

# George Kenanakis - Curriculum vitae<sup>1</sup>

## Personal data

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Name : George Kenanakis

Studies : Chemical Engineer, M.Sc., Ph.D.

Marital status : Married, 1 child

Nationality : Greek

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## Education

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2011	Ph.D.	Institute :	University of Crete, Faculty of Sciences, Chemistry department. <i>Ph.D. dissertation: "Synthesis of ZnO and TiO<sub>2</sub> thin films and nanostructures using chemical techniques and study of their photocatalytic properties".</i>
2007	M.Sc.	Institute :	University of Crete, Faculty of Sciences, Chemistry department. <i>Postgraduate Program in "Environmental Protection Technologies".</i> <i>M.Sc. dissertation: "Synthesis of ZnO nanostructures using aqueous solutions and study of their ozone sensing properties"</i>
2003	B. Eng. (Chem.) & M.Eng.	Institute :	Aristotle University of Thessaloniki, Faculty of Engineering, Chemical Engineering department. <i>Thesis: "The use of industrial minerals as soil enhancers in acidic soils".</i>

## Scholarships

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2006 - 2007	Institute :	University of Crete, Faculty of Sciences, Chemistry department. <i>Grade scholarship during the postgraduate program "Environmental Protection Technologies".</i>
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## Work experience

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Self employed chemical engineer from 30/10/2003 to 10/11/2016.

Registered chemical engineer in Prefecture of Lasithi's records since 17/09/2004.

Registered engineer in Greek Ministry of Environment, Energy and Climate change (ID No. 22384) since 01/06/2010.

Advanced auditor in Environmental Management Systems (ISO 14001) of TUV HELLAS since 20/12/04.

Advanced auditor in Quality Management Systems (ISO 9001) of EUROCERT since 10/07/05.

Collaborating researcher in Foundation for Research and Technology - Hellas (FORTH) - Institute of Electronic Structure and Laser (IESL) since 01/01/06.

Collaborating researcher in Center of Materials Science and Photonics of School of Applied Technology, Technological Educational Institute (TEI) of Crete since 01/09/06.

Accredited instructor registered in Hellenic Food Authority of Greek Ministry of Health and Social Solidarity (E.F.E.T.); (ID No. 631).

Accredited instructor registered in Greek National Centre for Public Administration and Local Government (E.K.D.D.A.); (ID No. 9088).

Accredited instructor registered in Manpower Agency of Greece (O.A.E.D.); (ID No. 28894).

Researcher C' in Foundation for Research and Technology - Hellas (FORTH) - Institute of Electronic Structure and Laser (IESL) since 04/11/16.

## **Administrative experience, Technological and Educational Institute (TEI) of Crete**

20/02/10 - 30/06/10 Member of Quality Assurance Unit (QAU - MODIP) of TEI of Crete, according to provisions of L.4009/2011 and the decision no 27/27-03-2009 made by the Committee of the Institute.

## **Teaching experience, Technological and Educational Institute (TEI) of Crete**

Lecturer at the School of Applied Technology of the Technological and Educational Institute of Crete since 20/02/06.

- ❖ 07/10/13 - 28/02/14 Teaching of the theoretical course "Plastic's technology" in Mechanical Engineering department.
- ❖ 21/02/11 - 31/07/13 Teaching of the laboratorial course "Environmental technology" in Electrical Engineering department.
- ❖ 21/02/11 - 31/07/13 Teaching of the laboratorial course "Structural Materials" in Civil Engineering department.
- ❖ 23/02/09 - 30/06/09 Teaching of the laboratorial course "Chemical Technology" in Mechanical Engineering department.
- ❖ 01/10/07 - 15/02/08 Teaching of the theoretical course "Material's Science and Engineering" in Mechanical Engineering department.
- ❖ 01/10/07 - 24/02/12 Teaching of the theoretical course "Material's Science and Engineering" in Electrical Engineering department.
- ❖ 01/10/07 - 14/02/14 Teaching of the laboratorial course "Electrochemistry and Material's Science" in Electrical Engineering department.
- ❖ 01/10/07 - 27/06/08 Teaching of the theoretical course "Chemical Technology" in Civil Engineering department.
- ❖ 20/02/06 - 28/02/15 Teaching of the laboratorial course "Material's Technology" in Mechanical Engineering department.

## **Student supervision, Technological and Educational Institute (TEI) of Crete & University of Crete**

### ▪ **Post Doctorates (Post Docs)**

01. Dr. V. Papadakis (2017 – currently), *FT-IR and Raman spectroscopy on biomedical samples*, IESL - FORTH.
02. Dr. Z. Viskadourakis (2016 - currently), *Chemical synthesis of Metal Oxide nanoparticle composites with novel with environmental applications*, IESL - FORTH.
03. Dr. K. C. Vasilopoulos (2016 - 2017), *Electromagnetic shielding effectiveness of 3D printed polymer composites*, IESL - FORTH

### ▪ **Doctorates (Ph.D.'s)**

01. M. Sevastaki, *Three-dimensional ceramic and polymer composites with environmental applications*, Ph.D., Chemistry dept., University of Crete (on going work).

### ▪ **Masters (M.Sc.'s)**

01. I. Heliadis, *Chemical synthesis of zinc oxide (ZnO) powders and study of their photocatalytic efficiency against methylene blue degradation in aqueous solutions*, M.Sc., Chemistry dept., University of Crete (2010), co-supervision with Prof. N. Katsarakis, Electrical Engineering dept., TEI of Crete.
02. I. Vamvasakis, *Chemical synthesis of tungsten oxide (WO<sub>3</sub>) powders and study of their photocatalytic efficiency against methylene blue degradation in aqueous solutions*, M.Sc., Chemistry dept., University of Crete (2010), co-supervision with Prof. N. Katsarakis, Electrical Engineering dept., TEI of Crete.
03. A. Psaroudakis, *Chemical synthesis of titanium oxide (TiO<sub>2</sub>) powders, doped with iron (Fe<sup>2+/3+</sup>) and study of their photocatalytic efficiency against methylene blue degradation in aqueous solutions*, M.Sc., Chemistry dept., University of Crete (2010), co-supervision with Prof. N. Katsarakis, Electrical Engineering dept., TEI of Crete.
04. M. Michailidis, *A study of the photocatalytic efficiency of ZnO and TiO<sub>2</sub> nano-powders against various pollutants*, M.Sc., Chemistry dept., University of Crete (2009), co-supervision with Prof. N. Katsarakis, Electrical Engineering dept., TEI of Crete.
05. Z. Gianakoudakis, *Chemical deposition of Al-doped ZnO thin films (Zn<sub>1-x</sub>Al<sub>x</sub>O); Study of their photocatalytic efficiency against stearic acid's degradation*, M.Sc., Chemistry dept., University of Crete (2009) co-supervision with Prof. N. Katsarakis, Electrical Engineering dept., TEI of Crete.
06. N. Lironi, *Study of the photocatalytic efficiency of ZnO and TiO<sub>2</sub> thin films on polymer substrates*, M.Sc., Material Science and Technology dept., University of Crete (2008), co-supervision with Prof. N. Katsarakis, Electrical Engineering dept., TEI of Crete.

### ▪ **Undergraduate Senior Theses**

01. D. Kosmidis, *3D printed polymeric samples with novel applications*, Chemistry dept., University of Crete (2017).
02. A. Arvanitakis, *Study of management and reuse dairy waste*, Electrical Engineering dept., TEI of Crete (2014).
03. Th. Demertzis, *Environmental impacts from the production and use of chemical detergents and soaps*, Electrical Engineering dept., TEI of Crete (2013).
04. Th. Leontarakis, *Waste combustion technologies; Specifications and financial data*, Mechanical Engineering dept., TEI of Crete (2013).
05. A. Ninos, *Treatment and reuse of winery waste*, Mechanical Engineering dept., TEI of Crete (2013).
06. M. Konsolaki, *Biological and environmental impact of the electricity transmission networks*, Electrical Engineering dept., TEI of Crete (2013).
07. C. Galanoulis, *Environmental impact of photovoltaics*, Electrical Engineering dept., TEI of Crete (2013).

08. G. Dourountakis, *Environmental impacts of biomass thermal processing*, Electrical Engineering dept., TEI of Crete (2012).
09. D. Kalogridakis, *Environmental impacts of hospital waste*, Electrical Engineering dept., TEI of Crete (2011).
10. M. Glada, *Study of management and disposal of ships waste*, Electrical Engineering dept., TEI of Crete (2011).
11. C. Georgakarakos, *Processing and exploitation of oil mill wastewater*, Mechanical Engineering dept., TEI of Crete (2011).
12. M. Vachatsakis, *Deposition of  $Zn_{1-x}Al_xO$  ( $x = 0.0-5.0$ ) thin films using ultrasonic spray pyrolysis (USP); Study of structural, morphological, optical and electrical properties*, Electrical Engineering dept., TEI of Crete (2010).
13. C. Chatzis, *Deposition of  $Zn_{1-x}Al_xO$  ( $x = 0, 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 4.0, 5.0$ ) thin films using the sol-gel technique; Study of the conductivity as a function of the stoichiometry*, Electrical Engineering dept., TEI of Crete (2010), co-supervision with Prof. N. Katsarakis, Electrical Engineering dept., TEI of Crete.
14. N. Kaklamanos, *Chemical deposition of titanium dioxide ( $TiO_2$ ) thin films on glass substrates; Study of their photocatalytic and self-cleaning properties*, Civil Engineering dept., TEI of Crete (2010), co-supervision with Prof. N. Katsarakis, Electrical Engineering dept., TEI of Crete.
15. G. Kamitsas, *Photocatalytic degradation of methylene blue using titanium dioxide ( $TiO_2$ ) thin films*, Mechanical Engineering dept., TEI of Crete (2013), co-supervision with Prof. N. Katsarakis, Electrical Engineering dept., TEI of Crete.
16. N. Kampitakis, *Chemical deposition of  $SiO_2/TiO_2$  bilayers on glass and study of their optical and photocatalytic properties*, Civil Engineering dept., TEI of Crete (2010), co-supervision with Prof. N. Katsarakis, Electrical Engineering dept., TEI of Crete.
17. M. Egglezakis, *Electrical conductivity/photoconductivity measurements of ZnO thin films deposited by chemical methods using aqueous solutions*, Electrical Engineering dept., TEI of Crete (2009), co-supervision with Prof. N. Katsarakis, Electrical Engineering dept., TEI of Crete.
18. P. Milionis, *Synthesis of ZnO nanostructures and study of their photoconductivity*, Civil Engineering dept., TEI of Crete (2009), co-supervision with Prof. N. Katsarakis, Electrical Engineering dept., TEI of Crete.

### Research interests

Interdisciplinary research interests ranging between applied physics and electromagnetism to chemical synthesis of materials and structural characterization and instrumentation.

Specifically,

- ❖ Electromagnetic wave propagation in composite media, with emphasis on metamaterials, photonic crystals, plasmonic structures, and random dielectric and metalodielectric systems.
- ❖ Design and simulation of both passive and dynamically controllable chiral metamaterials, as well as electromagnetic characterization of such metamaterials in microwaves and IR
- ❖ Realization/calculation of Casimir force between chiral metamaterials.

and

- ❖ Synthesis and study of metal oxide thin films and nanostructures of ( $ZnO$ ,  $InO_x$ ,  $WO_3$ ,  $TiO_2$ ,  $SiO_2$ ,  $VO_2$ ) emphasized in:
  - (a) photocatalysis of organic pollutants in liquid and gas phase,
  - (b) growth of novel metal oxide coatings with self-cleaning properties,
  - (c) growth of thermochromic and electrochromic materials.

*The interaction between the synthesis of metal oxides using chemical techniques, and the electromagnetic properties of such materials, leads to metamaterials for novel applications such as perfect absorbers, electromagnetic shielding etc.*

- ❖ Indeed, during the last year we are working, both theoretically and experimentally, on perfect absorbers based on Metal-Insulator-Metal (MIM) structures consisting of metal and  $ZnO$  or  $TiO_2$ ,  $SiO_2$ , etc. multilayers, tuning their absorption peaks by selecting optimum dielectric spacer, which find application in thermovoltaic and photovoltaic solar cells and optics. This way, we are exploring to what extent it is possible to manage the solar light efficiency using semiconductor metamaterials perfect absorbers/emitters integrated with solar devices (infrared detection, sensors, LEDs).
- ❖ Another field of interest stands on plasmonic metamaterials, tuning their absorption spectra by selecting optimum geometry. Such way, we study potential use of such plasmonic metamaterials in optics and microscopy beyond the diffraction limit using Luneburg and Eaton lenses that interact with surface plasmon polaritons, rather than photons. In addition, plasmonic metamaterials can improve the mechanical, optical and electromagnetic properties of sensors; several metamaterial designs with sharp Fano resonances are studied as potential sensors/bio-sensors, both theoretically and experimentally, from GHz to THz regime.
- ❖ Moreover, the electromagnetic shielding effectiveness of either flexible polymeric membranes, or porous ceramics, or even paint-like nanocomposite layers is yet another hot topic of interest, since they offer quite effective electromagnetic shielding, similar or even better than that of commercial products, depending on their thickness and electrical resistivity. Several conducting metal oxides (such as  $ZnO$ , Al-doped  $ZnO$ , Indium Tin oxide, etc.), and carbon nanomaterials such as carbon nanotubes, graphene oxide and graphene nanoplatelets, are used, while various ferrites e.g.  $\gamma-Fe_2O_3$ ,  $Fe_3O_4$ , and other thermoelectrics, are considered as tunable EMI shielding materials under thermal excitation.
- ❖ Finally, energy harvesting and the conversion of microwave signal to electrical power is a hot topic, due largely to the increasing demand of wireless charging for portable electronic devices and electric vehicles. We are focusing on the implementation of magnetic metamaterials in a wireless power transfer (WPT) system with different designs. We are close to the fabrication of samples and the experimental verification that the power transfer efficiency can be improved significantly by a metamaterial.

## **Research experience - List of funded projects as Coordinator and Partner**

Interdisciplinary experience and background ranging between natural sciences, chemical and structural characterization, instrumentation, technologies and electromagnetism.

### **01/01/06 – today Foundation for Research and Technology - Hellas (FORTH), Institute of Electronic Structure and Laser (IESL), Photonic-, Phononic- and Meta-Materials (PPM) Group (<http://esperia.iesl.forth.gr/~ppm/>)**

- ❖ Coordinator of POLY-SHIELD (2018 - 2021), “*Polymeic Nanocomposites for Electromagnetic Shielding applications*”, Greek General Secretariat for Research and Technology (GSRT), Greece.  
Role: Principal Investigator-Coordinator.
- ❖ PHOTOMETA (01/03/13 - 28/02/18), “*PHOTonic METAmaterials: From Basic Research to Applications*”, ERC Advanced Grant 2012.  
Role: Research-Partner.
- ❖ SolarNano (01/11/13 - 30/10/15), “*Nanostructured plasmonic reflectors for efficient thin film solar cells*”, Greece-Germany Bilateral research cooperation.  
Role: Research-Partner.
- ❖ EXEL (22/05/12 - 21/09/15), “*EXtending ELectromagnetism through novel artificial materials*”, ERC-02 by Greek GCRT.  
Role: Research-Partner.
- ❖ COST Action MP0803 (20/10/08 - 21/11/12), “*Plasmonic Components and Devices*”.  
Role: Research-Partner.
- ❖ COST Action MP0702 (21/01/08 - 20/01/12), “*Towards Functional Sub-wavelength Photonic Structures*”.  
Role: Research-Partner.
- ❖ NIM\_NIL (01/09/09 - 31/08/12), “*Large Area Fabrication of 3D Negative Index Materials by Nano-Imprint Lithography*”, FP7 NMP EU project, Grant Agreement No:228637.  
Role: Research-Partner.
- ❖ ECONAM (01/04/08 - 31/03/11), “*Electromagnetic Characterization Of NANOstructured Materials*”, Coordination Action FP7 EU project.  
Role: Research-Partner.
- ❖ ENSEMBLE (01/05/08 - 30/04/12), “*ENgineered SElf-organized Multi-component structures with novel controllaBLE Electomagnetic functionalities*”, FP7 NMP EU Project, Grant Agreement No: NMP4-SL-2008-213669.  
Role: Research-Partner.
- ❖ PHOME (01/06/08 - 31/05/11), “*PHOtonic MEtamaterials*”, FP7 ICT-FET Open Project, Project No: 213390.  
Role: Research-Partner.
- ❖ PHOREMOST (01/10/04 - 30/09/08), “*PHOtonics to REalize MOlecular Scale Technologies*”, Network of Excellence (NoE) EU project.  
Role: Research-Partner.
- ❖ METAMORHOSE (01/06/04 - 31/05/08), “*METAMaterials ORganised for radio, millimeter wave and PHOtonic Superlattice Engineering*”, Network of Excellence (NoE) EU project.  
Role: Research-Partner.
- ❖ Reinforcement Program of Human Research Manpower - PENED (01/01/06 - 30/04/06), “*Growth of gas sensors*”, co-funded by the European Social Fund and National Resources.  
Role: Research-Partner.

### **15/09/05 – today Technological Educational Institute (TEI) of Crete, Center of Materials Science and Photonics of School of Applied Technology (CEMATEP) (<http://www.teicrete.gr/cmtl/cematep/>)**

- ❖ Operational Program “Education and Lifelong Learning”, Action ARCHIMEDES III (06/06/14 - 08/12/14), “*Growth and characterization of novel nanostructured materials suitable for electromagnetic shielding applications in the GHz regime*”, co-funded by the European Social Fund and National Resources.  
Role: Research-Partner.
- ❖ Operational Program “Education and Lifelong Learning”, Action ARCHIMEDES III (01/03/14 - today), “*Advanced low-cost electrochromic windows*”, co-funded by the European Social Fund and National Resources.  
Role: Research-Partner.
- ❖ Operational Program “Education and Lifelong Learning”, Action ARCHIMEDES III (01/09/12 - today), “*Growth of nanostructured metal oxides with enhanced photocatalytic properties under visible radiation*”, co-funded by the European Social Fund and National Resources.  
Role: Research-Partner.
- ❖ Project INTERREG III/A Greece-Cyprus (15/01/07 - 31/05/08), “*Innovative photovoltaic elements and high efficiency photovoltaic systems*”, co-funded by the European Social Fund and National Resources.  
Role: Research-Partner.
- ❖ Project EPEAEK II - ARCHIMEDES I (02/01/07 - 28/02/07), “*Growth of ZnO thin films and their gas-sensing use against oxidizing gases*”, co-funded by the European Social Fund and National Resources.  
Role: Research-Partner.

- ❖ **Project EPEAEK II - ARCHIMEDES I** (01/09/06 - 31/10/06), “Growth of thin films and their use in high analysis optical depiction in near infra-red”, co-funded by the European Social Fund and National Resources.  
Role: Research-Partner.
- ❖ **Project EPEAEK II - ARCHIMEDES I** (15/09/05 - 31/08/07), “Semimetal ferromagnets and antiferromagnets”, co-funded by the European Social Fund and National Resources.  
Role: Research-Partner.

### **Publications in refereed journals**

01. Ioanna Bakaimi, Evie L. Papadopoulou, Georgios Kenanakis, Emmanouel Spanakis and Alexandros Lappas,  *$\beta$ -NaFeO<sub>2</sub> thin films growth on a ZnO layer by pulsed laser deposition*, Thin Solid Films **645** (2018), 424.
02. E. Drakakis, M. Sucheas, V. Tudose, G. Kenanakis, D. Stratakis, K. Dangakis, A. Miaoudakis, D. Vernardou, E. Koudoumas, *Zinc oxide-graphene based composite layers for electromagnetic interference shielding in the GHz frequency ranges*, Thin Solid Films, in press (2017), DOI: 10.1016/j.tsf.2017.07.023.
03. Z. Viskadourakis, K. C. Vasilopoulos, E. N. Economou, C. M. Soukoulis, and G. Kenanakis, *Electromagnetic shielding effectiveness of 3D printed polymer composites*, Appl. Phys. A **123** (2017), 736.
04. D. Vernardou, K. C. Vasilopoulos, and G. Kenanakis, *3D printed graphene-based electrodes with high electrochemical performance*, Appl. Phys. A **123** (2017), 623.
05. E. Vasilaki, D. Vernardou, G. Kenanakis, M. Vamvakaki, and N. Katsarakis, *TiO<sub>2</sub>/WO<sub>3</sub> photoactive bilayers in the UV-Vis light region*, Appl. Phys. A **123** (2017), 231.
06. Argyro N. Giakoumaki, George Kenanakis, Argiro Klini, Maria Androulidaki Zacharias Viskadourakis, Maria Farsari, and Alexandros Selimis, *Three-dimensional patterning of ZnO nanostructures*, Sci. Rep. **7** (2017), 2100.
07. Argyro N. Giakoumaki, George Kenanakis, Argiro Klini, Maria Androulidaki Zacharias Viskadourakis, Maria Farsari, and Alexandros Selimis, *is, 3D patterning of ZnO nanostructures*, Mater. Today **20** (2017), 392.
08. G. Kenanakis, Ch. P. Mavidis, E. Vasilaki, N. Katsarakis, M. Kafesaki, E. N. Economou, C. M. Soukoulis, *Perfect absorbers based on metal insulator metal structures in the visible region: a simple approach for practical applications*, Appl. Phys. A **123**, (2017) 77.
09. E. Drakakis, E. Kymakis, G. Tzagkarakis, D. Louloudakis, M. Katharakis, G. Kenanakis, M. Sucheas, V. Tudose, E. Koudoumas, *A study of the electromagnetic shielding mechanisms in the GHz frequency range of graphene based composite layers*, Appl. Surf. Sci. **398** (2017) 15-18.
10. E. Gavgiotaki, G. Filippidis, H. Markomanolaki, G. Kenanakis, S. Agelaki, V. Georgoulis, and I. Athanassakis, *Distinction between breast cancer cell subtypes using third harmonic generation microscopy*, J. Biophotonics **10** (2017), 1152-1162.
11. G. Kenanakis, K. C. Vasilopoulos, Z. Viskadourakis, N.-M. Barkoula, S. H. Anastasiadis, M. Kafesaki, E. N. Economou, and C. M. Soukoulis, *Electromagnetic shielding effectiveness and mechanical properties of graphite-based polymeric films*, Appl. Phys. A **122**, (2016) 802.
12. G. Kenanakis, E. N. Economou, C. M. Soukoulis, and M. Kafesaki, *Controlling THz and far-IR waves with chiral and bianisotropic metamaterials*, EPJ Appl. Metamat. **2** (2015) 15.
13. Mikhail V. Shuba, Alesia G. Paddubskaya, Polina P. Kuzhir, Sergey A. Maksimenko, Gintaras Valusis, Nikolai A. Poklonski, Stefano Bellucci, George Kenanakis, and Maria Kafesaki, *Temperature induced modification of the mid-infrared response of single-walled carbon nanotubes*, J. Appl. Phys. **119** (2016) 104303.
14. Dimitrios Louloudakis, Dimitra Vernardou, Emmanuel Spanakis, Mirela Sucheas, George Kenanakis, Martyn Pemble, Constantine Savvakis, Nikolaos Katsarakis, Emmanuel Koudoumas, and George Kiriakidis, *Atmospheric pressure chemical vapor deposition of amorphous tungsten doped vanadium dioxide for smart window applications*, Adv. Mater. Lett. **7** (2016) 100-150.
15. Melani A. Frysalis, Lampros Papoutsakis, George Kenanakis, and Spiros H. Anastasiadis, *Functional Surfaces with Photocatalytic Behavior and Reversible Wettability: ZnO Coating on Silicon Spikes*, J. Phys. Chem. C **119** (2015) 25401-25407.
16. George Kenanakis, Costas M. Soukoulis, and Eleftherios N. Economou, *Casimir forces of metallic microstructures into cavities*, Phys. Rev. B **92** (2015), 075430.
17. I. Vamvasakis, I. Georgaki, D. Vernardou, G. Kenanakis, N. Katsarakis, *Synthesis of WO<sub>3</sub> catalytic powders: evaluation of photocatalytic activity under NUV/visible light irradiation and alkaline reaction pH*, J. Sol-Gel Sci. Technol. **76** (2015), 120-128.
18. G. Kenanakis, D. Vernardou, A. Dalamagkas and N. Katsarakis, *Photocatalytic and electrooxidation properties of TiO<sub>2</sub> thin films deposited by sol-gel*, Catal. Today **240** (2015), 146-152.
19. G. Kenanakis, A. Xomalis, A. Selimis, M. Vamvakaki, M. Farsari, M. Kafesaki, C.M. Soukoulis, and E.N. Economou, *Three-Dimensional Infrared Metamaterial with Asymmetric Transmission*, ACS Photonics **2** (2015) 287-294.
20. M. Sucheas, I.V. Tudose, G. Tzagkarakis, G. Kenanakis, M. Katharakis, E. Drakakis, E. Koudoumas, *Nanostructured composite layers for electromagnetic shielding in the GHz frequency range*, Appl. Surf. Sci. **352** (2015) 151-154.
21. G. Kenanakis, and N. Katsarakis, *Ultrasonic spray pyrolysis growth of ZnO and ZnO:Al nanostructured films: Application to photocatalysis*, Mater. Res. Bull. **60** (2014), 752-759.
22. G. Kenanakis, R. Zhao, N. Katsarakis, M. Kafesaki, C.M. Soukoulis, and E.N. Economou, *Optically controllable THz chiral metamaterials*, Opt. Express **22** (2014) 12149-12159.

23. G. Kenanakis, and N. Katsarakis, *ZnO nanowires on glass via chemical routes: A prospective photocatalyst for indoors applications*, J. Env. Chem. Eng. **2** (2014) 1416-1422.
24. G. Kenanakis, and N. Katsarakis, *Chemically grown TiO<sub>2</sub> on glass with superior photocatalytic properties*, J. Env. Chem. Eng. **2** (2014) 1748-1755.
25. G. Kenanakis, N. Katsarakis E. Koudoumas, *Influence of precursor type, deposition time and doping concentration on the morphological, electrical and optical properties of ZnO and ZnO:Al thin films grown by ultrasonic spray pyrolysis*, Thin Solid Films **555** (2014) 62-67.
26. G. Kenanakis, M. Pervolaraki, J. Giapintzakis, N. Katsarakis, *The use of pulsed laser deposited seed layers for the aqueous solution growth of highly-oriented ZnO nanowires on sapphire substrates at 95 °C: Study of their photocatalytic activity in terms of octadecanoic (stearic) acid degradation*, Appl. Catal., A **467** (2013) 559-567.
27. Dimitra Vernardou, Antonis Sapountzis, Emmanouel Spanakis, George Kenanakis, Emmanouil Koudoumas, and Nikolaos Katsarakis, *Electrochemical activity of electrodeposited V<sub>2</sub>O<sub>5</sub> coatings*, J. Electrochem. Soc **160** (2013) D6-D9.
28. G. Kenanakis, R. Zhao, A. Stavrinidis, G. Konstantinidis, N. Katsarakis, M. Kafesaki, C.M. Soukoulis, E.N. Economou, *Flexible Chiral metamaterials in the terahertz regime: A comparative study of various designs*, Opt. Mater. Express **2** (2012) 1702-1712.
29. G. Kenanakis, N.-H. Shen, Ch. Mavidis, N. Katsarakis, M. Kafesaki, C.M. Soukoulis, E.N. Economou, *Microwave and THz sensing using slab-pair-based metamaterials*, Physica B **407** (2012) 4070-4074.
30. A. Reyes-Coronado, M.F. Acosta, R.I. Merino, V.M. Orera, G. Kenanakis, N. Katsarakis, M. Kafesaki and C.M. Soukoulis, *Self-organization approach for THz polaritonic metamaterial*, Opt. Express **20** (2012) 14663-14682.
31. G. Kenanakis, D. Vernardou, N. Katsarakis, *Light-induced self-cleaning properties of ZnO nanowires grown at low temperatures*, Appl. Catal., A **411-412** (2012) 7-14.
32. G. Kenanakis, M. Androulidaki, D. Vernardou, N. Katsarakis, E. Koudoumas, *Photoluminescence study of ZnO structures grown by Aqueous Chemical Growth*, Thin Solid Films **520** (2011) 1353-1357.
33. G. Kenanakis, N. Katsarakis, *Light-induced photocatalytic degradation of stearic acid by c-axis oriented ZnO nanowires*, Appl. Catal., A **378** (2010) 227-233.
34. G. Kenanakis, Z. Giannakoudakis, D. Vernardou, C. Savvakis, N. Katsarakis, *Photocatalytic degradation of stearic acid by ZnO thin films and nanostructures deposited by different chemical routes*, Catal. Today **151** (2010) 34-38.
35. D. Vernardou, E. Spanakis, G. Kenanakis, E. Koudoumas and N. Katsarakis, *Hydrothermal growth of V<sub>2</sub>O<sub>5</sub> photoactive films at low temperatures*, Mater. Chem. Phys. **124** (2010) 319-322.
36. A. Reyes-Coronado, M.F. Acosta, R.I. Merino, V.M. Orera, G. Kenanakis, N. Katsarakis, M. Kafesaki and C.M. Soukoulis, *Electromagnetic response of anisotropic eutectic metamaterials in THz range*, AIP Conf. Proc. **1291** (2010) 148-150.
37. N.H. Shen, G. Kenanakis, M. Kafesaki, N. Katsarakis, E.N. Economou and C.M. Soukoulis, *Parametric investigation and analysis of fishnet metamaterials in the microwave regime*, J. Opt. Soc. Am. B **26** [12] (2009) B61-B67.
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## ***Publications in refereed Conference Proceedings with ISBN (International Standard Book Number)***

01. M. Kafesaki, G. Kenanakis, E.N. Economou, C.M. Soukoulis, *Chiral metamaterials: A tool for THz polarization control*, 16th International Conference on Transparent Optical Networks (ICTON), ISBN: 9781479956029, Th. B5.2 (2014).
02. M. Kafesaki, A. Reyes-Corronado, S. Foteinopoulou, G. Kenanakis, N. Katsarakis, M.A. Acosta, R.I. Merino, V.M. Orera, V. Myroshnychenko, J. de Abajo, E.N. Economou, C.M. Soukoulis, *THz manipulation and superlensing using polaritonic metamaterials*, Metamaterials'2011 Proceedings, ISBN 978-952-67611-0-7, p. 1003-1005 (2011).
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07. K. Kolodziejak, S. Turczynski, A. Klos, D. Pawlak, N. Katsarakis, G. Kenanakis, K. Rozniatowski, *Self-organized TiO<sub>2</sub>-MnTiO<sub>3</sub> fishnet-like microstructure*, The 2nd European Topical Meeting on Nanophotonics and Metamaterials, (Tirol, Austria, 5-8 January 2009), Book of abstracts TUE4f.37.
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09. G. Kenanakis, Z. Giannakoudakis, D. Vernardou, E. Koudoumas and N. Katsarakis, *Structural, optical and photocatalytic properties of ZnO thin films and nanostructures deposited by different chemical routes*, Proc. 7th International Conference on Coatings on Glass and Plastics, (Eindhoven - The Netherlands, 15-19 June ), ISBN 978-90-5986-281-4, p.113-114 (2008).

## ***Book Chapters***

1. A. Myrilla, G. Kenanakis, *Bioremediation of contaminated Landfills - Chapter 6: Case studies*, Technical Camber of Greece, ISBN: 960-88663-0-8, Heraklion, May 2006.
2. G. Kenanakis, Z. Viskadourakis, C. Savvakis, *Quality control and materials technology*, Notes for laboratory course "Material's Science and Engineering" in Mechanical Engineering department, ed. TEI of Crete (2007).
3. G. Kenanakis, N. Katsarakis, E. Geneiatakis, *Electrochemistry and Materials Technology*, Notes for laboratory course "Electrochemistry and Material's Science" in Electrical Engineering department, ed. TEI of Crete (2008).
4. G. Kenanakis, I. Georgaki, N. Katsarakis, *Environmental Technology*, Notes for laboratory course "Environmental technology" in Electrical Engineering department, ed. TEI of Crete (2011).

## ***Distinctions - Awards***

Member of project team "Extending electromagnetism through novel artificial materials - EXEL" which was awarded from the European Union with the "DESCARTES" Prize for Research Laureates for its innovative scientific work in left-handed meta-materials in December 2005 (coordinator of the project: Prof. Costas Soukoulis).

## ***Invited talks to peer-reviewed, internationally established conferences and advanced schools***

01. *"ZnO and TiO<sub>2</sub> nanostructured polymeric samples with enhanced photocatalytic behavior"*, Advances On PhotoCatalysis AdvPhotoCat2015 - International Workshop 1st Edition 2015, Iasi, Romania, July 6-8, 2015.
02. *"Chiral metamaterials: A tool for THz polarization control"*, presented in the 16th International Conference on Transparent Optical Networks (ICTON 2014), Graz, Austria, July 6-10, 2014.
03. *"Direct laser writing: principles, materials, and applications"*, presented in the 5th International Conference on Metamaterials, Photonic Crystals and Plasmonics (META'14), Singapore, May 20-23, 2014.
04. *"Environmental impact assessments (EIA) for seawater desalination plants"*, presented in the 1<sup>st</sup> meeting on "Prospects of marine water desalination systems in Ierapetra and exploitation of Renewable Energy Sources", TEI of Crete, Ierapetra, Crete, Greece, February 16, 2008.

## ***Presentations in international scientific conferences***

01. Ch. P. Mavidis, G. Kenanakis, G. Deligiorgis, Polina P. Kuzhir, M. Kafesaki, E. N. Economou, C. M. Soukoulis, *Graphene-Dielectric-Metal tunable THz perfect absorber*, 2nd Israel-Greece Joint Meeting on Nanotechnology and BioNanoscience, Heraklion, Greece, October 25-28, 2016.
02. E. Gavgiotaki, G. Filippidis, H. Markomanolaki, G. Kenanakis, S. Agelaki, V. Georgoulis, I. Athanassakis,, *Breast cancer cell lines discrimination by employing Third Harmonic Generation microscopy as a diagnostic tool*, 2nd Israel-Greece Joint Meeting on Nanotechnology and BioNanoscience, Heraklion, Greece, October 25-28, 2016.
03. Melani A. Frysalis, Georgia Kaklamani, Georgios Kenanakis, Lampros Papoutsakis, Spiros H. Anastasiadis, *Development of multi-functional surfaces with controllable wettability*, COST Action "Multi-Functional Nano-Carbon Composite Materials", Heraklion, Crete, October 19-20, 2016.
04. M. Kafesaki, G. Kenanakis, A.C. Tasolamprou, E.N. Economou, C.M. Soukoulis, *THz polarization control with chiral and bianisotropic metamaterials and metasurfaces*, International Conference on Transparent Optical Networks (ICTON 2016), Trento, Italy, July 10-14, 2016.
05. M. Kafesaki, A. Xomalis, E.N. Economou, G. Kenanakis, M. Farsari, G. Konstantinidis, C.M. Soukoulis, *THz and Far-IR Control with Chiral and Bianisotropic Metamaterials*, 7th Forum on New Materials (CIMTEC 2016), Perugia, Italy, June 5-9, 2016.
06. M. Farsari, A. Giakoumaki, G. Kenanakis, A. Klini, Z. Viskadourakis, *Three-Dimensional Patterning of ZnO Nanostructure*, 10th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials' 2016), Platania-Chania, Greece, September 17-22, 2016.
07. C. P. Mavidis, G. Kenanakis, G. Deligeorgis, M. Kafesaki, E. N. Economou, C. M. Soukoulis, *Graphene-Dielectric-Metal Tunable THz Perfect Absorber*, 10th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials' 2016), Platania-Chania, Greece, September 17-22, 2016.
08. G. Perrakis, G. Kenanakis, M. Kafesaki, C. M. Soukoulis, E. N. Economou, *Perfect Electromagnetic Absorbers and Sensors Based on Surface Plasmon Polaritons*, 10th International Congress on Advanced Electromagnetic Materials in Microwaves and Optics (Metamaterials' 2016), Platania-Chania, Greece, September 17-22, 2016.
09. Konstantinos C. Vasilopoulos, George Kenanakis, and Spiros H. Anastasiadis, *In-situ FTIR and UV-VIS characterization possibilities using custom flow-cell and controlled temperature setups and apparatuses*, QualityNano Conference and Training Workshop, Heraklion, Crete – Greece, July 15-17, 2015.
10. M. A. Frysalis, L. Papoutsakis, G. Kenanakis, E. Stratakis, G. Mountrichas, S. Pispas, and S. H. Anastasiadis, *Controllably Wetted Rough Polymeric Surfaces exhibiting photocatalytic activity*, 12<sup>th</sup> International Conference on Nano sciences and Nanotechnology, Thessaloniki, Greece, July 7-10, 2015.
11. G. Kenanakis, D. Vernardou and N. Katsarakis, *ZnO and TiO<sub>2</sub> nanostructured polymeric samples with enhanced photocatalytic behavior*, Advances On PhotoCatalysis AdvPhotoCat2015 - International Workshop 1st Edition 2015, Iasi, Romania, July 6-8, 2015.
12. G. Kenanakis, M. Kafesaki, E.N. Economou, and C. M. Soukoulis, *THz Control Using Chiral and Switchable-Chiral Metamaterials*, presented in 8<sup>th</sup> International Conference on Materials for Advanced Technologies of the Materials Research Society of Singapore (ICMAT2015), Signapore, June 28 - July 3, 2015.
13. M. Kafesaki, G. Kenanakis, E.N. Economou, and C. M. Soukoulis, *THz polarization control with chiral and bianisotropic metamaterials*, presented in 10th International Electrical, Transport, and Optical Properties of Inhomogeneous Media (ETOPIM 10), Neveh Ilan, Israel, June 21-26, 2015.
14. M. A. Frysalis, L. Papoutsakis, G. Kenanakis, and S. H. Anastasiadis, *Combined Photo-Active and Controllably Wetted Rough Polymeric Surfaces*, presented in 10th HELLENIC POLYMER SOCIETY CONFERENCE with International Participation (10th HPSC), Conference Center of the University of Patras, Rio-Patras, Greece, December 4-6, 2014
15. G. Kenanakis, N. Katsarakis, M. Kafesaki, C.M. Soukoulis and E.N. Economou, *Optically controllable THz chiral metamaterials*, presented in 30th Pan-hellenic conference on Solid-State Physics and Materials Science, Heraklion, Greece, September 21-24, 2014
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19. Alexandros Selimis, George Kenanakis, Angelos Xomalis, Maria Kafesaki, Maria Farsari, *Direct laser writing: principles, materials, and applications (Invited Paper)*, presented in SPIE NanoScience + Engineering, part of SPIE Optics + Photonics, San Diego, California, United States, August 17-21, 2014



20. Maria Kafesaki, George Kenanakis, Eleftherios N. Economou, Costas M. Soukoulis, *THz polarization control using chiral metamaterials*, presented in SPIE NanoScience + Engineering, part of SPIE Optics + Photonics, San Diego, California, United States, August 17-21, 2014
21. M. Kafesaki, G. Kenanakis, E.N. Economou, C.M. Soukoulis, *Chiral metamaterials: A tool for THz polarization control (Invited)*, presented in the 16th International Conference on Transparent Optical Networks (ICTON 2014), Graz, Austria, July 6-10, 2014.
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23. E. Vasilaki, D. Vernardou, I. Georgaki, G. Kenanakis, N. Katsarakis, *TiO<sub>2</sub> / WO<sub>3</sub> photoactive bilayers in the visible-light region*, presented in the 8th European Meeting on Solar Chemistry and Photocatalysis: Environmental Applications (SPEA8) Thessaloniki, Greece, June 25-28, 2014.
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35. I. Georgaki, M. Mihailidis, J. Iliadis, G. Kenanakis, D. Vernardou, N. Katsarakis, *Synthetic photo catalytic nano-powders of titanium and zinc oxides degrading persistent organic compounds in industrial effluents*, presented in the IWA Regional Conference on Wastewater Purification & Reuse 2012, Heraklion, Crete, Greece, March 28-30, 2012.
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42. R.I. Merino, M.F. Acosta, V.M. Orera, G. Kenanakis, A. Reyes-Coronado, N. Katsarakis, M. Kafesaki, *Hyperbolic Dispersion Relation in Directionally Solidified Eutectics in the THz Region*, presented in the 9<sup>th</sup> International Conference on Photonic and Electromagnetic Crystal Structures (PECS-IX 2010), Granada, Spain, September 26-30, 2010.
43. R.I. Merino, M.F. Acosta, V.M. Orera, G. Kenanakis, N. Katsarakis, M. Kafesaki, *Optical properties of NaCl-LiF directionally solidified eutectics in the THz region*, presented in the XI Congreso Nacional de Materiales, Zaragoza, Spain, June 23-25, 2010.
44. G. Kenanakis, C. Savvakis and N. Katsarakis, *Light-induced photocatalytic degradation of stearic acid by c-axis oriented ZnO nanowires grown at mild temperatures*, presented in the 8th International Conference on Coatings on Glass and Plastics (ICCG 8), Braunschweig, Germany, June 13-17, 2010.
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46. A. Klos, M. Gajc, G. Kenanakis, N. Katsarakis, A.E. Nikolaenko, N.I. Zheludev, D.A. Pawlak, *Directional solidifications of metallodielectric compounds*, presented in the 3rd Directionally solidified eutectic ceramics workshop, Seville, Spain, November 11-13, 2009.
47. G. Kenanakis, D. Vernardou, N. Katsarakis, *Light-induced photocatalytic degradation of stearic acid by c-axis ZnO oriented nanowires using aqueous solutions*, presented in the 2nd Hellenic Chemistry Post Grads Conference, Platanias, Chania, Crete, September 16-21, 2009.
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55. G. Kenanakis, S. Foteinopoulou, M. Kafesaki, N. Katsarakis, E. N. Economou, C. M. Soukoulis, *Fishnet Structure: The Occurrence of Left-Handed Behavior Over a Wide Range of Geometrical Parameters*, presented in the PhOREMOST Workshop "Advances in Nanophotonics", Barcelona, 30-31 October, 2008.
56. E. Spanou, A. Kyprianou, G.E. Georgiou, D. Vernardou, G. Kenanakis, E. Kymakis, N. Katsarakis, E. Koudoumas, *Metal oxide nanostructures for use in organic photovoltaic cells*, presented in the International Conference on Deregulated Electricity Market Issues in South-Eastern Europe (DEMSEE 2008), Nicosia, Cyprus, 22-23 September, 2008.
57. G. Kenanakis, D. Vernardou, Emm. Koudoumas, C. Savvakis and N. Katsarakis, *Structural, Optical and Photocatalytic properties of ZnO Thin Films and Nanostructures Deposited by Different Chemical Routes*, presented in the XXIV Panhellenic Conference on Solid State Physics and Materials Science, Heraklion, Crete, September 21-24, 2008.
58. G. Kenanakis, Z. Giannakoudakis, D. Vernardou, E. Kymakis, Emm. Koudoumas and Nikos Katsarakis, *Optical, electrical and photoresponse studies of ZnO thin films grown by chemical routes*, presented in the 2nd International Symposium on Transparent Conductive Oxides (TCOs 2008), Hersonissos, Crete, Greece, October 22 - 26, 2008.
59. D. Vernardou, E. Stratakis, A. Mohamed, G. Kenanakis, Emm. Koudoumas and N. Katsarakis, *Hydrothermal growth of Fe<sup>+3</sup> doped TiO<sub>2</sub> on glass for self-cleaning applications*, presented in the 2nd International Symposium on Transparent Conductive Oxides (TCOs 2008), Hersonissos, Crete, Greece, October 22 - 26, 2008.

60. D. Vernardou, K. Rizos, K. Moschovis, G. Kortidis, G. Kenanakis, Emm. Koudoumas, N. Katsarakis and G. Kiriakidis, *A comparative study of solution concentration and temperature on the hydrothermally grown ZnO ozone sensors*, presented in the 2nd International Symposium on Transparent Conductive Oxides (TCOs 2008), Hersonissos, Crete, Greece, October 22 - 26, 2008.
61. G. Kenanakis, Z. Giannakoudakis, D. Vernardou, Emm. Koudoumas and N. Katsarakis, *Structural, optical and photocatalytic properties of ZnO thin films and nanostructures deposited by different chemical routes*, presented in the 7th International Conference on Coatings on Glass and Plastics (ICCG 7), Eindhoven - The Netherlands, June 15-19, 2008.
62. G. Kenanakis, S. Foteinopoulou, I. Tsiapa, T. Gundogdu, R. Penciu, M. Kafesaki, N. Katsarakis, E. N. Economou, C. M. Soukoulis, *Photonic crystals and left-handed materials in FORTH*, presented in the Women in Photonics (WiP) School on Photonic Metamaterials, Organized by the European Networks of Excellence, Metamorphose-VI and Phoremest-NoE, Paris, April 14-18, 2008.
63. I. Tsiapa, N. Katsarakis, M. Kafesaki, G. Kenanakis, C. M. Soukoulis, E. N. Economou, *Fishnet Structure: The Occurrence of Left-Handed Behavior Over a Wide Range of Geometrical Parameters*, presented in the Women in Photonics (WiP) School on Photonic Metamaterials, Organized by the European Networks of Excellence, Metamorphose-VI and Phoremest-NoE, Paris, April 14-18, 2008.
64. George Kenanakis, Zacharias Giannakoudakis, Dimitra Vernardou, Emmanuel Koudoumas and Nikos Katsarakis, *Comparative study of Zn<sub>1-x</sub>Al<sub>x</sub>O thin films and nanostructures deposited by different chemical routes*, presented in the 3<sup>rd</sup> International Conference Micro & Nano 2007, NCSR Demokritos, Athens, Greece, November 18 - 21, 2007.
65. George Kenanakis, Nikos Katsarakis, Costas Savvakis, *Environmental impact assessments (EIA) for seawater desalination plants*, presented in the 1<sup>st</sup> meeting on "Prospects of marine water desalination systems in Ierapetra and exploitation of Renewable Energy Sources", TEI of Crete, Ierapetra, Crete, Greece, February 16, 2008.
66. G. Kenanakis, Z. Giannakoudakis, D. Vernardou, E. Koudoumas and N. Katsarakis, *Investigation of the Structural, Morphological and Photocatalytic Properties of ZnO Thin Films and Nanostructures Deposited by Different Chemical Routes*, presented in the XXIII Panhellenic Conference on Solid State Physics and Materials Science, NCSR Demokritos, Athens, September 23 - 26, 2007.
67. D. Vernardou, E. Stratakis, G. Kenanakis, H.M. Yates, S. Couris, M.E. Pemble, E. Koudoumas and N. Katsarakis, *Light-induced reversible hydrophilicity of hydrothermal grown TiO<sub>2</sub> films*, presented in the XXIII Panhellenic Conference on Solid State Physics and Materials Science, NCSR Demokritos, Athens, September 23 - 26, 2007.
68. K. Vlachou, G. Kalogerakis, D. Vernardou, E. Stratakis, G. Kenanakis, E. Koudoumas and N. Katsarakis, *Substrate and deposition time effect on the hydrothermally grown TiO<sub>2</sub> films*, presented in the XXIII Panhellenic Conference on Solid State Physics and Materials Science, NCSR Demokritos, Athens, September 23 - 26, 2007.
69. I. Tsiapa, N. Katsarakis, M. Kafesaki, G. Kenanakis, C.M. Soukoulis, and E.N. Economou, *Fishnet structure: The occurrence of left handed behavior over a wide range of geometrical parameters*, presented in the XXIII Panhellenic Conference on Solid State Physics and Materials Science, NCSR Demokritos, Athens, September 23 - 26, 2007.
70. Nikos Katsarakis, Maria Kafesaki, Irimi Tsiapa, George Kenanakis, Eleftherios N. Economou, Costas M. Soukoulis, Thomas Koschny, *Fishnet structure: the occurrence of left-handed behavior over a wide range of geometrical parameters*, presented in the European Materials Research Society (E-MRS) 2007 conference, Strasbourg, France, May 28 - June 1, 2007.
71. D. Vernardou, E. Stratakis, G. Kenanakis, E. Koudoumas and N. Katsarakis, *Hydrophilicity of ZnO nanostructures grown by aqueous chemical growth*, presented in the European Materials Research Society (E-MRS) 2007 conference, Strasbourg, France, May 28 - June 1, 2007.
72. D. Vernardou, G. Kenanakis, E. Koudoumas, G. Kiriakidis and N. Katsarakis, *Effect of Deposition Parameters on the Growth of Zinc Oxide Nanostructures Using Chemical Methods*, presented in the European Materials Research Society (E-MRS) 2007 conference, Strasbourg, France, May 28 - June 1, 2007.
73. I. Tsiapa, G. Kenanakis, S. Foteinopoulou, T. Gundogdu, R. Penciu, M. Kafesaki, N. Katsarakis, E. N. Economou, C. M. Soukoulis, *Left-Handed Electromagnetism in Composite Metamaterials and PC surfaces*, presented in the European Doctoral School on Metamaterials, Warsaw, Poland, May 7-9, 2007.
74. G. Kenanakis, S. Foteinopoulou, I. Tsiapa, T. Gundogdu, R. Penciu, M. Kafesaki, N. Katsarakis, E. N. Economou, C. M. Soukoulis, *Photonic crystals and left-handed materials in FORTH*, presented in the Phoremest 2007 conference, Marsalomas, Gran Canaria, Spain, May 2-4, 2007.
75. G. Kenanakis, D. Vernardou, E. Koudoumas, N. Katsarakis, *Nanostructures for Ozone sensing: Growth of ZnO on glass by Aqueous Chemical Growth technique*, presented in the 4th International Workshop on ZnO and Related Materials, Giessen, Germany, October 3-6, 2006.
76. G. Kenanakis, D. Vernardou, M. Sucheas, S. Christoulakis, E. Koudoumas, G. Kiriakidis, N. Katsarakis, *Ozone sensing properties of ZnO nanostructures grown by the aqueous chemical growth technique*, presented in the 1<sup>st</sup> International Symposium on Transparent Conductive Oxides (TCOs 2006), Hersonissos, Crete, Greece, October 23-25, 2006.
77. D. Vernardou, G. Kenanakis, S. Couris, E. Koudoumas, E. Kymakis, N. Katsarakis, *Initial studies of pH effect on growth of ZnO nanostructures by aqueous chemical growth*, presented in the 1<sup>st</sup> International Symposium on Transparent Conductive Oxides (TCOs 2006), Hersonissos, Crete, Greece, October 23-25, 2006.
78. G. Kenanakis, M. Androulidaki, E. Koudoumas, C. Savvakis, N. Katsarakis, *Photoluminescence of ZnO nanostructures grown by the aqueous chemical growth technique*, presented in the European Materials Research Society (E-MRS) 2006 conference, Nice, France, May 28 - June 1, 2006.

79. A. Myrilla, G. Kenanakis, *Bioremediation of Landfill Emissions - Case Studies*, presented in “*Bioremediation of contaminated Landfills*” meeting of Technical Chamber of Greece, Heraklion, Crete, Greece, June 20th, 2006.

### **Computer knowledge**

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- ❖ Operational systems: Excellent knowledge of Unix and of Windows.
- ❖ Excellent *knowledge of construction techniques; computer hardware and software, i.e., spreadsheets; and drafting software (AutoCAD, Microsoft Visio and Intergraph Microstation).*
- ❖ Excellent knowledge of technical and scientific software (*Origin, Mathematica, MathCAD, MATLAB*).
- ❖ Profound skills in interpreting field notes and diagrams, performing complex calculations, and in the use of AM/FM/GIS technology (*ArcView, MapInfo*).
- ❖ Excellent knowledge of image editing software (*Adobe Photoshop, Paint Shop Pro, Corel Photo Paint, CorelDRAW*); 3D modeling, animation, and rendering software (*3D Studio MAX*).
- ❖ Excellent knowledge of web design software (*Macromedia Dreamweaver, Macromedia Flash, Microsoft FrontPage, Microsoft Visual Studio NET*).
- ❖ In-depth knowledge of programming languages: Large experience with Fortran 77 and knowledge of Fortran 90, Python programming language.
- ❖ Deep knowledge of page layout and publishing software (*Adobe PageMaker, QuarkXpress*).
- ❖ In-depth knowledge of hardware development concepts, practices and procedures.
- ❖ Excellent knowledge of simulation and finite element analysis software (*CST Microwave Studio, Comsol MultiPhysics*).

### **Technical/Research skills**

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- ❖ Synthesis of metal oxide thin films and micro-/nano-structures using chemical techniques such as solution growth, sol-gel, spin-/dip coating *etc.*
- ❖ Materials' characterization using X-ray diffraction (XRD), FT-IR, Raman and UV-Vis spectroscopy, along with microscopy techniques (SEM and AFM).
- ❖ Electrical characterization of materials using Impedance spectroscopy, such as Seebeck Coefficient (Thermoelectric power) measurements, employing the so-called 2-probe, 4-probe and Van der Pauw techniques.
- ❖ Experimental study of linear characteristics of radio frequency (RF) components and devices, along with the analysis of signal integrity and materials measurement, using a vector Network analyzer.

## **Scientific community, Academy memberships, Reviewer**

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### ▪ **Organization of international conferences/schools**

01. July 2017: "Advances on Photocatalysis" (AdvPhotoCat-E 2017) - The 2nd International Workshop, Heraklion, Crete, Greece, July 14-16, 2017.
02. September 2014: "10th International Conference on Physics of Advanced Materials" (ICPAM-10), Iași, Romania, September 22-28, 2014.
03. September 2014: "1st Autumn School on Physics of Advanced Materials" (PAMS-1), Iași, Romania, September 22-28, 2014.
04. December 2010: "European School on Experimental Characterization of Electromagnetic Metamaterials", Heraklion, Greece, December 13-17, 2010.
05. June 2009: "The 8th International Conference on the Electrical, Transport and Optical Properties of Inhomogeneous Media" (ETOPIM8), Rethymnon, Crete, Greece, June 7-12, 2009.

### ▪ **Member of academic organizations**

- American Chemical Society, <http://www.acs.org/>
- American Physical Society, <http://www.aps.org/>
- Institute of Physics, <http://www.iop.org/>
- Optical Society of America, <http://www.osa.org/>
- Network of Researchers & Environmental Management, <http://natura.minenv.gr/natura/>
- Hellenic Solid Waste Management Association, <http://www.eedsa.gr/>
- Hellenic Association of Computers Scientists, <http://www.epy.gr/>
- Hellenic Green Chemistry Network, <http://www.chemistry.upatras.gr/hqcn/todiktyo.htm>
- Pan-Hellenic Association of Chemical Engineers, <http://www.psxm.org/>
- Technical Chamber of Greece, [http://portal.tee.gr/portal/page/portal/TEE\\_HOME](http://portal.tee.gr/portal/page/portal/TEE_HOME)
- Standing Committee on the environment, Technical Chamber of Greece, part of Eastern Crete (TEE/TAK): 2010-2013, <http://www.teetak.gr/>
- Standing Committee on research and new technologies, Technical Chamber of Greece, part of Eastern Crete (TEE/TAK): 2014-2017, <http://www.teetak.gr/>

### ▪ **Active reviewer for Funding Organizations**

- Czech Science Foundation (GAČR), Prague, Czech Republic
- Technology Foundation (STW), Netherlands
- King Fahd University of Petroleum & Minerals (KFUPM), Dhahran, Saudi Arabia
- Greek General Secretariat for Research and Technology (GSRT), Greece

### ▪ **Active reviewer at the following International Journals**

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| <ul style="list-style-type: none"><li>– Advanced Materials</li><li>– ACS Applied Materials &amp; Interfaces</li><li>– Carbon</li><li>– Applied Catalysis B: Environmental</li><li>– Applied Catalysis A: Chemistry</li><li>– Nanotechnology (IOPscience)</li><li>– Applied Physics Letters</li><li>– Chemical Engineering Journal</li><li>– Optical Materials Express</li><li>– Journal of Photochemistry and Photobiology A: Chemistry</li><li>– IEEE Photonics Journal</li><li>– Colloids and Surfaces A: Physicochemical and Engineering Aspects</li></ul> | <ul style="list-style-type: none"><li>– Surface and Coatings Technology</li><li>– Applied Physics A</li><li>– Applied Physics B</li><li>– Materials Letters</li><li>– Journal of Industrial and Engineering Chemistry</li><li>– Materials Science and Engineering B</li><li>– Microelectronic Engineering</li><li>– Journal of the Optical Society of America A</li><li>– Superlattices and Microstructures</li><li>– Crystal Research and Technology</li><li>– Journal of Advanced Oxidation Technologies</li><li>– International Journal of Smart and Nano Materials</li></ul> |
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