

ΒΙΟΓΡΑΦΙΚΟ ΣΗΜΕΙΩΜΑ

Δημήτρης Ματαράς

ΤΜΗΜΑ ΧΗΜΙΚΩΝ ΜΗΧΑΝΙΚΩΝ ΠΑΝΕΠΙΣΤΗΜΙΟΥ ΠΑΤΡΩΝ

ΝΟΕΜΒΡΙΟΣ 2013

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A. Προσωπικά Στοιχεία:

Όνομα	:	Δημήτρης Σ. Ματαράς
Σημερινή Θέση	:	Καθηγητής, Πρόεδρος ΤΧΜ/ΠΠ
Τόπος γέννησης	:	Αθήνα
Ημερομηνία γέννησης	:	11/6/1956
Οικογενειακή κατάσταση	:	Έγγαμος, 3 παιδιά
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1976-1982	<i>Masters of Science:</i> Faculty of Chemical Engineering Polytechnica University of Timisoara <i>Βαθμός Πτυχίου:</i> Λίαν Καλώς, 8
1983-1985	<i>Στρατιωτική Θητεία:</i> Χημείο Πολεμικής Αεροπορίας, (202 Κρατικό Εργοστάσιο Αεροπλάνων)
1985-1990	<i>Διδακτορική διατριβή:</i> 1985-1990 Τμήμα Χημικών Μηχανικών, Πανεπιστήμιο Πατρών. Μεταπτυχιακός Υπότροφος ΕΙΧΗΜΥΘ/ΙΤΕ <i>Βαθμός Πτυχίου:</i> Άριστα
1990-1992	Μεταδιδακτορικός Ερευνητής ΕΙΧΗΜΥΘ/Τμήμα Χημικών Μηχανικών Πανεπιστημίου Πατρών
1992-1999	Ειδικός Επιστήμονας (Π. Δ. 407) Τμήμα Χημικών Μηχανικών, Πανεπιστήμιο Πατρών
1999-2005	<i>Επίκουρος Καθηγητής</i> Τμήμα Χημικών Μηχανικών, Πανεπιστήμιο Πατρών
2005-2011	<i>Αναπληρωτής Καθηγητής</i> Τμήμα Χημικών Μηχανικών, Πανεπιστήμιο Πατρών
2011-	<i>Καθηγητής</i> Τμήμα Χημικών Μηχανικών, Πανεπιστήμιο Πατρών

B. Περιοχές Επιστημονικού Ενδιαφέροντος:

- Διεργασίες παραγωγής άμορφων και μικροκρυσταλλικών λεπτών υμενίων πυριτίου με κύρια εφαρμογή τις φωτοβολταϊκές κυψελίδες. Διεργασίες εναπόθεσης με πλάσμα άλλων λεπτων υμενίων (SiO_x, DLC, CF_x, YSZ) και επεξεργασία επιφανειών με πλάσμα για διάφορες τεχνολογικές εφαρμογές. Βελτιστοποίηση των διεργασιών εναπόθεσης/επεξεργασίας με την χρήση διαγνωστικών μεθόδων και την συσχέτιση παραμέτρων της εναπόθεσης με τα χαρακτηριστικά των φιλμ.
- Φυσική και χημεία πλάσματος χαμηλής πίεσης. Σχεδιασμός και μοντελοποίηση διεργασιών πλάσματος. Ηλεκτρικός χαρακτηρισμός και μετρήσεις ισχύος σε rf πλάσμα. Φασματοσκοπία φθορισμού με Laser. Χωρικά και χρονικά διακεκριμένη φασματοσκοπία εκπομπής.

Γ. Ερευνητικά Προγράμματα:

Μέχρι την εκλογή σε θέση Επ. Καθηγητή (1999):

- Plasma Deposition Systems for Photovoltaic Quality Amorphous Hydrogenated Silicon and Alloys. Plasma Diagnostics and Materials Characterization. (JOULE) 90-92.
- New and more stable amorphous silicon based materials for photovoltaics. (JOULEII) 92-94.
- Ανάπτυξη έμπειρων συστημάτων ανάλυσης εικόνων μικροσκοπίου.(ΜΟΠ) 92-93.
- Higher Efficiency through decreased Light Induced degradation and Optimization of amorphous Silicon (HELIOS). (JOULEII) 94-96.
- Εναπόθεση Diamond-Like Carbon σε χάλυβες κοπής (ΠΕΝΕΔ). 96-98.
- New and Enhanced Silicon Thin-Film Solar Cells (NEST). (JOULEIII) 97-99.

Μετά την εκλογή σε θέση Επ. Καθηγητή (1999), Επιστ. Υπεύθυνος στα ακόλουθα προγράμματα:

	Project Name	Programme	Duration	Budget Κ€
1	Development of an Optimized Integrated Thin film silicon solar module (DOIT) (Coordinator)	ENERGY	2001-2004	370
2	European network on amorphous silicon device technology (α-SiNeT)	GROWTH	2001-2004	70
3	Επεξεργασία Πολυμερικών Επιφανειών με Πλάσμα Χαμηλής Πίεσης	Καραθεοδωρή	2001-2004	17
4	Development of Innovative Nanocomposite Coatings for Magnesium Casting Protection (NanoMag)	GROWTH	2002-2005	360
5	PLASMATECH	GROWTH	2002-2005	19
6	Αναμόρφωση ΠΠΣ του ΤΧΜ/ΠΠ	ΕΠΕΑΕΚ	2003-2006	(220)
7	Ενίσχυση Ενεργειακής Απόδοσης Φωτοβολταϊκών Κελιών Λεπτών Υμενίων με την Χρήση Ενδογενούς Στοιβάδας Μικροκρυσταλλικού Πυριτίου.	ΠΥΘΑΓΟΡΑΣ	2004-2007	60
8	Advanced Thin film technologies for cost effective Photovoltaics (ATHLET-PV)	FP6 IP	2005-2009	193
9	Deposition Rate and % Crystalline Volume Fraction Optimization of Plasma Deposited Microcrystalline Silicon Thin Films and Solar Cells through Experimental and Theoretical Investigations	Ελλάδα-Κίνα	2005-2008	18
10	Μεταβολή επιφανειακών ιδιοτήτων φυσικών και συνθετικών υφασμάτων με πλάσμα χαμηλής και ατμοσφαιρικής πίεσης	ΠΕΝΕΔ 2004	2005-2008	33,7

	Project Name	Programme	Duration	Budget Κ€
11	Ανάπτυξη αναδομημένων ηλεκτροδίων και ηλεκτρολυτών για καινοτόμες διατάξεις κυψελίδων καυσίμου στερεού ηλεκτρολύτη	ΠΕΝΕΔ 2004	2005-2008	32
12	Παρασκευή Έξυπνων Κεραμικών Υλικών	ΠΕΠ Δ.Ε.	2006-2008	103
13	Δημιουργία πολυδιάστατου επιστημονικού δικτύου για την ανάπτυξη και την εφαρμογή βιοϋλικών	INTERREG III	2006-2008	663,85
14	Microcrystalline silicon deposition process enhancement using high density ECWR plasma sources	OC Oerlikon Balzers AG	2008-2009	10
15	ECWR Deposition of Nanocrystalline Silicon	Oerlikon Solar Ltd.	2009-2011	40
16	Εναπόθεση και χαρακτηρισμός νανοδομημένου πυριτίου για οπτοηλεκτρονικές εφαρμογές	ΗΡΑΚΛΕΙΤΟΣ	2010 - 2014	60
17	Demonstration of high performance processes and equipment for thin film silicon photovoltaic modules produced with lower environmental impact and reduced cost and material use (PEPPER)	FP7	2010-2013	944,4
18	Simulation of Industrial Scale PECVD reactor for thin film Silicon photovoltaics	ARCHERS INC	2011-2012	56
19	Catalytic Effect of Disilane Addition	Air Liquide	2011-2012	105
20	Σχεδιασμός και Κατασκευή Σταθερών Υπερ-Υδροφοβων/Υδροφιλων Επιφανειών και Χρήση Αυτών στην Υλοποίηση Μικρορευστομηχανικών Βαλβίδων	ΘΑΛΗΣ	2012-2015	180
21	Next Generation Low Cost Thin Film Silicon Solar Panels with Improved High Energy Yield (N-Genesis)	ΣΥΝΕΡΓΑΣΙΑ 2012	2013-	960

Τα ποσά που αναφέρονται αφορούν αποκλειστικά το εργαστήριο

Δ. Δημοσιεύσεις – Εργασίες:

Δ₁ Διεθνή Επιστημονικά Περιοδικά Με Κριτές:

- A hybrid kinetic Monte Carlo method for simulating silicon films grown by plasma-enhanced chemical vapor deposition**
 D.G. Tsalikis, C. Baig , V.G. Mavrantzas , E. Amanatides and D.S. Mataras
Journal of Chemical Physics, Article in Press (2013)
- Influence of cw CO₂-laser radiation on the amorphous-to-microcrystalline phase transition in a-Si:H film: A Raman spectroscopic study**
 A.G. Kalampounias, E. Farsari, E. Amanatides, D. Mataras, G.N. Papatheodorou
Applied Physics A, Article in Press (2013)
- Liposomes adhesion to plasma deposited Acrylic Acid Thin Films**
 M. Kastelorz, S. Antimisiaris, 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)
- 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)

5. **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)
6. **Growth Kinetics of Plasma Deposited Microcrystalline Silicon Thin Films**
E. Amanatides, and D. Mataras
Surf. Coat. Technol. 205 178 (2011)
7. **Diagnostics and Mechanistic Studies in Plasma Treatment of Polyester Textiles**
M. Kostopoulou, E. Amanatides, and D. Mataras
J. Optoelectronic & Adv. Mater. **10**, 2043 (2008)
8. **Study of the optical and electrical properties of plasma for the deposition of microcrystalline silicon**
X. D. Zhang, F. R. Zhang, E. Amanatides, D. Mataras, S. Z. Xiong, and Y. Zhao
Acta Physica Sinica **57**, 3022 (2008)
9. **Staphylococcus epidermidis Adhesion to He, He/O₂ 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)
10. **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)
11. **Modelling and experiments of high-pressure VHF SiH₄/H₂ 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)
12. **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)
13. **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)
14. **Improved Surface Energy Analysis for Plasma Treated PET Films**
D. Papakonstantinou, E. Amanatides, D. Mataras, V. Ioannidis, P. Nikolopoulos
Plasma Processes and Polymers **4**, S1057-S1062 (2007)
15. **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 **4**, S1046-S1051 (2007)
16. **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
17. **Simulation of the electrical properties of SiH₄/H₂ discharges**
B. Lyka, E. Amanatides and D. Mataras
Jap. J. Appl. Phys. **45**, 8172 (2006)

- 18. Relative importance of hydrogen atom flux and ion bombardment to the growth of $\mu\text{-Si:H}$ thin films**
B. Lyka, E. Amanatides and D. Mataras
J. Non-Cryst. Solids **352**, 1049 (2006)
- 19. 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)
- 20. 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)
- 21. 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)
- 22. Plasma deposited SiO_x coatings for the corrosion protection of aluminum and magnesium alloys**
Ch. Voulgaris, E. Amanatides, D. Mataras and S. Grassini, E. Angelini, F. Rosalbino
Surf. Coat. Technol. **200**, 6618 (2006)
- 23. 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)
- 24. TEOS/ O_2 gas pressure as a chemical composition adjuster of plasma deposited SiO_2 thin films**
A. Panou, Ch. Voulgaris, E. Amanatides, D. Mataras and D.E. Rapakoulias
High Temp. Mat. Processes **9**, 295 (2005)
- 25. RF Power Effect on TEOS/ O_2 PECVD of SiO_2 Thin Films**
Ch. Voulgaris, E. Amanatides, D. Mataras
Surf. Coat. Technol. **200**, 351 (2005)
- 26. 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)
- 27. Total SiH_4/H_2 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)
- 28. Electrical and optical properties of CH_4/H_2 rf plasmas for diamond-like thin film deposition**
E. Amanatides, B. Lykas, D. Mataras
Diam. Relat. Mater. **14**, 292 (2005)
- 29. 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)
- 30. On the high pressure regime of microcrystalline silicon PECVD**
E. Amanatides, A. Hammad, E. Katsia, and D. Mataras
J. Appl. Phys. **97**, 073303 (2005)

- 31. Exploration of the Deposition Limits of microcrystalline Silicon**
D. Mataras
Pure Appl. Chem. **77**, 379 (2005)
- 32. PECVD of Hydrogenated silicon thin Films from SiH₄+H₂+Si₂H₆ Mixtures**
A. Hammad, E. Amanatides, D. Mataras and D. E. Rapakoulias
Thin Solid Films **451-452**, 255 (2004)
- 33. The combined effect of electrode gap and radio frequency on power deposition and film growth kinetics in SiH₄/H₂ discharges**
E. Amanatides, D. Mataras, D. E. Rapakoulias
J. Vac. Sci. Technol. A **20**, 68 (2002)
- 34. On the effect of frequency in the deposition of microcrystalline silicon from silane discharges**
E. Amanatides, D. Mataras, D. E. Rapakoulias
J. Appl. Phys. **90**, 5799 (2001)
- 35. Gas-phase and surface kinetics in Plasma Enhanced Chemical Vapor Deposition of microcrystalline silicon**
E. Amanatides, S. Stamou, D. Mataras
J. Appl. Phys. **90**, 5786 (2001)
- 36. Treatment of Polyethylene Terephthalate in a Helium glow-discharge**
D-D. Papakonstantinou, D. Mataras, F. Arefi-Khonsari
J. Phys. IV. **11**, Pr3-357 (2001)
- 37. Electron impact silane dissociation and deposition rate relationship in the Plasma Enhanced Chemical Vapor Deposition of microcrystalline silicon thin films**
E. Amanatides, D. E. Rapakoulias, D. Mataras
J. Phys. IV. **11**, Pr3-715 (2001)
- 38. Effect of double-layer formation on the deposition of microcrystalline silicon films in hydrogen diluted silane discharges**
A. Hammad, E. Amanatides, D. E. Rapakoulias, D. Mataras.
J. Phys. IV. **11**, Pr3-779 (2001)
- 39. Frequency variation under constant power conditions in RF hydrogen discharges**
E. Amanatides, D. Mataras
J. Appl. Phys. **89**, 1556 (2001)
- 40. Deposition rate optimization in SiH₄/H₂ PECVD of hydrogenated microcrystalline silicon**
E. Amanatides, D. Mataras and D.E. Rapakoulias
Thin Solid Films **383** 15 (2001)
- 41. Effect of the interelectrode space on properties of SiH₄ deposition discharges operating at different Radio-Frequencies**
E. Amanatides, D. Mataras and D.E. Rapakoulias
High Temp. Mat. Processes **4**, 563 (2000)
- 42. About rotational temperature measurements and thermodynamic equilibrium in rf glow-discharges**
S. Stamou, D. Mataras, D.E. Rapakoulias
High Temp. Mat. Processes **3**, 39 (1999)

43. **Spatial distribution of optical emission in silane/hydrogen rf discharges**
S. Stamou, E. Amanatides, D. Mataras
High Temp. Mat. Processes **3**, 255 (1999)
44. **Spatial rotational temperature and emission intensity profiles in silane plasmas**
S. Stamou, D. Mataras, D.E. Rapakoulias
J. Phys. D: Appl. Phys. **31**, 2513 (1998)
45. **Improvements in control and understanding of radio frequency silane discharges**
D. Mataras, D.E. Rapakoulias
High Temp. Mat. Processes **1**, 383-391 (1997)
46. **Arrhenius like behavior in plasma reactions**
N. Spiliopoulos, D. Mataras, D.E. Rapakoulias
Appl. Phys. Lett. **71**, 605 (1997)
47. **Influence of discharge geometry on power dissipation and sheath impedances in silane discharges**
N. Spiliopoulos, D. Mataras, D.E. Rapakoulias
Jap. J. Appl. Phys. **36**, 66 (1997)
48. **Simulation of the SiH ($A^2\Delta - X^2\Pi$) emission spectrum in a silane glow discharge and derivation of an improved set of molecular constants**
S. Stamou, D. Mataras, D.E. Rapakoulias
Chemical Physics **218**, 57 (1997)
49. **Kinetics of power deposition and silane dissociation in radio frequency discharges**
N. Spiliopoulos, D. Mataras, D.E. Rapakoulias
J. Electrochem. Soc. **144**, 634 (1997)
50. **Effective capture rates of carriers in amorphous hydrogenated silicon**
P. Kounavis, D. Mataras, D.E. Rapakoulias
J. Appl. Phys. **80**, 2305 (1996)
51. **Power dissipation and impedance measurements in radio frequency discharges**
N. Spiliopoulos, D. Mataras, D.E. Rapakoulias
J. Vac. Sci. Technol. A **14**, 2757 (1996)
52. **Dilution enhanced radical generation in Silane Glow Discharges**
D. Mataras, F. Coutelieris, P. Kounavis, D.E. Rapakoulias
J. Phys. D: Appl. Phys. **29**, 2452 (1996)
53. **Influence of plasma conditions on the defect formation mechanism in amorphous hydrogenated silicon**
P. Kounavis, D. Mataras, N. Spiliopoulos, E. Mytilineou and D. Rapakoulias
J. Appl. Phys. **75**, 1599 (1994)
54. **Heterogeneous catalysis in interaction of plasma excited species with surfaces**
D. E. Rapakoulias, S. Cavadias, and D. Mataras
High Temp. Chem. Processes **2**, 231 (1993)
55. **Power dissipation mechanisms in rf driven silane discharges, the influence of discharge geometry**
D. Mataras, S. Cavadias, D. Rapakoulias
J. Vac. Sci. Technol. **11**, 664 (1993)
56. **Chemical reactors in plasma environment. A new route in chemistry**
D.E. Rapakoulias and D.S. Mataras
High Temp. Chem. Processes, **1**, 485 (1992)

57. **Plasma Enhanced CVD of amorphous hydrogenated silicon investigated by optical diagnostics”**
D. Mataras, and D.E. Rapakoulias
Materials and Manufacturing Processes **7**, 561 (1992)
58. **Nitrogen ion dynamics in low-pressure nitrogen plasma and plasma sheath**
D. E. Gerassimou, S. Cavadias, D Mataras and D.E. Rapakoulias
J. Appl. Phys. **67**, 146 (1990)
59. **Spatial generation profiles of active radicals in plasma-enhanced CVD of a-Si:H**
D. Mataras, S. Cavadias, D. Rapakoulias
Mat. Res. Symp. Proc. **165**, 55 (1990)
60. **Spatial profiles of reactive intermediates in rf silane discharges**
D. Mataras, S. Cavadias, D. Rapakoulias
J. Appl. Phys. **66**, 119 (1989)

Δ₂ Βιβλία/Κεφάλαια σε βιβλία:

1. “Diagnostics and modeling of SiH₄/H₂ plasmas for the deposition of microcrystalline silicon: the case of dual frequency sources” in “New Industrial plasma Technology”, edited by A. Matsuda et al. Wiley-VCH ISBN: 978-3-527-32544-3 (2010)
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. “Diagnostics of a-Si plasma processes”. G. Turban, B. Drevillon, D. Mataras, D. Rapakoulias, in ‘Plasma Deposition of Amorphous Silicon Based Materials’, edited by G. Bruno, P. Capezzuto, and A. Madan, Academic Press 1995, pp. 63-129.
4. “Optical and Electrical Diagnostics in low pressure plasmas”. D. Mataras and D.E. Rapakoulias, in ‘Plasma Treatment and Deposition of Polymers’ edited by R. d’ Agostino, Pietro Favia and Francesco Fracassi, Kluwer Academic Publishers 1997, pp.65-80.
5. “Προγραμματισμός για Επιστήμονες και Μηχανικούς, fortran 90/95”. Δ. Ματαράς, Φ. Κουτελιέρης, Εκδόσεις Τζιόλα Θεσσαλονίκη, ISBN 960-8050-43-X
Το βιβλίο χρησιμοποιείται ως διδακτικό βοήθημα σε πολλά τμήματα ΑΕΙ και ΤΕΙ.

Δ₃ Πρακτικά Διεθνών Συνεδρίων Με Κριτές:

1. *kMC simulation of microcrystalline silicon thin films growth*
D. Tsalikis, Ch. Baig, V. G. Mavrantzas, E. Amanatides, and D. Mataras
In Proceedings of the 13th International Conference on Plasma Surface Engineering, Garmisch-Partenkirchen, Germany, September 2012 **Oral Presentation**
2. *Characterization of Ytria stabilized Zirconia thin films prepared by Plasma Enhanced MOCVD*
S. Vogiatzis, N. Spiliopoulos, E. Amanatides, D. Mataras
In Proceedings of the 13th International Conference on Plasma Surface Engineering, Garmisch-Partenkirchen, Germany, September 2012

3. *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
In Proceedings of the 13th International Conference on Plasma Surface Engineering, Garmisch-Partenkirchen, Germany, September 2012
4. *Hierarchical simulation of microcrystalline silicon thin films growth and structure*
D. Tsalikis, Ch. Baig, V. G. Mavrantzas, E. Amanatides, and D. Mataras
In Proceedings of the 27th European Photovoltaic Solar Energy Conference, Hamburg, Germany, September 2012
5. *Post Oxidation Effects Of High Rate Microcrystalline Silicon Grown By Pecvd For Solar Cell Applications*
Filippos Farmakis, Ergina Farsari, Angelos Kalampounias, Eleftherios Amanatides, Dimitrios Mataras, Nikolaos Georgoulas
In Proceedings of the 27th European Photovoltaic Solar Energy Conference, Hamburg, Germany, September 2012
6. *Pressure and flow effect on silane consumption and depletion in microcrystalline silicon deposition process*
E. Amanatides, S. Sfikas, D. Mataras, R. Bartlome, G. Bugnon, F. Sculati-Meillaud, G. Parascandolo, Ch. Ballif
In Proceedings of the 27th European Photovoltaic Solar Energy Conference, Hamburg, Germany, September 2012
7. *Light scattering from hydrogenated microcrystalline silicon deposited on glass-substrates after cw CO₂-laser irradiation*
G. Kalampounias, E. Farsari, E. Amanatides and D. Mataras
In Proceedings of the 27th European Photovoltaic Solar Energy Conference, Hamburg, Germany, September 2012
8. *Usage of Si₂H₆ for Si TF PECVD at Enhanced Deposition Rate*
V. Lahootun, F. Coeuret, A. Madec, P. Dimitrakellis, N. Spiliopoulos, E. Amanatides and D. Mataras
In Proceedings of the 26th European Photovoltaic Solar Energy Conference, Valencia, Spain, September 2011
9. *Simulation of Plasma Enhanced Chemical Vapor Deposition of Microcrystalline Silicon Thin Films in an industrially relevant plasma reactor*
E. Amanatides, D. Mataras, A. Salabaş
In Proceedings of the 26th European Photovoltaic Solar Energy Conference, Valencia, Spain, September 2011
10. *Time resolved plasma diagnosis of high pressure H₂ and SiH₄/H₂ discharges*
E. Amanatides and D. Mataras **Oral Presentation**
In Proceedings of 63rd Gaseous Electronics Conference and 7th International Conference on Reactive Plasmas, Paris, France October 2010

11. *Plasma Modelling of Microcrystalline Silicon Deposition Process*
E. Amanatides, S. Sfikas, D. Mataras, A. Salabas **Oral Presentation**
In Proceedings of 63rd Gaseous Electronics Conference and 7th International Conference on Reactive Plasmas, Paris, France October 2010
12. *Nucleation and growth kinetics of plasma deposited microcrystalline silicon thin films*
E. Amanatides and D. Mataras **Oral Presentation**
In Proceedings of the 25th European Photovoltaic Solar Energy Conference, Valencia, Spain, September 2010
13. *Development of a hollow cathode plasma source for microcrystalline silicon deposition*
P. Dimitrakellis, E. Amanatides, D. Mataras, D. Rapakoulias
In Proceedings of 11th High-Tech Plasma Processes Conference, Brussels, Belgium June 2010 **Oral Presentation**
14. *Ultra Fast Time-Resolved Emission Measurements in the High Pressure Deposition Regime of Microcrystalline Silicon Thin Films*
E. Amanatides, D. Mataras, X.D. Zhang, F. Zhang and Y. Zhao
In Proceedings of the 23rd European Photovoltaic Solar Energy Conference, Valencia, Spain, September 2008
15. *Plasma modeling and diagnostics for the prediction of structural changes on silicon thin film deposition*
E. Amanatides, A. Feltrin, G. Bugnon, F. Meillaud, C. Ballif, and D. Mataras
In Proceedings of the 23rd European Photovoltaic Solar Energy Conference, Valencia, Spain, September 2008
16. *Dual frequency plasma source for microcrystalline silicon thin film deposition*
E. Amanatides, D. Mataras, X.D. Zhang, F. Zhang and Y. Zhao
In Proceedings of the 22nd European Photovoltaic Solar Energy Conference, Milan, Italy, September 2007
17. *Process drifts modeling during the initial growth stage of microcrystalline silicon thin films*
E. Amanatides and D. Mataras
In Proceedings of the 24th European Photovoltaic Solar Energy Conference, Hamburg, Germany, September 2009
18. *Development of a fluid code for rapid simulation of high-density ECWR plasmas*
S. Sfikas, E. Amanatides, D. Mataras
In proceedings of 19th International Symposium on Plasma Chemistry, Bochum, Germany, July 2009 **Oral Presentation**
19. *Plasma deposited fluorocarbon thin films for the protection of ceramic building materials*
E. Farsari, E. Amanatides and D. Mataras
In proceedings of 19th International Symposium on Plasma Chemistry, Bochum, Germany, July 2009
20. *Modified plasma walls boundary conditions for fast simulation of ECWR plasmas*
S. Sfikas, E. Amanatides, D. Mataras, D. E. Rapakoulias
14th High Technology Plasma Conference" 7-11/2008 Patras, Greece **Oral Presentation**
21. *Deposition of antibacterial silver coatings on textile surfaces for biomedical applications*
M. Kostopoulou, E. Sardella, P. Favia, R. d'Agostino, E. Amanatides, D. Mataras
1st International Symposium on Plasma Processing and Biomedical Applications - ISPPBA-1, 27-29/8/2008 Milos, Greece (poster presentation)

22. *Plasma deposited acrylic acid films on stainless steel substrates for medical applications*
E. Farsari, E. Amanatides, D. Mataras
1st International Symposium on Plasma Processing and Biomedical Applications - ISPPBA-1, 27-29/8/2008 Milos, Greece (poster presentation)
23. *Improved Surface Energy Analysis for Plasma Treated PET Films*
D. Papakonstantinou, E. Amanatides, D. Mataras, V. Ioannidis, P. Nikolopoulos
Plasma Processes and Polymers, **4**, S1057
24. *Plasma Treated and α -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**
Plasma Processes and Polymers, **4**, S1046
25. *Ageing effect of He and He/O₂ Plasma Treated PET Thin Films on Bacterial (*S. epidermidis*) Adhesion* **Oral Presentation**
M. Katsikogianni, Y.F. Missirlis, E. Amanatides, D. Mataras, V. Ioannidis and P. Nikolopoulos, In Proceedings of the 13th Biomaterials conference, September 2006
26. *Biasing of polymer substrates for effective plasma surface treatment*
E. Amanatides and D. Mataras
In Proceedings of 16th International Conference of Reactive Plasmas, Sendai, Japan, February 2006
27. *Bacterial (*S. epidermidis*) Adhesion to Various Oxygen Plasma Treated Polyethylene Terephthalate Thin Films* **Oral Presentation**
M. Katsikogianni, Y.F. Missirlis, E. Amanatides, D. Mataras, V. Ioannides and P. Nikolopoulos
In Proceedings of the 12th Biomaterials conference, September 2005
28. *Alternative Methods for the Enhancement of Plasma Deposited Microcrystalline Silicon Growth Rate*
A. Hammad, E. Amanatides, D. Mataras and D. E. Rapakoulias **Oral Presentation**
In proceedings of the Chem. Engineering Conference, Jordan, September 2005
29. *Experimental and theoretical investigation of PECVD of microcrystalline silicon thin films prepared close to the amorphous silicon growth*
E. Amanatides, D. Mataras, B. Lyka, E. Katsia and D. E. Rapakoulias **Plenary Presentation**
In proceedings of the 20th European Photovoltaic Solar Energy Conference, Barcelona, Spain, June 2005
30. *On the effect of the substrate pretreatment parameters on the composition and structure of plasma deposited SiO₂ thin films*
Ch. Voulgaris, A. Panou, E. Amanatides, D. Mataras and D. E. Rapakoulias
2nd Conference on Microelectronics Microsystems and Nanotechnology, Athens 2004
J. Phys.C **10**, 206 (2005)
31. *Power consumption effect on the microcrystalline silicon deposition process: A comparison between model and experimental results*
B. Lyka, E. Amanatides, D. Mataras and D. E. Rapakoulias
2nd Conference on Microelectronics Microsystems and Nanotechnology, Athens, 2004
J. Phys. C **10**, 198 (2005)
32. *Interelectrode space effect on power dissipation and silicon oxide thin film growth from TEOS/O₂ discharges*
A. Panou, E. Amanatides, D. Mataras and D. E. Rapakoulias
2nd Conference on Microelectronics Microsystems and Nanotechnology, Athens 2004
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33. *High Pressure Silane Depletion Technique as $\mu\text{-Si:H}$ Deposition Rate Promoter-Advantages and Limitations*
E. Katsia, E. Amanatides, D. Mataras, D. Rapakoulias
in proc. '19th European PV Solar Energy Conference (EPVSEC)', Paris 2004, p. 1601.
34. *2D self – consistent modeling of microcrystalline silicon deposition process*
B. Lykas, E. Amanatides, D. Mataras. **Oral Presentation**
in proc. '19th European PV Solar Energy Conference (EPVSEC)', Paris 2004, p. 1395.
35. *Etch rate measurement of Polyethylene Terephthalate films treated in Helium and Helium-Oxygen RF discharges*
D.D. Papakonstantinou, E. Amanatides and D. Mataras. **Oral Presentation**
in proc. '16th International Symposium on Plasma Chemistry (ISPC)', Taormina 2003.
36. *Electrical and Optical Characterization of Highly Diluted Silane and Disilane in Hydrogen RF discharges*
A. Hammad, E. Amanatides, D. Mataras and D. E. Rapakoulias.
in proc. '16th International Symposium on Plasma Chemistry (ISPC)', Taormina 2003.
37. *Net total pressure effect on the growth rate of hydrogenated microcrystalline silicon thin films*
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38. *a-SiNet: the European Network on amorphous silicon device technology*
J. Carabe, M. Schubert, D. Mataras, J. Andreu, F. Roca, D. Pribat
in proc. '3rd World Conference on Photovoltaic Energy Conversion', Osaka 2003, p. 1808.
39. *Combination of Plasma Diagnostics and Modelling for the Investigation of Microcrystalline Silicon Deposition*
E. Amanatiudes, D. Mataras, D. Rapakoulias. **Oral Presentation**
in proc. '29th IEEE Photovoltaic Specialists Conference (IEEE-PVSC)', New Orleans, 2002.
40. *Limiting factors of microcrystalline deposition rate*
E. Amanatides, A. Hammad, D. Mataras and D. Rapakoulias. **Oral Presentation**
in proc. '17th European PV Solar Energy Conference (EPVSEC)', Munchen 2001.
41. *Ion etching of Polyethylene Terephthalate films in helium glow discharges*
D. Papakonstantinou and D. Mataras.
in proc. '15th International Symposium on Plasma Chemistry (ISPC)' Orleans, France 2001. p. 2421.
42. *Surface simulation of Plasma Enhanced Chemical Vapor Deposition of Microcrystalline Silicon Thin Films*
E. Amanatides, D. Mataras and D. Rapakoulias.
in proc. '15th International Symposium on Plasma Chemistry (ISPC)' Orleans, France 2001. p. 872.
43. *Study of hydrogen radio frequency glow discharges under double layer conditions*
A. Hammad, D. Mataras and D. Rapakoulias. **Oral Presentation**
in proc. '15th International Symposium on Plasma Chemistry (ISPC)' Orleans, France 2001. p. 53.
44. *Power dissipation and radical flux in the transition from highly crystalline to amorphous silicon growth by PECVD*
E. Amanatides, S. Stamou, S. Boghosian and D. Mataras
in proc. '16th European PV Solar Energy Conference (EPVSEC)', Glasgow 2000. p. 581.

45. *Simulation of plasma enhanced chemical vapor deposition of microcrystalline silicon based on optical diagnostics*
E. Amanatides, S. Stamou, D. Mataras and D. Rapakoulias. **Oral Presentation**
in proc. '16th European PV Solar Energy Conference (EPVSEC)', Glasgow 2000. p. 357.
46. *Application of Optical and Electrical Diagnostics during the treatment of PET films in a Helium glow discharge*
D. Papakonstantinou, F. Arefi-Khonsari, D. Mataras and D. Rapakoulias
in proc. '14th International Symposium on Plasma Chemistry (ISPC)', Prague 1999. p. 1865
47. *Total pressure effect on hydrogen-diluted silane discharges, at high excitation frequency*
L. Amanatides, D. Mataras and D. Rapakoulias
in proc. '14th International Symposium on Plasma Chemistry (ISPC)', Prague 1999. p. 1351
48. *Influence of the variation of interelectrode space on the deposition of microcrystalline silicon films in an asymmetric cell*
E. Amanatides, D. Mataras and D. Rapakoulias.
in proc. '14th International Symposium on Plasma Chemistry (ISPC)', Prague 1999. p. 1345
49. *Microcrystalline and amorphous silicon deposition investigation using optical and electrical diagnostics*
S. Stamou, D. Mataras, D. Rapakoulias.
in proc. '15th European PV Solar Energy Conference (EPVSEC)', Vienna 1998. p. 861
50. *Space Energy sensitive in situ diagnostics for thin film depositing silane discharges*
S. Stamou, D. Mataras, D. Rapakoulias.
in proc. '14th European PV Solar Energy Conference (EPVSEC)', Barcelona 1997. p. 644.
51. *Argon metastable profiles using laser induced fluorescence in a controlled power RF discharge*
D. Mataras, N. Spiliopoulos, S. Stamou and D. E. Rapakoulias. **Oral Presentation**
in proc. '13th International Symposium on Plasma Chemistry (ISPC)', Beijing-China 1997, edited by C. K. Wu. p.576.
52. *Power dissipation in hydrogen diluted silane glow discharges*
S. Stamou, N. Spiliopoulos, D. Mataras and D.E. Rapakoulias.
in proc. '13th International Symposium on Plasma Chemistry (ISPC)', Beijing-China 1997, edited by C. K. Wu. p.612.
53. *Plasma parameters derived from electrical measurements in rf parallel plate argon glow discharges*
N. Spiliopoulos, D. Mataras, D.E. Rapakoulias.
in proc. '4th European Conference on Thermal Plasma Processes (TPP-4): Progress in Plasma Processing of Materials', Athens 1996, edited by Pierre Fauchais, Begell House Inc. p. 183.
54. *Specific problems of rotational temperature determination in plasmas of large molecules*
S. Stamou, N. Spiliopoulos, D. Mataras, D.E. Rapakoulias.
in proc. '4th European Conference on Thermal Plasma Processes (TPP-4): Progress in Plasma Processing of Materials', Athens 1996, edited by Pierre Fauchais, Begell House Inc. p. 263.
55. *Influence of discharge geometry on power dissipation in silane discharges*
N. Spiliopoulos, D. Mataras, D. Rapakoulias.
in proc. '3rd International Conference on Reactive Plasmas (ICRP)', Nara-Japan 1997, edited by K. Tachibana, Y. Watanabe. p. 93.

56. *The charge state of the dangling bonds dominating electron trapping and the kinetics of the defect relaxation in a-Si:H*
P. Kounavis, N. Spiliopoulos, D. Mataras, D. Rapakoulias.
in proc. '13th European PV Solar Energy Conference (EPVSEC)', Nice-France 1996, edited by W. Freiesleben, W. Palz, H. A. Ossenbrink, P. Helm, p 288
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N. Spiliopoulos, S. Stamou, D. Mataras, D. Rapakoulias.
in proc. '13th European PV Solar Energy Conference (EPVSEC)', Nice-France 1996, edited by W. Freiesleben, W. Palz, H. A. Ossenbrink, P. Helm, p 292
58. *Mass Spectroscopy and power measurements for kinetics and mechanism investigation in Silane Glow Discharges*
N. Spiliopoulos, S. Stamou, D. Mataras, D. Rapakoulias
in proc. '12th International Symposium on Plasma Chemistry (ISPC)', Minneapolis 1995, edited by J.V. Heberlein, D. W. Ernie, J. T. Roberts, p. 1927
59. *Improved method for the measurement and control of the actual power dissipated in RF discharges*
N. Spiliopoulos, D. Mataras, D. Rapakoulias. **Oral Presentation**
in proc. '12th International Symposium on Plasma Chemistry (ISPC)', Minneapolis 1995, edited by J.V. Heberlein, D. W. Ernie, J. T. Roberts, p. 2143
60. *Correlation between Rotational, Gas and Surface Temperature in N₂ plasmas*
D. E. Rapakoulias, D. Gerassimou, D. Mataras, S. Cavvadias.
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61. *A Study of the surface states and the defect formation mechanism in a-Si:H using CPM spectra*
P. Kounavis, D. Mataras, N. Spiliopoulos, D. Rapakoulias.
in proc. '12th European PV Solar Energy Conference (EPVSEC)', Amsterdam 1994, p.144
62. *Plasma-Surface interactions during Plasma-Enhanced Chemical Vapor Deposition of hydrogenated amorphous silicon*
D. Mataras, F. Coutelieiris, D. Rapakoulias. **Oral Presentation**
in proc. '11th International Symposium on Plasma Chemistry (ISPC)', Loughborough 1993, J. Hary editor, p. 1113
63. *Influence of the deposition parameters to the gap state distribution and to the quality of PE-CVD of a-Si:H*
P. Kounavis, N. Spiliopoulos, D. Mataras, E. Mytilineou, D. Rapakoulias.
in proc. '11th European PV Solar Energy Conference (EPVSEC)', Montreux 1993, Harwood Academic Publishers, p. 726
64. *Correlation between discharge geometry and film properties in PE-CVD of a-Si:H*
D. Mataras, D. Rapakoulias.
in proc. '10th European PV Solar Energy Conference (EPVSEC)', Lisbon 1991, p.165
65. *Correlation of deposition parameters and transport properties of a-Si:H films*
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in proc. '20th Int. Conf. Phys. Semiconductors (ICPS)', Thessaloniki 1990, p. 2115
66. *Plasma assisted-CVD of a-Si:H investigated by spatially resolved optical diagnostics*
D. Mataras, S. Cavvadias, D. E. Rapakoulias.
in proc. '9th European PV Solar Energy Conference (EPVSEC)', Freiburg 1989, edited by W. Palz, G.T. Wrixon and P. Helm, Kluwer Academic Publishers, p.87

67. *Dilution effects in the plasma-assisted CVD of a-Si:H*
D. Mataras, S. Cavadias, D. E. Rapakoulias.
in proc. '9th International Symposium on Plasma Chemistry (ISPC)', Pugnochiuso-Italy 1989, edited by R. D' Agostino (IUPAC 1989), p. 1293
68. *Spatially resolved LIF and OES in silane discharges*
D. Mataras, S. Cavadias, D.E. Rapakoulias. **Oral Presentation**
in proc. '9th International Symposium on Plasma Chemistry (ISPC)', Pugnochiuso-Italy 1989, edited by R. D' Agostino (IUPAC 1989), p.423
69. *Spatially resolved diagnostics for the glow discharge deposition of a-Si:H*
D. Mataras, S. Cavadias, D. Rapakoulias. **Oral Presentation**
in proc. 'Euroforum-New Energies Congress', Saarbrucken 1988, H. S. Stephens & Associates vol 3, p. 170
70. *Kinetics of a-Si:H deposition*
D. Mataras, D. Rapakoulias, S. Cavadias. **Oral Presentation**
in proc. '8th International Symposium on Plasma Chemistry (ISPC)', Tokyo 1987, edited by K. Akashi and A. Kinbara (IUPAC 1987), p. 1484.

Δ₄ Ομιλίες σε Διεθνή Συνέδρια:

1. 17th International Summer School on Vacuum, Electron and Ion Technologies,
19 – 23 September 2011, Sunny Beach, Bulgaria **Invited**
2. ESF Exploratory Workshop EW09-103: "Manipulation of Biomaterials Surface by Plasma Processing",
26 - 30 May 2010, Iasi, Romania **Invited**
3. "Diagnostics and modeling of SiH₄/H₂ plasmas for the deposition of microcrystalline silicon: the case of dual frequency sources"
E. Amanatides and D. Mataras **Invited**
3rd School on Advanced Plasma Technology, Varenna, Italy, 28-31 July 2008
4. "Growth kinetics of plasma deposited microcrystalline silicon thin films"
E. Farsari, E. Amanatides and D. Mataras **Keynote**
12th International Conference on Plasma Surface Engineering, Garmisch-Partenkirchen, Germany, September 2010
5. "Nucleation and growth kinetics of plasma deposited microcrystalline silicon thin films"
E. Amanatides and D. Mataras
25th European Photovoltaic Solar Energy Conference, Valencia, Spain, September 2010
6. "Development of a hollow cathode plasma source for microcrystalline silicon deposition"
P. Dimitrakellis, E. Amanatides, D. Mataras, D. Rapakoulias
11th High-Tech Plasma Processes Conference, Brussels, Belgium June 2010
7. "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
10th International Conference on Plasma Surface Engineering, Garmisch-Partenkirchen, Germany, September 2006
8. "Experimental and theoretical investigation of PECVD of microcrystalline silicon thin films prepared close to the amorphous silicon growth" **Plenary**
20th European PV Solar Energy Conference (EPVSEC), Barcelona 2005

9. "Modelling and Diagnostics of He Discharges for Treatments of Polymers" **Invited**
2nd School on Advanced Plasma Technology, Varenna-Italy 2004
10. "2D self – consistent modeling of microcrystalline silicon deposition process"
19th European PV Solar Energy Conference (EPVSEC), Paris 2004
11. "Pursuing rapid growth of microcrystalline silicon by PECVD" **Invited**
37th International Union of Vacuum Science Technique and Applications: Workshop on Plasma Deposition of Advanced Materials, Kerkrade, The Netherlands, 2003
12. "Exploration of the deposition limits of microcrystalline silicon" **Invited**
16th International Symposium on Plasma Chemistry (ISPC), Taormina 2003
13. "Etch rate measurement of Polyethylene Terephthalate films treated in Helium and Helium-Oxygen RF discharges"
16th International Symposium on Plasma Chemistry (ISPC), Taormina 2003
14. "Combination of Plasma Diagnostics and Modelling for the Investigation of Microcrystalline Silicon Deposition"
29th IEEE Photovoltaic Specialists Conference (IEEE-PVSC), New Orleans, 2002
15. "Electron induced silane dissociation and deposition rate relationship in the PECVD of microcrystalline silicon thin films"
13th European Conference on Chemical Vapor Deposition, Athens 2001
16. "Limiting factors of microcrystalline deposition rate"
17th European PV Solar Energy Conference (EPVSEC), Munchen 2001
17. "Simulation of plasma enhanced chemical vapor deposition of microcrystalline silicon based on optical diagnostics"
16th European PV Solar Energy Conference (EPVSEC), Glasgow 2000
18. "Arrhenius like behavior in plasma reactions" **Invited**
Chemistry and Biochemistry under extreme conditions workshop, Santorini, 1997
19. "Plasma Chemistry. Towards an exact science" **Invited**
4th European Conference on Thermal Plasma Processes, Athens 1996
20. "Optical and Electrical Diagnostics of Low Pressure Plasmas" **Invited**
NATO Advanced Study Institute on: Plasma treatments and deposition of polymers, 1996
21. "Improved method for the measurement and control of the actual power dissipated in RF discharges"
12th International Symposium on Plasma Chemistry (ISPC), Minneapolis 1995
22. "Plasma-Surface interactions during Plasma-Enhanced Chemical Vapor Deposition of hydrogenated amorphous silicon"
11th International Symposium on Plasma Chemistry (ISPC), Loughborough 1993
23. "Diagnostics in low pressure silane discharges" **Invited**
XII Conference on Vacuum Science and Technology of the Italian Vacuum Society, Bolzano-Italy 1993.
24. "Spatially resolved LIF and OES in silane discharges"
9th International Symposium on Plasma Chemistry (ISPC), Pugnouchiuso-Italy 1989
25. "Spatially resolved diagnostics for the glow discharge deposition of a-Si:H"
Euroforum-New Energies Congress, Saarbrucken 1988
26. "Kinetics of a-Si:H deposition"
8th International Symposium on Plasma Chemistry (ISPC), Tokyo 1987

Δ₅ Διδακτορική Διατριβή:

- Εναπόθεση Αμόρφου Υδρογονωμένου Πυριτίου (a-Si:H) στην εκκένωση αίγλης του σιλανίου. Ρόλος των ενεργών ενδιαμέσων. Πανεπιστήμιο Πατρών, Ιούνιος 1990.

Δ₆. Πατέντες:

- 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

Z. Διδακτικό Έργο:

Αυτόνομη διδασκαλία επί δεκαπέντε χρόνια των παρακάτω μαθημάτων :

- Διεργασίες Παραγωγής Ηλεκτρονικών Υλικών (υποχρεωτικό μέχρι το 2000 και νυν επιλογή 10^{ου} εξαμήνου σπουδών)
- Εισαγωγή στους Η/Υ και εργαστήριο (υποχρεωτικό 1^{ου} εξαμήνου σπουδών)
- Εισαγωγή στον Προγραμματισμό και εργαστήριο (υποχρεωτικό 3^{ου} εξαμήνου σπουδών)
- Φυσικές Διεργασίες II (μεταφορά ορμής και θερμότητας) (υποχρεωτικό 8^{ου} εξαμήνου σπουδών)
- Μεταπτυχιακό Μάθημα: Διεργασίες Παραγωγής Υλικών (6 εξάμηνα)

- Επίβλεψη 3^{ων} Διδακτορικών Διατριβών (Δ. Δ. Παπακωνσταντίνου, Χ. Βούλγαρης, Μ. Κωστοπούλου) και δύο ΜΔΕ (Χ. Συνδρεβέλλης, Α. Πάνου).
- Συνεπίβλεψη 5 Διδακτορικών Διατριβών (Ν. Σπηλιόπουλος, Σ. Στάμου, Ε. Αμανατίδης, Α. Hammad, Σ. Σφήκας)
- Επίβλεψη 6 (Ε. Φαρσάρη, Π. Δημητρακέλλης, Σ. Βογιατζής, Ι. Αλεξίου, Β. Βρακατσέλη, Ι. Τσιγάρας) Διδακτορικών Διατριβών σε εξέλιξη.

H. Διοικητικό Έργο:

- Πρόεδρος επιτροπής δικτύου και υπολογιστικών συστημάτων και τεχνικός υπεύθυνος ΤΧΜ/ΠΠ
- Υπεύθυνος για την ιστοσελίδα του ΤΧΜ <http://www.chemeng.upatras.gr> (1993-2010)
- Υπεύθυνος για την δημιουργία και λειτουργία των τριών εργαστηρίων Η/Υ του ΤΧΜ
- Μέλος διαφόρων επιτροπών του ΤΧΜ
- Επιστημονικός Υπεύθυνος ΕΠΕΑΕΚ αναμόρφωσης Προπτυχιακού Προγράμματος Σπουδών 2003-2006
- Αναπληρωτής Πρόεδρος Τμήματος Χημικών Μηχανικών – Πανεπιστήμιο Πατρών 2011 – 2013
- Πρόεδρος Τμήματος Χημικών Μηχανικών – Πανεπιστήμιο Πατρών 2013 - 2015

Δ. Διακρίσεις:
Προσκλήσεις:

- 2011: *17th International Summer School on Vacuum, Electron and Ion Technologies*, 19 – 23 September 2011, Sunny Beach, Bulgaria
- 2010: Keynote lecture, Twelfth International Conference on Plasma Surface Engineering (PSE2010), September 13 - 17, 2010, in Garmisch-Partenkirchen, Germany
- 2010: ESF Exploratory Workshop EW09-103: *“Manipulation of Biomaterials Surface by Plasma Processing”*, 26 - 30 May 2010, Iasi, Romania
- 2009: Προσκεκλημένος καθηγητής, *Université Pierre et Marie Curie*, Paris, June-July 2009
- 2008: *3rd School on Advanced Plasma Technology*, Varenna, Italy, 28-31 July 2008
- 2007: *National Institute for Laser, Plasma and Radiation Physics*, Bucharest, Romania, June 2007
- 2005: Plenary *“20th European Photovoltaic Solar Energy Conference”*, Barcelona, Spain, June 2005
- 2004: *2nd School on Advanced Plasma Technology*, Varenna, Italy, 27 September - 1 October 2004
- 2003: *37th International Union of Vacuum Science Technique and Applications: Workshop on Plasma Deposition of Advanced Materials*, Kerkrade, The Netherlands, 15-19 September 2003
- 2003: *16th International Symposium on Plasma Chemistry*, Taormina, Italy, 22-27 June 2003
- 1999: Ινστιτούτο Μικροηλεκτρονικής, ΕΚΕΦΕ Δημόκριτος, 12 Μαΐου 1999
- 1997: *Chemistry and Biochemistry under extreme conditions workshop*, Santorini, 1-3 June 1997
- 1996: *Fourth European Conference on Thermal Plasma Processes*, Athens, 15-17 June 1996
- 1996: *NATO Advanced Study Institute on: Plasma treatments and deposition of polymers*. May 19-June 2 1996, Acquafredda di Maratea, Italy (Lecturer)
- 1993: *XII Conference on Vacuum Science and Technology of the Italian Vacuum Society*, Bolzano-Italy, 23-26 March 1993.

Επιτροπές Συνεδρίων:

- 2012- Μέλος της Steering Committee του συνεδρίου High Tech Plasma Processes Conference
- 2013: Μέλος της επιστημονικής επιτροπής: 28th European Photovoltaic Solar Energy Conference, Paris, 30/9-4/10 2013
- 2012: Μέλος της επιστημονικής επιτροπής: 27th European Photovoltaic Solar Energy Conference, Frankfurt, 24-28 September 2012

- 2011: Μέλος της επιστημονικής επιτροπής: *26th European Photovoltaic Solar Energy Conference*, Hamburg, 3-9 September 2011
- 2010: Μέλος του International Advisory Committee: *International Summer School on Vacuum, Electron and Ion Technologies*, Bulgaria
- 2010: Μέλος επιστημονικής επιτροπής: *15th International Conference on Plasma Physics and Applications (CPPA2010)*, Iasi, Romania, 1-4 July 2010
- 2010: Μέλος της επιστημονικής επιτροπής: *11th High Tech Plasma Processes Conference*, Brussels, 27 June – 2 July 2010
- 2010: Μέλος της επιστημονικής επιτροπής: *25th European Photovoltaic Solar Energy Conference & 5th World Conference on Photovoltaic Energy Conversion*, Valencia, 6-10 September 2010
- 2009: Μέλος της οργανωτικής επιτροπής: *7^{ou} Πανελλήνιου Επιστημονικού Συνεδρίου Χημικής Μηχανικής*, Πάτρα, 3-5 Ιουνίου 2009
- 2009: Μέλος Προεδρείου: *24th European Photovoltaic Solar Energy Conference*, Paris, 21-25 September 2009, 'Session 3BO.10 Amorphous and microcrystalline silicon solar cells deposition technologies'.
- 2009: Μέλος της επιστημονικής επιτροπής: *24th European Photovoltaic Solar Energy Conference*, Hamburg, 21-25 September 2009
- 2008: Πρόεδρος του συνεδρίου "*1st International Symposium on Plasma Processing & Biomedical Applications*", Milos, Greece, 27-29 August 2008
- 2008: Μέλος της επιστημονικής επιτροπής: *23rd European Photovoltaic Solar Energy Conference*, Valencia, 1-5 September 2008
- 2007: Μέλος της επιστημονικής επιτροπής: *22nd European Photovoltaic Solar Energy Conference*, Milano, 3-7 September 2007
- 2006: Μέλος της επιστημονικής επιτροπής: *21st European Photovoltaic Solar Energy Conference*, Dresden, 3-8 September 2006
- 2005: Μέλος της επιστημονικής επιτροπής: *20th European Photovoltaic Solar Energy Conference*, Barcelona, 6-10 June 2005
- 2005: Μέλος της επιστημονικής επιτροπής: *11th Euroregional Workshop on Thin Silicon Devices*, Delft, February 2-4, 2005
- 2004: Μέλος Προεδρείου: *19th European Photovoltaic Solar Energy Conference*, Paris, 7-11 June 2004, 'Session 3A.08 Amorphous and microcrystalline silicon: Deposition and large area deposition'.
- 2004: Μέλος της επιστημονικής επιτροπής: *19th European Photovoltaic Solar Energy Conference*, Paris, 7-11 June 2004
- 2003: Μέλος της οργανωτικής επιτροπής: *4^{ou} Πανελλήνιου Επιστημονικού Συνεδρίου Χημικής Μηχανικής*, Πάτρα, 20-25 Ιουνίου 2003
- 2003: Μέλος της επιστημονικής επιτροπής: *9th Euroregional Workshop on Thin Silicon Devices*, Lisbon, 19-21 February 2003
- 2002: Μέλος της επιστημονικής επιτροπής: *8th Euroregional Workshop on Thin Silicon Devices*, Salerno, 6-8 March 2002

- 2001: Μέλος της εθνικής οργανωτικής επιτροπής: *EuroCVD XIII*, Athens, 26-31 August 2001
- 1996: Μέλος της επιστημονικής επιτροπής: *NATO Advanced Study Institute on: Plasma treatments and deposition of polymers*. Acquafredda di Maratea, Italy May 19-June 2 1996
- 1996: Μέλος της επιστημονικής επιτροπής: *4th European Conference on Thermal Plasma Processes*, Athens, 15-18 July 1996

Reviewer Περιοδικών:

1998-2005: >100 Reviews άρθρων για τα διεθνή περιοδικά:

Applied Physics Letters
Journal of Applied Physics
Journal of Physics D: Applied Physics
J. Phys. IV
Journal of Optics A: Pure and Applied Optics
J. Phys. B: Atomic, Molecular and Optical Physics
Plasma Chemistry and Plasma Processing
Plasma Processing and Polymers
Plasmas and Polymers
Surface and Coatings Technology
Surface and Interface Analysis
Thin Solid Films
Journal of Hazardous Materials
Applied Catalysis B: Environmental
Journal of Applied Polymer Science

1985-1990 : Υποτροφία εκπόνησης διδακτορικού, ΕΙΧΗΜΥΘ-ΓΓΕΤ.
