

# *Curriculum vitae*

**ELEFThERIOS K. AMANATIDES**

**FEBRUARY 2016**

## **Contents**

1. Personal Details .....	2
2. Education .....	2
A. B. Sc. ....	2
B. PhD .....	2
3. Working Experience.....	3
A. Research Associate.....	3
B. Teaching Appointment- Lecture Level .....	3
C. Teaching Appointment- Assistant Professor Level.....	4
D. Assistant Professor .....	4
4. Research topics.....	5
5. Personal Skills & Competences.....	6
A. Technical skills and competences .....	6
B. Computers skills and competences .....	6
C. Languages .....	7
D. Teaching Experience .....	7
6. Additional Information .....	9
A. Participation in Research Projects.....	9
B. Participation in Seminars.....	10
C. Other working experience .....	10
D. Scholarships - Invited lectures .....	10
E. Member of Associations .....	11
F. Reviewer .....	11
G. External Academic/Institution Collaborations.....	11
H. Member of Conference organizing committees.....	13
I. Member of Department Committees .....	14
K. Member of University Committees .....	14
7. Publications in SCI journals.....	15
8. References / h-index.....	19
9. Publications in Conference Proceedings .....	19
10. Announcements in Conferences/Workshops without Proceedings .....	24
11. Books .....	26
12. Patents.....	26

## 1. Personal Details

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Nationality	Greek
Born date	29/5/1972
Gender	Male

## 2. Education

### **A. B. Sc.**

Dates	1990-1995
Title of qualification awarded	B. Sc. in Chemistry
Name and type of organisation providing education and training	Dept. Of Chemistry, School of Physical Sciences, University of Ioannina, Greece
Level in national or international classification	Higher Education

### **B. PhD**

Dates	1996-2001
Title of qualification awarded	Optimization of Plasma Enhanced Chemical Vapor Deposition of microcrystalline silicon thin films in a variable frequency plasma reactor
Name and type of organisation	Dept. Of Chemical Engineering – Polytechnique

providing education and training	School – University of Patras, Greece
Level in national or international classification	Post Doctorate Level

### **3. Working Experience**

#### ***A. Research Associate***

Dates	2003 - 2011
Position	Research Associate
Main Activities & Responsibilities	<p>A. Co-supervision of PhD students</p> <p>B. Publications &amp; conferences announcements writing</p> <p>Γ. Management &amp; reporting of scientific projects</p> <p>Δ. Proposals submission of scientific projects for funding</p> <p>E. Development of new processes for deposition &amp; treatment of nanomaterials for different applications</p> <p>ΣΤ. Design and installation of new plasma reactors</p>
Name & address of the employer	Plasma Technology Lab. – Dept of Chemical Engineering – University of Patras – Greece
Type of activity	Research

#### ***B. Teaching Appointment- Lecture Level***

Dates	2003-2004
Position	Lecturer under appointment
Main Activities & Responsibilities	<p>Διδασκαλία μαθημάτων</p> <p>A. Process design and Economics</p> <p>B. Techno-economical Analysis</p>

Name & address of the employer	Dept of Chemical Engineering – University of Patras – Greece
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Type of activity	Independent teaching in undergraduate level
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***C. Teaching Appointment- Assistant Professor Level***

Dates	2004-2006
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Position	Assistant professor under appointment
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Main Activities & Responsibilities	Courses
	A. Simulation of Physical Processes
	B. Laboratory of numerical methods
	Γ. Design of Chemical Processes

Name & address of the employer	Dept of Chemical Engineering – University of Patras – Greece
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Type of activity	Independent teaching in undergraduate level
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***D. Assistant Professor***

Dates	2011 -
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Position	Assistant professor
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Main Activities & Responsibilities	Courses
	A. Organic Chemistry (UnderGraduate, 2 <sup>nd</sup> Semester)
	B. Biomaterials (UnderGraduate, 9 <sup>th</sup> Semester)
	C. Renewable Energy Sources (UnderGraduate, 10 <sup>th</sup> Semester)
	D. Alternative Energy Sources (PostGraduate)

Name & address of the employer	Dept of Chemical Engineering – University of Patras – Greece
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Type of activity	Independent teaching in undergraduate level
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## **4. Research topics**

- 1 Preparation methods of nanostructured materials. Plasma Enhanced Chemical Vapor Deposition (PECVD) of semiconductive amorphous and microcrystalline silicon for thin film photovoltaics, protective coatings (a-C:H και SiOx), hydrophobic teflon-like thin films (CFx) and nano-structured ceramic materials (YSZ) for fuel cells. Plasma etching and functionalization of polymeric and metallic substrates for biomedical applications. Deposition process optimization through the application of plasma diagnostics and modeling. Thin film characterization. Correlation of process parameters to the materials properties.

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- 2 Physical and chemical processes of low temperature plasmas for deposition and surface treatment of nanostructured materials (inorganic oxides, polymers). In – situ plasma electrical & spectroscopic (Laser Induce Fluorescence, Optical Emission Spectroscopy) measurements. Development of ultra fast in situ diagnostics for deposition process analysis and materials characterization. Design and installation of low and high density plasma reactors.

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- 3 Computational Fluid Dynamics (CFD) modeling of plasma deposition and surface treatment processes. Cost effective optimization and design of medium and large area reactors for thin film deposition

## **5. Personal Skills & Competences**

### ***A. Technical skills and competences***

#### **i. Plasma Diagnostics**

- 1 Temporally and Spatially Resolved Optical Emission Spectroscopy  
Laser Induced Fluorescence
- 2 Mass Spectrometry  
Voltage and current waveform measurements – Calculation of plasma
- 3 impedance and power dissipation
- 4 Laser Reflectance Interferometry

#### **ii. Thin film Characterization**

- 1 Laser Raman Spectroscopy
- 2 IR Spectroscopy
- 3 Atomic Force Microscopy – Scanning Probe Microscopy
- 4 Field Emission Scanning Electron Microscopy

### ***B. Computers skills and competences***

#### **OS**

- 1 Experience in IBM Compatible operation systems (Win95/98/Me, WinNT/2000/XP/7/8), MSOffice (Word, Excel, Access, MS Frontpage) and WinNT network.

#### **PC programming languages**

- 1 Fortran, C++

#### **Measurements and Automation Software**

- 1 FieldPoint 3
- 2 Labview 8.1
- 3 SIMATIC - SIEMENS

#### **Design software**

- 1 AutoCAD 2002
- 2 Visio Technical
- 3 CFD-GEOM
- 4 Gambit

#### **Computational Fluid Dynamics Software**

- 1 Fluent
- 2 CFDRC/CFDACE+
- 3 CHEMKIN

#### **Process Design and Techno Economical Analysis Software**

- 1 HYPROTECH - HYSYS 3.2
- 2 ASPEN TECH – ICARUS 12.2

#### **C. Languages**

- 1 Greek (born tongue)
- 2 English (first certificate in English-University of Cambridge). Excellent oral and writing skills

#### **D. Teaching Experience**

##### ***Assistant teaching (6) semesters as a PhD student***

- 1 Laboratory of numerical methods (1 semester)
- 2 Physical-Chemistry (Three (3) semesters)
- 3 Analytical Chemistry (two (2) semesters)

##### ***Teaching appointment – Lecturer (2 semesters)***

- 1 Process design and Economics
- 2 Techno-economical Analysis

##### ***Teaching appointment – Assistant Professor (4 semesters)***

- 1 Simulation of Physical Processes
- 2 Laboratory of numerical methods

3 Design of Chemical Processes

***Assistant Professor (4 semesters)***

1 Organic Chemistry

2 Biomaterials

3 Renewable Energy Sources

4 Alternative Energy Systems (MSc)



## **6. Additional Information**

### **A. Participation in Research Projects**

- 1 *"New and Enhanced Silicon Thin Film Solar Cells (NEST – JOULEIII)" 1997 – 1999*
- 2 *FP5 – "Development of an Optimised Integrated Thin-film silicon solar module (DOIT)" 2001-2004*
- 3 *FP5 – "Development Of Innovative Nanocomposites Coating for Magnesium Castings Protection (Nanomag)" 2002-2005*
- 4 *FP5 – "Amorphous Silicon Network (ASINET)" 2001-2004*
- 5 *FP5- "Plasma Technology Network (PlasmaTech)" 2002-2004*
- 6 *Pythagoras– "Enhancement of silicon thin film solar cells efficiency with microcrystalline silicon as i-layer" 2004-2006*
- 7 *GREECE-CHINA cooperation projects - "Deposition rate and % crystalline volume fraction optimization of plasma deposited microcrystalline silicon thin films through experimental and theoretical investigations" – 2005-2007*
- 8 *PENED 2003 – "Alteration of surface properties of natural and synthetic textiles with low and atmospheric pressure plasma" – 2005-2008*
- 9 *PENED 2003 – "Development of nano-structured electrodes and electrolytes for prototype solid state fuel cells" - 2005-2008*
- 10 *FP6 IP – "Advanced Thin Film Technologies for Cost Effective Photovoltaics (ATHLET)" 2006-2010*
- 11 *INTERREG IIIA, GREECE – ITALY «Development of a multidisciplinary scientific network for the investigation and application of biomaterials" 2006 -2008*
- 12 *HERAKLITUS II: «Deposition and characterization of nanocrystalline silicon for optoelectronic applications», 2010-2014*
- 13 *UPAT – ARCHER "Simulation of an industrial scale PECVD reactor for deposition of thin film solar modules", Industrial project 2011-2012*
- 14 *UPAT – OER "Plasma enhanced chemical vapor deposition of microcrystalline silicon from high density ecrw discharges" Industrial project 2011-2012*
- 15 *UPAT – AEC Inc" Simulation of Low Pressure Chemical Vapor Deposition Reactor for deposition of ZnO thin films", Industrial project 2011-2012*

- 16 EU FP7 "Demonstration of high performance Processes and equipments for thin film silicon photovoltaic modules produced with lower environmental impact and reduced cost and material use", 2010-2013
- 17 Title: " Catalytic Effect of Disiane Addition ", Industrial Project, Air Liquide – Patras, 2011-2013
- 18 THALIS, Title: " Design and fabrication of Robust super hydrophobic/hydrophilic surfaces and their application in the realization of “smart” microfluidic valves ", 2012-2015
- 19 EU FP7 - COST NETWORK MP1101: “Atmospheric Pressure Plasmas for Biomedical Applications” 2012-2016

### **B. Participation in Seminars**

- 1 Assistant in the greek national project entitled – «New Technologies in high school education» -*“Teaching chemistry with PC assistant” PATRAS – GREECE - 2000-2001*
- 2 Assistant in the greek national project EPEAK – *“Upgrade of post & undergraduate studies of Dep. Chemical Engineering – University of Patras” 2003- 2006. Design of virtual labs of physics & physical-chemistry*

### **C. Other working experience**

- 1 2003 & 2007 Research guest Institute of Photovoltaics - Thin Film Division (FZ-IPV), Jeulich, Germany: Installation of optical emission spectroscopy in a medium - scale plasma reactor for silicon thin film solar cells deposition
- 2 2003 & 2006 Research guest Institute of Microelectronic Technology (IMT), Neuchatel, Switzerland: Electrical measurements of medium - scale plasma reactor for solar cells deposition. Simulation of medium scale plasma reactor for silicon thin film solar cells deposition

### **D. Scholarships - Invited lectures**

- 1 1997 – 2001: Scholarship Dept. of Chemical Engineering – Un. of Patras
- 2 2003: Invited speaker in Institute of Photovoltaics - Thin Film Division (FZ-IPV), Jeulich, Germany
- 3 2004: TEOS/O<sub>2</sub> GAS PRESSURE AS A CHEMICAL COMPOSITION ADJUSTER OF PLASMA DEPOSITED SiO<sub>2</sub> THIN FILMS, 8th High temperature plasma processing symposium, EMRS, Strasburg, France, 29-2 May 2004
- 4 2006: Invited speaker in Institute of Microelectronic Technology (IMT), Neuchatel, Switzerland, “FLUID FLOW MODELLING OF MICROCRYSTALLINE SILICON PECVD PROCESSES”

- 5 2006: "PLASMA DIAGNOSTICS AND MODELLING FOR PECVD OF SILICON THIN FILMS" Seminar lectures, Institute of photo-electronics thin film devices and techniques of Nankai University, Tianjin, 300071, China, 28/1/2006
- 6 2008: Invited speaker in 10th European High Temperature Plasma Processes Conference, Nanocrystalline and amorphous silicon layers for cost effective - high power thin film solar modules"
- 7 2008: "Plasma Processing for bacteria repellence" 2nd School in Advanced Biomaterials" Bari, Italy 11-12/5/2008
- 8 2009: "Plasma deposition vs plasma processing of polymers for reduction of S. epidermidis adherence", "1st International Symposium on Antimicrobial Surfaces" St Gallen, Switzerland
- 9 2013: "Global Simulation of Plasma Deposition Processes: From Electron – Molecule Collisions to Film Growth and Structure" 18th International Summer School on Vacuum, electron and Ion Technologies, Sophia, Bulgaria 7-11/10/2013

### ***E. Member of Associations***

- 1 Association of Greek Chemists
- 2 Member IEEE of Plasma Science

### ***F. Reviewer***

Regular reviewer in journals

- 1 Thin Solid Films
- 2 Journal of Physics D: Applied Physics
- 3 Journal of Physics and Chemistry of Solids
- 4 Surface and Coatings Technology
- 5 IEEE Transactions of Plasma Science

### ***G. External Academic/Institution Collaborations***

- 1
 

Name	Dimitrios Mataras (current employer)
Position	Assoc. Professor
Address	Plasma Technology Lab. – Dept. of Chemical Engineering – University of Patras - Greece

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e-mail [evgog@imel.demokritos.gr](mailto:evgog@imel.demokritos.gr)

#### ***H. Member of Conference organizing committees***

1 Co-chair program scientific board, 1<sup>st</sup> International Symposium on Plasma  
Processing and Biomedical Applications - ISPPBA-1, 27-29/8/2008 Milos

2 Member of international scientific committee, 10th European High  
Temperature Plasma Processes Conference, Patras Greece 2010

### ***I. Member of Department Committees***

- 1 Responsible for the development, installation and operation of PV Plant in the roof of the department
- 2 Responsible for the writing of internal and external evaluation of the Department
- 3 Member of Building Committee

### ***K. Member of University Committees***

- 1 Director of the Center of Vocational Training of the University of Patras.  
Responsible for the development and organization of e-learning classes

## **7. Publications in SCI journals**

1. Comparative study of RF Reactive Magnetron Sputtering and Sol-gel deposition of UV induced Superhydrophilic TiO<sub>x</sub> thin films.  
V E Vrakatseli, E Amanatides and D Mataras  
Accepted to J. Phys.: Conf. Ser.
2. "Detection of powder formation in SiH<sub>4</sub>/H<sub>2</sub> glow discharges"  
G. Alexiou, G. Tsigaras, E. Amanatides, D. Mataras  
Accepted to J. Phys.: Conf. Ser.
3. "Measurement of intrinsic and laser heating-induced stress in microcrystalline silicon thin films"  
A.G. Kalampounias, E. Farsari, E. Amanatides, G. N. Papatheodorou, D. Mataras  
Accepted to Chem. Phys.
4. "THULIUM (Tm:YAG) LASER IN THE UPPER URINARY TRACT: DOES THE HEAT GENERATION IN THE IRRIGATION FLUID POSE A RISK? EVIDENCE FROM AN IN VIVO EXPERIMENTAL STUDY."  
Panagiotis Kallidonis, Wissam Kamal, Vasileios Panagopoulos, Marinos Vasilis, Lefteris Amanatides, IASON KYRIAZIS, Theofanis Vrettos, F Fligkou, EVANGELOS N LIATSIKOS  
Journal of Endourology. January 2016, ahead of print.
5. "Does the Heat Generation by the Thulium:Yttrium aluminum garnet Laser in the Irrigation Fluid Allow Its Use on the Upper Urinary Tract? An Experimental Study"  
Panagiotis Kallidonis, Lefteris Amanatides, Vasileios Panagopoulos, Iason Kyriazis, Theofanis Vrettos, Fotini Fligou, Wissam Kamal, Evangelos N. Liatsikos  
Journal of Endourology. December 2015, ahead of print.
6. "Practical silicon deposition rules derived from silane monitoring during plasma-enhanced chemical vapor deposition"  
Bartlome, R. , De Wolf, S., Demaurex, B., Ballif, C., Amanatides, E., Mataras, D.  
J. Appl. Phys., 117 (20) 2015, 203303
7. "Photoinduced superhydrophilicity of amorphous TiO<sub>x</sub>-like thin films by a simple room temperature sol-gel deposition and atmospheric plasma jet treatment"  
V E Vrakatseli, E Pagonis, E Amanatides and D Mataras  
2014 J. Phys.: Conf. Ser. 550 012034
8. "ECWR plasma enhanced chemical vapour deposition of microcrystalline silicon thin films"  
E Farsari, A G Kalampounias, E Amanatides and D Mataras  
2014 J. Phys.: Conf. Ser. 550 012031
9. "Influence of cw CO<sub>2</sub>-laser radiation on the amorphous-to-microcrystalline phase transition in a-Si:H film: A Raman spectroscopic study"  
Kalampounias A.G., Farsari E., Amanatides E., Mataras D., Papatheodorou G.N., (2014)  
Applied Physics A: Materials Science and Processing, 116 (1), pp. 303-310
10. "A hybrid kinetic Monte Carlo method for simulating silicon films grown by plasma-enhanced chemical vapor deposition"

Tsalikis D.G., Baig C., Mavrantzas V.G., Amanatides E. and Mataras D. S. (2013) Journal of Chemical Physics, 139 (20), 204706

11. "Liposomes adhesion to plasma deposited Acrylic Acid Thin Films"  
M. Kastelozos, S. Antimisaris, P. Klepetsanis, E. Farsari, E. Amanatides, D. Mataras, B.R. Pistillo, E. Sardella, P. Favia and R. d'Agostino  
*Colloids and Surfaces B: Biointerfaces*, 84 214 S (2011)
12. "Simulation of Cylindrical Electron Cyclotron Wave Resonance Argon Discharges"  
S. Sfikas, E. Amanatides, D. Mataras and D. Rapakoulias  
*J. Phys. D - Appl. Phys.*, 44 165204 (2011)
13. "Comparative study of plasma deposited fluorocarbon coatings on different substrates"  
E. Farsari, M. Kostopoulou, E. Amanatides, D. Mataras and D.E. Rapakoulias  
*J. Phys. D - Appl. Phys.*, 44 194007 (2011)
14. "Growth Kinetics of Plasma Deposited Microcrystalline Silicon Thin Films"  
E. Amanatides, and D. Mataras  
*Surf. Coat. Technol.* 205 178 (2011)
15. "Development of a hollow cathode plasma source for microcrystalline silicon thin films Deposition"  
P Dimitrakellis, E Amanatides, D Mataras and DE Rapakoulias  
(2011) *Journal of Physics: Conference Series* 275, 012014
16. "Diagnostics and Mechanistic Studies in Plasma Treatment of Polyester Textiles"  
M. Kostopoulou, E. Amanatides, and D. Mataras  
*J. Optoelectronic & Adv. Mater.* **10**, 2043 (2008)
17. "Staphylococcus epidermidis Adhesion to He, He/O<sub>2</sub> Plasma Treated PET Films and Aged Materials: Contributions of Surface Free Energy and Shear Rate"  
M. G. Katsikogianni, Ch. S. Syndrevelis, E. K. Amanatides, D. S. Mataras, Y. F. Missirlis  
*Colloids & Surfaces B: Biointerfaces* **65**, 257 (2008)
18. "Substrate holder biasing for improvement of microcrystalline silicon deposition process"  
X. D. Zhang, F. R. Zhang, E. Amanatides, D. Mataras, S. Z. Xiong, and Y. Zhao,  
*J. Non-Cryst. Solids*, **354**, 2208 (2008)
19. "Modelling and experiments of high-pressure VHF SiH<sub>4</sub>/H<sub>2</sub> discharges for higher microcrystalline silicon deposition rate"  
X. D. Zhang, F. R. Zhang, E. Amanatides, D. Mataras, and Y. Zhao,  
*Thin Solid Films* **516**, 6829 (2008)
20. "Effect of substrate bias on the Plasma Enhanced Chemical Vapor Deposition on microcrystalline silicon thin films"  
D. Zhang, F. R. Zhang, E. Amanatides, D. Mataras, and Y. Zhao  
*Thin Solid Films* **516**, 6912 (2008)
21. "Fluid Model of an Electron Cyclotron Wave Resonance Discharge"  
S. A. Sfikas, E. K. Amanatides, D. S. Mataras, D. E. Rapakoulias  
*IEEE Trans. Plasma Sci.* **35**, 1420 (2007)
22. "Improved Surface Energy Analysis for Plasma Treated PET Films"  
Daphne Papakonstantinou, Eleftherios Amanatides, Dimitrios Mataras, Vasilis Ioannidis, Panagiotis Nikolopoulos  
*Plasma Processes and Polymers*, Volume 4, Issue S1, Pages: S1057-S1062 (2007)



23. "Plasma Treated and a-C:H Coated PET Performance in Inhibiting Bacterial Adhesion",  
Maria G. Katsikogianni, Christos S. Syndrevelis, Eleftherios K. Amanatides, Dimitrios S. Mataras, Yannis F. Missirlis,  
*Plasma Processes and Polymers*, Volume 4, Issue S1, Pages: S1046-S1051 (2007)
24. "Plasma power and impedance measurement in silicon thin film deposition"  
D. Zhang, F. R. Zhang, E. Amanatides, D. Mataras, and Y. Zhao  
*Acta Physica Sinica* **56**, 5309 (2007) 5309
25. "Simulation of the electrical properties of SiH<sub>4</sub>/H<sub>2</sub> discharges"  
B. Lyka, E. Amanatides and D. Mataras  
*Jap. J. Appl. Phys.* **45**, 8172 (2006)
26. "Relative importance of hydrogen atom flux and ion bombardment to the growth of  $\mu$ -Si:H thin films"  
B. Lyka, E. Amanatides and D. Mataras  
*J. Non-Cryst. Solids* **352**, 1049 (2006)
27. "Effect of plasma parameters on the amorphous to microcrystalline silicon transition"  
E. Katsia, E. Amanatides, D. Mataras and D.E. Rapakoulias  
*Thin Solid Films* **511-512**, 285 (2006)
28. "Temperature Effect And Stress On Microcrystalline Silicon Thin Films Deposited Under High Pressure Plasma Conditions"  
E. Amanatides, E. Katsia, D. Mataras and A. Soto, G.A. Voyiatzis  
*Thin Solid Films* **511-512**, 603 (2006)
29. "Plasma 2D modeling and diagnostics of DLC deposition on PET"  
E. Amanatides, P. Gkotsis, Ch. Syndrevelis and D. Mataras  
*Diamond and Related Materials* **15**, 904 (2006)
30. "RF power and SiO<sub>x</sub>C<sub>y</sub>H<sub>z</sub> deposition efficiency in TEOS/O<sub>2</sub> discharges for the corrosion protection of magnesium alloys"  
Ch. Voulgaris, E. Amanatides, D. Mataras and S. Grassini, E. Angelini, F. Rosalbino  
*Surf. Coat. Technol.* **200**, 6618 (2006)
31. "Plasma surface treatment of polyethylene terephthalate films for bacterial repellence"  
E. Amanatides, D. Mataras and M. Katsikogianni, Y.F. Missirlis  
*Surf. Coat. Technol.* **200**, 6331 (2006)
32. "Power consumption effect on the microcrystalline silicon deposition process: A comparison between model and experimental results"  
Lyka, B., Amanatides, E., Mataras, D., Rapakoulias, D.E.  
(2005) *Journal of Physics: Conference Series* **10** (1), pp. 206-209
33. «On the effect of the substrate pretreatment parameters on the composition and structure of plasma deposited SiO<sub>2</sub> thin films»  
Voulgaris, Ch., Amanatides, E., Mataras, D., Rapakoulias, D.E.  
(2005) *Journal of Physics: Conference Series* **10** (1), pp. 198-201
34. «Interelectrode space effect on power dissipation and silicon oxide thin film growth from TEOS/O<sub>2</sub> discharges»  
Panou, A., Amanatides, E., Mataras, D., Rapakoulias, E.  
(2005) *Journal of Physics: Conference Series* **10** (1), pp. 202-205

35. "TEOS/O<sub>2</sub> gas pressure as a chemical composition adjuster of plasma deposited SiO<sub>2</sub> thin films"  
A. Panou , Ch. Voulgaris, E. Amanatides, D. Mataras and D.E. Rapakoulias  
*High Temp. Mat. Processes* **9**, 295 (2005)
36. "RF Power Effect on TEOS/O<sub>2</sub> PECVD of SiO<sub>2</sub> Thin Films"  
Ch. Voulgaris, E. Amanatides, D. Mataras  
*Surf. Coat. Technol.* **200**, 351 (2005)
37. "Plasma Emission Diagnostics for the Transition from Microcrystalline to Amorphous Silicon Solar Cells"  
E. Amanatides, D. Mataras, D. Rapakoulias, M. N. van den Donker, B. Rech  
*Sol. Energy Mater. Sol. Cells.* **87**, 795 (2005)
38. "Total SiH<sub>4</sub>/H<sub>2</sub> Pressure Effect on Microcrystalline Silicon Thin Films Growth and Structure"  
E. Katsia, E. Amanatides, D. Mataras, A. Soto, G.A. Voyiatzis  
*Sol. Energy Mater. Sol. Cells.* **87**,157 (2005)
39. "Electrical and optical properties of CH<sub>4</sub>/H<sub>2</sub> rf plasmas for diamond-like thin film deposition"  
E. Amanatides, B. Lykas, D. Mataras  
*Diam. Relat. Mater.* **14**, 292 (2005)
40. "Plasma Enhanced Chemical Vapor Deposition of Silicon under Relatively High Pressure Conditions"  
E. Amanatides, B. Lykas and D. Mataras  
*IEEE Trans. Plasma Sci.* **33**, 372 (2005)
41. "On the high pressure regime of microcrystalline silicon PECVD"  
E. Amanatides, A. Hammad, E. Katsia, and D. Mataras  
*J. Appl. Phys.* **97**, 073303 (2005)
42. "PECVD of Hydrogenated silicon thin Films from SiH<sub>4</sub>+H<sub>2</sub>+Si<sub>2</sub>H<sub>6</sub> Mixtures"  
A. Hammad, E. Amanatides, D. Mataras and D. E. Rapakoulias  
*Thin Solid Films* **451-452**, 255 (2004)
43. "The combined effect of electrode gap and radio frequency on power deposition and film growth kinetics in SiH<sub>4</sub>/H<sub>2</sub> discharges"  
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## **9. Publications in Conference Proceedings**

1. Comparative study of RF Reactive Magnetron Sputtering and Sol-gel deposition of UV induced Superhydrophilic TiO<sub>x</sub> thin films., V E Vrakatseli, E Amanatides and D Mataras, 19th International Summer School on Vacuum, electron and Ion Technologies, Sophia, Bulgaria 21-25/9/2015 **oral presentation**
2. "Detection of powder formation in SiH<sub>4</sub>/H<sub>2</sub> glow discharges", G. Alexiou, G. Tsigaras, E. Amanatides, D. Mataras, 19th International Summer School on Vacuum, electron and Ion Technologies, Sophia, Bulgaria 21-25/9/2015 **oral presentation**
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4. Gas kinetics and consumption in PECVD of hydrogenated silicon thin films  
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21. "Ultra Fast Time-Resolved Emission Measurements in the High Pressure Deposition Regime of Microcrystalline Silicon Thin Films" **Poster Presentation**  
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47. "Influence of the variation of interelectrode space on the deposition of microcrystalline silicon films in an asymmetric cell" **Poster Presentation**  
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## **10. Announcements in Conferences/Workshops without Proceedings**

1. "Global Simulation of Plasma Deposition Processes: From Electron – Molecule Collisions to Film Growth and Structure" E. Amanatides, 18th International Summer School on Vacuum, electron and Ion Technologies, Sophia, Bulgaria 7-11/10/2013 **Invited lecture**
2. "kMC simulation of microcrystalline silicon thin films growth"  
D. Tsalikis, Ch. Baig, V. G. Mavrantzas, E. Amanatides, and D. Mataras  
13th International Conference on Plasma Surface Engineering, Garmisch-Partenkirchen, Germany, September 2012 **Oral Presentation**
3. "Characterization of Yttria stabilized Zirconia thin films prepared by Plasma Enhanced MOCVD", S. Vogiatzis, N. Spiliopoulos, E. Amanatides, D. Mataras **Poster Presentation**  
13th International Conference on Plasma Surface Engineering, Garmisch-Partenkirchen, Germany, September 2012
4. "Progress on the comprehensive understanding of Si film structure and dynamics deposited on glass-substrates and Si-wafers by light scattering"  
A.G. Kalampounias, E. Farsari, E. Amanatides, D. Mataras **Poster Presentation**  
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5. "Time resolved plasma diagnosis of high pressure H<sub>2</sub> and SiH<sub>4</sub>/H<sub>2</sub> discharges"  
E. Amanatides and D. Mataras **Oral Presentation**  
63rd Gaseous Electronics Conference and 7th International Conference on Reactive Plasmas, Paris, France October 2010
6. "Nanocrystalline and amorphous silicon layers for cost effective - high power thin film solar modules" E. Amanatides, 10th European High Temperature Plasma Processes Conference, Patras Greece 2010 **Invited lecture**
7. "Plasma Modelling of Microcrystalline Silicon Deposition Process"  
E. Amanatides, S. Sfikas, D. Mataras, A. Salabas **Oral Presentation**  
63rd Gaseous Electronics Conference and 7th International Conference on Reactive Plasmas, Paris, France October 2010
8. "Plasma deposition vs plasma processing of polymers for reduction of S. epidermidis adherence", E. Amanatides, "1st International Symposium on Antimicrobial Surfaces" St Gallen, Switzerland 2009 **Invited lecture**



9. "Plasma Processing for bacteria repellence" E. Amanatides, 2nd School in Advanced Biomaterials" Bari, Italy 11-12/5/2008 **Invited lecture**
10. "Deposition of antibacterial silver coatings on textile surfaces for biomedical applications" M. Kostopoulou, E.Sardella, P. Favia , R. d'Agostino, E.Amanatides, D.Mataras  
1<sup>st</sup> International Symposium on Plasma Processing and Biomedical Applications - ISPPBA-1, 27-29/8/2008 Milos, Greece **Poster Presentation**
11. "Plasma deposited acrylic acid films on stainless steel substrates for medical applications" E. Farsari, E. Amanatides, D. Mataras  
1<sup>st</sup> International Symposium on Plasma Processing and Biomedical Applications - ISPPBA-1, 27-29/8/2008 Milos, Greece **Poster Presentation**
12. "Improved Surface Energy Analysis for Plasma Treated PET Films"  
D. Papakonstantinou, E. Amanatides, D. Mataras, V. Ioannidis, P. Nikolopoulos  
10th International Conference on Plasma Surface Engineering, Garmisch-Partenkirchen, Germany, September 2006 **Poster Presentation**
13. "Plasma Treated and a-C:H Coated PET Performance in Inhibiting Bacterial Adhesion"  
M. G. Katsikogianni, Ch. S. Syndrevelis, E. K. Amanatides, D. S. Mataras, Y. F. Missirlis  
**Oral Presentation**  
10th International Conference on Plasma Surface Engineering, Garmisch-Partenkirchen, Germany, September 2006
14. "*Biasing of polymer substrates for effective plasma surface treatment*",  
E. Amanatides and D. Mataras  
In Proceedings of 16<sup>th</sup> International Conference of Reactive Plasmas, Sendai, Japan, February 2006 **Poster Presentation**

## **11. Books**

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2. "Modelling and Diagnostics of He Discharges for Treatments of Polymers". D. Mataras and E. Amanatides, in 'Advanced Plasma Technology' edited by F. Arefi-Khonsari, R. d'Agostino, P. Favia, H. Ikegami, Y. Kawai, N. Sato R. d' Agostino, Pietro Favia and Francesco Fracassi, J. Wiley VCH (2006).
3. "Plasma Impedance in Discharges" N. Spiliopoulos and E.Amanatides in Encyclopedia of Plasma Technology, Taylor & Francis, in press (2014)

## **12. Patents**

1. Application No./Patent No. 12306522.9-1508, Title: Microcrystalline Silicon Thin Film PECVD using hydrogen and Silane Mixtures, European Patent Office 5.12.12, V. Lahootun, A. Madec, E. Amanatides, D. Mataras, AIR LIQUIDE-UNIVERSITY OF PATRAS