechnology & Bionanoscience, Rehovot Israel, Oct 2014
19. “*Organic Photovoltaics*”, Graphene Connect – Energy Applications, Dresden, Oct 2014
20. “*Graphene-based materials for organic photovoltaic devices*”, E-MRS Spring Meeting, Lille, May 2015
21. “*Solution processable graphene derivatives and related 2D crystals for high efficient organic and perovskite solar cells*”, 12th International Conference on Nanosciences & Nanotechnologies Thessaloniki, Jul 2015.
22. “*Organic Photovoltaics Engineering: Plasmonic Nanoparticles and Graphene based materials for enhanced performance and stability*” 9<sup>th</sup> International School on Hybrid and Organic Photovoltaics, Tuscany Italy, Sep 2015.
23. “*Graphene and other 2D materials for organic and hybrid solar cells*” Symposium on Current trends and perspectives in organic materials and processes for high performance organic electronic applications, Athens Greece, May 2016
24. “*Graphene related materials in organic and inverted perovskite solar cells*” 13th International Conference on Nanosciences & Nanotechnologies, Thessaloniki, Jul 2016.
25. “*Graphene and other 2D-based materials for high efficient, stable organic and perovskite solar cells*” 2nd EU-Korea workshop on graphene and 2D materials, Copenhagen, Aug 2016.
26. “*Graphene and other 2D-based materials for organic and hybrid solar cells*”, XXXII Panhellenic Conference on Solid State Physics & Materials Science, Ioannina, Sep 2016
27. “*Graphene and transition metal dichalcogenide nanosheets as charge transport layers for organic and perovskite solar cells*” Israel - Greece Joint Meeting on Nanotechnology and BioNanoscience, Heraklion, Greece, Oct 2016
28. “*Efficient and highly air stable organic and perovskite solar cells with graphene and related 2D materials as the charge transport layers*”, 7<sup>th</sup> European conference in Graphene and 2D Materials (Graphene2017), Barcelona, Mar 2017.
29. “*Solution processable graphene-like 2D materials as building blocks in organic and perovskite solar cells*” 1st China-EU Graphene Flagship Workshop on Graphene and 2D Materials, Beijing, Jun 2017
30. “*2D materials interface engineering for efficient and stable organic and perovskite solar cells*” 1st European Conference on Chemistry of Two-Dimensional Materials (Chem2DMat), Strasbourg, Aug 2017
31. “*Graphene and other 2D related materials interface engineering for highly efficient and stable organic and perovskite solar cells*” 3<sup>rd</sup> EU-Korea workshop on graphene and 2D materials, Jeju island, Korea, Dec 2017.
32. “*Graphene related materials in perovskite solar cells*” International Graphene Innovation Conference (GRAPCHINA 2018), Xi’an, China, Sept 2018
33. “*Graphene and Related 2D Crystals for Photovoltaic Applications*” 12th International Conference on Physics of Advanced Materials (ICPAM-12), Heraklion, Greece, Sept 2018.
34. “*Graphene and related 2D materials interfacial and device engineering for perovskite cells and modules*”, Symposium on Application of Graphene and Related 2D Materials, Tokyo, Japan, Nov 2018
35. “*Graphene and related 2D materials interfacial and device engineering for perovskite photovoltaics*”, 3rd EU-Japan Workshop on Graphene and Related 2D Materials, Sendai, Japan, Nov 2018

36. “*Graphene and related 2D solution processed interfacial materials for efficient and stable perovskite solar cells*”, KAUST Research Conference: 3rd Generation photovoltaic technologies and beyond”, Saudi Arabia, Feb 2019.
37. “*Beneficial impact of 2D materials on the performance and stability of perovskite-based photovoltaics*”, International Graphene Innovation Conference (GRAPCHINA 2019), Xi’an, China, Sept 2019
38. “*Solution processed 2D materials for perovskite photovoltaics*” Translational Perovskite Research Council, Online, Jun 2020
39. “*2D interfacial engineering for perovskite PVs: from small devices to solar systems*”, 2nd School on Hybrid, Organic and Perovskite Photovoltaics (HOPE-PV20), Online, Nov 2020
40. “*Graphene-perovskite PVs from lab solar cells to solar farms*”, 2<sup>nd</sup> Workshop Innovative Materials for Energy, Online, Dec 2020
41. Trends in Nanotechnology International Conference (TNT2020), Tirana, Albania, Oct 2021.
42. 23rd International Conference on Photochemical Conversion and Storage of Solar Energy, Lausanne, Switzerland, Aug 2022.

## 8.2. INVITED SEMINARS

1. *Carbon Nanotube Based Photovoltaic Devices*, University of London, Queen Mary College, Physics Dept, Molecular and Materials Physics Group, UK May 2003.
2. *Can carbon nanotubes replace fullerenes in polymeric solar cells?* Department of Material Science & Engineering, Rutgers University, USA Mar 2005.
3. *Nanotube Based Polymer Photovoltaics*, Institute of Materials Science, University of Connecticut, USA Sep 2005.
4. *Organic Photovoltaics: Mechanisms, Materials and Devices*, Τμήμα Ηλεκτρολόγων Μηχ. & Μηχ. Υπολογιστών, Πανεπιστήμιο Κύπρου, Oct 2005.
5. *Smart Photovoltaic Applications*, Nicosia, Cyprus Jun 2008
6. *Integration of Photovoltaics in Buildings*, Workshop on regional clustering development in the construction sector, Heraklion Crete, Nov 2008
7. *Photovoltaics Technology Review*, Technical Chamber of Greece, East Crete Branch, Heraklion Crete, Jul 2009.
8. *Nanostructured Photovoltaics*, Center of Advanced Materials & Photonics, University of Cambridge, Jul 2010.
9. *Enhanced efficiency and stability in organic photovoltaic cells*, A day on solar energy utilization, Chemistry Department, University of Crete, Oct 2012.
10. *Organic Photovoltaics Engineering*, Department of Materials Science & Technology, University of Crete.
11. *Solution processable graphene and other 2D crystals in organic and perovskite solar cells*, Institute of Chemical Engineering Sciences, FORTH, Patras, October 2015
12. *Graphene and other 2D related materials interface engineering for highly efficient and stable organic and perovskite solar cells*, Istituto Italiano di Tecnologia, Genova, Nov 2017
13. *Efficient and stable perovskite solar cells and modules enabled by work function tunable graphene derivatives and related 2D materials*, Shaanxi Normal University, Xi’an, Oct 2019

## 8.3. CONTRIBUTED PRESENTATIONS

1. **E. Kymakis**, G.A.J. Amaratunga, W.I. Milne “*Photovoltaic response in poly (3-octylthiophene), poly (phenylquinoxaline) heterojunctions*” 45th SPIE Annual Meeting, San Diego, USA, August 2000.
2. **E. Kymakis**, G. Vardoulakis, A.J. Flewitt, G.A.J Amaratunga, W.I. Milne “*Tetrahedral amorphous carbon as the p layer of a hydrogenated amorphous silicon (a-Si:H) solar cell*” 11<sup>th</sup> European Conference on Diamond, Porto, Portugal, September 2000.
3. **E. Kymakis**, G.A.J. Amaratunga “*Carbon nanotube functionalization*” Chelsea Meeting on Amorphous & Organic Semiconductors, Cambridge, U.K, May 2001.

4. **E. Kymakis**, G.A.J. Amaratunga, W.I. Milne “*Single-Walled Carbon Nanotube-Polymer Composites: Electrical, optical, structural investigation and incorporation in photovoltaic devices.*” EMRS Spring Meeting Strasbourg, France, June 2001.
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23. **E. Kymakis** “*Incorporation of metallic nanoparticles into polymer/fullerene photovoltaic cells*”, 1<sup>st</sup> COINAPO Topical Meeting, Zaragoza, Spain, October 2010
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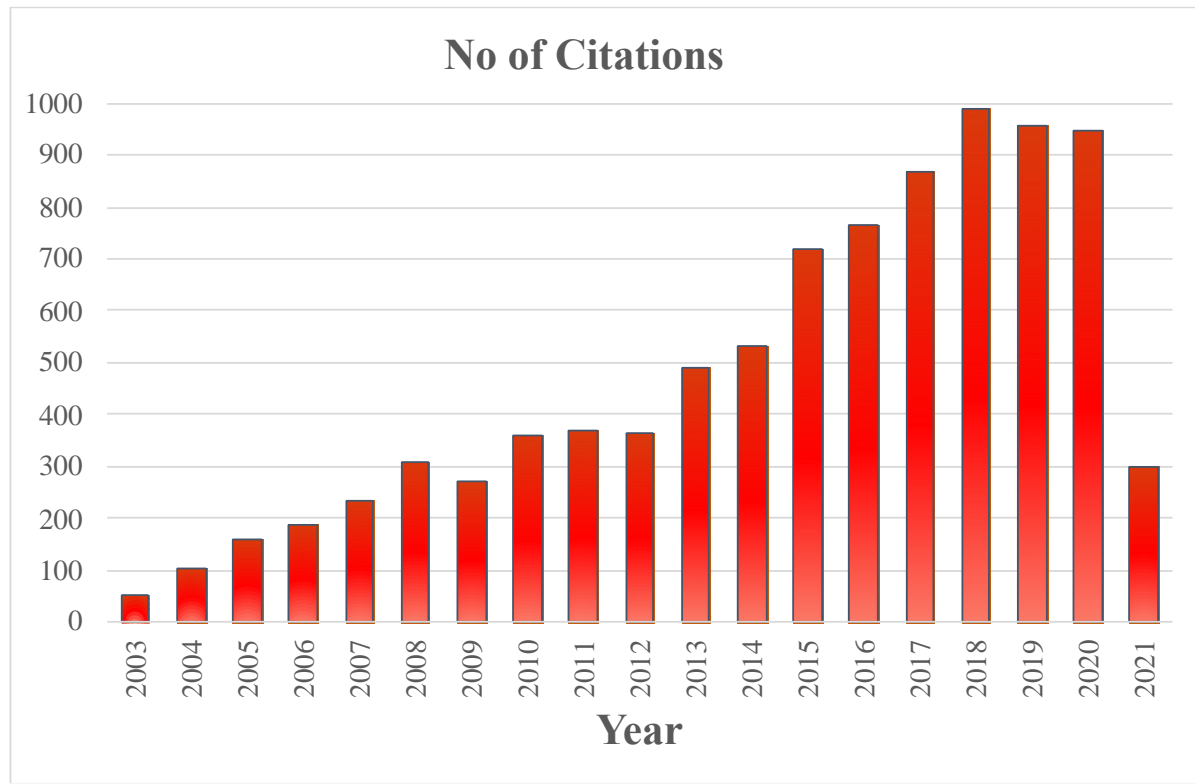
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51. E. Stratakis, M. Sigletou, C. Petridis, G. Kakavelakis, C. Fotakis, **E. Kymakis**, “*Enhanced stability of photoactive polymers blended with plasmonic nanoparticles*”, EMRS Spring Meeting, Lille France, May 2014.
52. G. Kakavelakis, D. Konios, E. Stratakis, E. Koudoumas, **E. Kymakis**, “*Plasmonic engineering for performance and stability enhancement of air processed organic photovoltaics*”, EMRS Spring Meeting, Lille France, May 2014
53. D. Konios, G. Kakavelakis, E. Stratakis, **E. Kymakis** “*Graphene-based buffer layers for improved Bulk Heterojunction Solar Cell*”, Graphene Week, Gotheburg, Jun 2014
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55. D. Konios, G. Viskadourous, M.M. Stylianakis, E. Stratakis, **E. Kymakis** “*The effect of different reduction methods in the Field Emission properties of Reduced Graphene Oxide Polymer composites*” 11<sup>th</sup> Conference on Nanosciences & Nanotechnologies, Thessaloniki, Greece, Jul 2014.
56. G. Kakavelakis, M. Krassas, N. Vaenas, E. Stratakis, **E. Kymakis**, *Plasmonic Organic Photovoltaic devices overcoming the critical barrier of 10% Power Conversion Efficiency*, International Conference on Hybrid and Organic Photovoltaics 2015, Rome, Italy, May 2015
57. G. Kakavelakis, C. Petridis, M. Krassas, K. Savva, E. Stratakis, **E. Kymakis**, *Performance and stability enhancement of organic photovoltaics incorporating plasmonic nanoparticles into the photoactive layer*, EMRS Spring Meeting, Lille France, May 2015
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60. G. Kakavelakis, E. Stratakis, **E. Kymakis**, *A Universal Strategy for efficiency enhancement of Organic Photovoltaic Devices via incorporation of Plasmonic metal Nanoparticles*, 8th International Symposium on Flexible Organic Electronics, Salonica, Jul 2015
61. G. Kakavelakis, C. Petridis, E. Stratakis, **E. Kymakis**, *High performance organic solar cells via the simultaneously incorporation of metallic nanospheres and nanorods*, Next Generation Organic Photovoltaics Conference II, Groningen, Jul 2015.
62. G. Kakavelakis, T. Maksudov, C. Petridis, **E. Kymakis**, *Extending the continuous operating lifetime of perovskite solar cells with graphene and related 2D materials*, Conference on the stability of emerging photovoltaics from fundamentals to applications (SEPV2018), Barcelona, Mar 2018.

## 9. CITATIONS METRICS

Citations : 9.074 (*Google Scholar*)

**h-index:** 49

	<u>All</u>	<u>From 2016</u>
<a href="#">Citations:</a>	9074	4834
<a href="#">h-index:</a>	49	39
<a href="#">i10-index:</a>	100	95



## 10. FUNDED RESEARCH PROJECTS

No	Title	Budget	Funding Source	Role	Dates
1	Novel photovoltaic cells and systems	163.000 €	Interreg III	WP Leader	05/10/07 – 31/12/08
2	Visibility Study of a Solar Thermal Park in Crete	12.000 €	Sustainable Solar Thermal Future Ltd	PI	19/01/09-20/07/09
3	Energy Management Study and Plan of Public Buildings	30.000 €	Municipality of Gazi, Greece	PI	01/06/09-01/09/09
4	Electron Microscopy Facility	235.000 €	Prefecture of Crete	Co-PI	01/06/06-01/06/08
5	Graphene and its composites: Production, properties and applications	100.000 €	Thales, Greek Ministry of Education	WP Leader	01/01/12 - 31/12/14
6	Nanostructured hybrid solar cells	100.000 €	Archimedes III, Greek Ministry of Education	WP Leader	01/01/12 - 31/12/13
7	Flexible field emission elements based on micro/nano graphitic nanostructures	100.000 €	Archimedes III, Greek Ministry of Education	PI	01/01/12 - 30/09/13
8	Erasmus LLP: Organic Electronics and Applications	60.000 €	European Commission	PI	01/01/13-31/09/15
9	Graphene-Based Revolutions in ICT and Beyond	660.000 €	European Commission	PI	01/10/13-31/3/15
10	Plasmonic nanoparticles for efficient, stable and low cost organic photovoltaic devices	216.000 €	Excellence Award	PI	01/04/14 – 31/7/15
11	Efficient and stable perovskite solar cells	60.000 €	Greek State Scholarships Foundation	PI	01/10/16-31/09/17
12	Graphene-based disruptive technologies	478.000 €	European Commission	PI	01/04/16-31/03/18
13	NanoCarbon 2D Materials for Efficient and Stable High Temperature Proton Exchange Membrane Fuel Cells	150.000€	European Structural and Investment Funds	PI	01/03/18-31/02/21
14	Printable perovskite based solar glasses	220.000€	European Structural and Investment Funds	PI	01/03/18-31/02/21
15	Alternative smart ocular implants with controlled ophthalmic pharmacokinetics	265.000€	European Structural and Investment Funds	PI	01/03/18-31/02/21
16	Graphene Flagship Core Project 2	910.750 €	European Commission	PI	01/04/18-31/03/20
17	Graphene Flagship Core3	1.152.000 €	European Commission	PI	01/04/20-30/09/23
18	PV Inspection Drone	78.000 €	European Structural and Investment Funds	PI	01/04/18-31/03/20
19	Emerging Printed Electronics Research Infrastructure	542.000 €	European Commission	PI	01/05/21-31/03/25



## **12. ORGANISATION OF INTERNATIONAL CONFERENCES**

- 1st International Symposium on Transparent Conducting Oxides, Heraklion, Crete, Oct 2006 *Organizing committee*
- COINAPO Topical Meeting on Polymer-Nanoparticles Composites, Heraklion, Crete, Oct 2013, *Co-Chairman*
- Organic & Hybrid Solar Cells Conference, Oct 2016, Heraklion, Crete (<http://solar.teicrete.gr>) *Chairman*
- Graphene Week, Athens, Sep 2017 *Programme Committee* (<http://grapheneflagship.eu/grapheneweek>)
- 1<sup>st</sup> International Conference of Nanotechnologies and Bionanosciences, Heraklion, September 2018 (<http://nanobioconf.com>) *Co-chairman*
- Graphene 2019, Rome, Jun 2019 *International Scientific Committee* <http://www.grapheneconf.com/2019/>
- PIERS 2019, Photonics & Electromagnetics Research Symposium. Graphene 2D Materials for Photonics, Plasmonics and Metamaterials. Session *Co-organiser* <http://piers.org/piers2019Rome/session.php>
- 2<sup>nd</sup> International Conference of Nanotechnologies and Bionanosciences, Heraklion, September 2022 (<http://nanobioconf.com>) *Co-chairman*

## **13. CONSULTANCY AND ENGINEERING**

- Development of an energy policy assessment utility for the non-interconnected electric system of Crete.
- Design optimization for the installation of open field PV systems
- Development of GIS-oriented computational systems for the study of Direct Normal Irradiation (DNI) and Global Horizontal Irradiation (GHI)
- Energy and financial simulation of RES Projects.
- Development of simulation algorithms for Energy Projects.
- Study and design of Concentrating Solar Power (CSP) and Photovoltaic (PV) projects (licensing of many CSP incorporating Stirling – dish technology (~25MW) and a 25MW CSP with Power Tower project of Abengoa Solar Ltd at the region of Crete, licensing and design of several PV Stations all over Greece).
- Project management and supervision of the implementation of several RES projects.

## **14. SPECIAL REFERENCES/INTERVIEWS**

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- PHYSORG, “Flexible organic photovoltaic cells with in-situ non-thermal photoreduction of spin coated graphene oxide electrodes” Jan 2013, <http://phys.org/news/2013-01-flexible-photovoltaic-cells-in-situ-non-thermal.html>

- Cretalive, “Big success of Cretan researchers in the development of flexible plastic photovoltaics” in Greek, Jan 2013, <http://www.cretalive.gr/culture/view/megalh-epituchia-krhtikwn-ereunhtwn-sthn-anaptujh-eukamptwn-plastikwn-fwto/58433>
- Patris Newspaper, “Cretan scientist research graphene, one of the EU flagships” in Greek <http://www.patris.gr/articles/236653>
- E&T Newsletter “Novel discovery in flexible plastic photovoltaics” in Greek <http://www.et-online.gr/default.asp?pid=19&la=1&arc=6&art=296&nwID=23>
- Eleutheros Typos Newspaper” The Greeks that write history in electronic paper” in Greek [http://panayiotismavraganis.blogspot.gr/2013/03/blog-post\\_10.html](http://panayiotismavraganis.blogspot.gr/2013/03/blog-post_10.html)
- Spotlight on Science, ESRF, “Organic photovoltaic device local structure revealed by combined X-ray diffraction and fluorescence” <http://www.esrf.eu/home/news/spotlight/content-news/spotlight/spotlight193.html>
- Graphene Interface Engineering for Large Area, High Efficiency Solar Cell, GF news <https://graphene-flagship.eu/large-area-pscs>

### **13. PERSONAL**

Date of Birth: 18<sup>th</sup> of April 1977      Place of Birth: Heraklion, Crete, Greece  
Marital Status: Married (1 son, 2 daughters)