

**CURRICULUM VITAE**  
of  
**Evangelia A. Pavlatou**

*Assistant Professor of National Technical University of Athens (NTUA)*  
*School of Chemical Engineering*

**1. Personal data**

**Name:** Evangelia A. Pavlatou  
**Date of birth:** 1964  
**Born in:** Melbourne, Australia  
**Working address:** General Chemistry Laboratory  
School of Chemical Engineering  
National Technical University of Athens  
9 Heroon Polytechniou Str., Zografos Campus  
GR-157 80, Athens  
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**2. Education**

1989: Diploma of Chemical Engineering, University of Patras  
1994: Ph.D. in Chemical Engineering of University of Patras  
Doctoral Thesis: «*Light scattering from zinc halides in molten and amorphous states*»  
Supervisor: Prof. G.N. Papatheodorou

**3. Special Training**

9-12/1991 «Advanced Analytical Methods». (duration 160 hours),  
Department of Chemical Engineering, University of Patras.  
22/03-26/03/2004 «X-ray Fluorescence Spectroscopy». Seminar of Thermo  
Electron SA in Lausanne, Switzerland

**4. Fellowships**

1977-1983: Distinction Rewards of National Ministry in Education  
1986, 1988: Reward Fellowships for distinct progress in undergraduate  
studies from the National Institute of Fellowships  
1989-1993: Fellowship for doctoral studies from the Institute of Chemical  
Engineering & High Temperature Chemical Processes  
(ICE/HT, FORTH, Hellas)  
1995-1996: Postdoctoral Fellowship in the framework of «*Human Capital  
and Mobility Program*»

**5. Spoken Languages**

**Greek:** mother tongue

**English:** Listening, Reading, Spoken Interaction, Spoken Production, Writing: *Proficient  
User C2*

**German:** Listening, Reading, Spoken Interaction, Spoken production, Writing: *Basic User  
A1*

## 6. Research and work experience

- 1989-1994: PhD student in Physical Chemistry Laboratory of Department of Chemical Engineering, University of Patras.
- 1-4/1990: Visiting researcher in the Institute of Electronic Structure and Laser "IESL-FORTH Hellas" (Heraklion-Crete) in the framework of research entitled "*Dynamic Light Scattering of glassy ionic mixtures  $KNO_3.M(NO_3)_2$ ,  $M=Ca^{+2}, Mg^{+2}$* ".
- 11/1991: Visiting researcher in the Institute of Physical Chemistry and Electrochemistry I, University of Karlsruhe, Germany Institute of Electronic Structure and Laser "IESL-FORTH Hellas" in the framework of European research project CEC-SCIENCE (1990-1993) entitled "*Structural properties of mixtures of refractory metal halides with alkali metal halides*".
- 1992-1995: Visiting researcher in the Institute of Electronic Structure and Laser "IESL-FORTH Hellas" (Heraklion-Crete) in the framework of research entitled (total duration: 10 months) «*Light scattering from zinc halides in molten and amorphous states*»
- 7/1994-1998: Collaborating researcher in Institute of Chemical Engineering & High Temperature Chemical Processes (ICE/HT, FORTH, Hellas)
- 2/1995-8/1995 and 6/1996-8/1996: Post-doctoral researcher in the Chemistry Physical Chemistry of Oxford University.
- 1992-1998: Laboratory Assistant in Department of Chemical Engineering, University of Patras.
- 1999-2001: Laboratory Assistant in School of Chemical Engineering, National Technical University of Athens (N.T.U.A.).
- 11/2001-11/2006: Lecturer in Department of Chemical Engineering, National Technical University of Athens (N.T.U.A.).
- 12/2006-06/2010: Assistant Professor with tenure in Department of Chemical Engineering, National Technical University of Athens (N.T.U.A.).
- 7/2010: Permanent Assistant Professor in Department of Chemical Engineering, National Technical University of Athens (N.T.U.A.).

## 7. Professional Societies

- *Academy of Surface Technology (EAST)*, Member of the European Board representing Greece (2009-present)
- Technical Chamber of Greece
- Association of Greek Chemists

## 8. Teaching experience

### *Undergraduate courses*

- «General Chemistry» (5<sup>th</sup> semester, Theory and Laboratory exercises, School of Applied Mathematics and Physical Sciences, NTUA)
- «Pedagogy I» (2<sup>nd</sup> semester, School of Chemical Engineering, NTUA)

- «Didactics of Sciences and Technology» (3<sup>rd</sup> semester, School of Chemical Engineering, NTUA)
- Pedagogy II» (6<sup>th</sup> semester, School of Chemical Engineering, NTUA)
- «Inorganic and Electrochemical industrial processes» (8<sup>th</sup> semester, School of Chemical Engineering, NTUA)
- «Inorganic Industries - Case studies)» (9<sup>th</sup> semester, School of Chemical Engineering, NTUA)

### **Graduate courses**

2001-2008	«Chemical Technologies- Special Cases». Master course in «Didactics in Chemistry and new educational technologies”.
2008-present:	«Chemistry, Technology and every day applications». Master degree in «Didactics in Chemistry and new educational technologies”
2009-present	“New Technologies in Education” Master course in «Didactics in Chemistry and new educational technologies”.
2000-present	Laboratory course «X ray diffraction (XRD)» Master course in “Material science and technology”

She has published a series of educational textbooks

- **Laboratory Exercises of Physical Chemistry** (1998), pg. 107
- **General Chemistry Laboratory exercises** (2007), pg.80
- **Design of Instruction** (2007) pg. 150
- **Technology of Materials** (1999) pg. 279 (ISBN: 960-06-0743-5)

## **9. Diploma, Master and PhD theses**

She has supervised eighteen (18) diploma, eight (8) master and eight (8) Ph.D. students realized in the General Chemistry Laboratory of School of Chemical Engineering in NTUA.

## **10. Research activities**

Her research work is actually oriented through two main fields: (a) structural characterization of inorganic materials by application of vibrational spectroscopy (micro-Raman spectroscopy) and (b) production and characterization (structure – properties) of metallic coatings.

In detail, she is working in the field of:

- Synthesis of inorganic material of super purity for spectroscopic uses,
- Study of structural properties of inorganic materials in the gaseous, glassy, molten and solid states,
- High temperature electrolytic processes in metal molten halides
- Molecular Dynamics Simulations of inorganic materials
- Electrolytic production of micro- and nano-structured metal and metal-alloy coatings

- Electrolytic production of composite micro and nano-structured metal matrix coatings enhanced with hard nanoparticles (e.g. SiC, WC etc.)
- Electrolytic production of metallic nano-wires
- Electrolytic synthesis of nanostructured patterns
- Surface characterization: morphology, topography, crystal structure, physical and mechanical properties (hardness, corrosion resistance, roughness, wear resistance)
- Optimisation of electrolysis parameters in order to control the growth micro and nano-structured metal matrix coatings/films with enhanced physical and mechanical properties
- Development of new technologies for the production of multimedia educational material for secondary and high level education

She is an expert in the following techniques

- Raman Spectroscopy in high (~1200 °C) and low temperatures (~ -196 °C) of inorganic materials in solid, glassy, molten and gaseous.
- Photon Correlation & Brillouin Spectroscopy
- UV-Vis spectroscopy
- XRF spectroscopy
- XRD, optical, SEM and AFM microscopy, EDAX analysis
- Tribological measurements (pin on disc, friction coefficient, wear rate)
- Microhardness and Roughness measurements Stylus / Laser Profilometer
- Thermal treatments (high temperature furnace, vacuum furnace)
- Corrosion resistance measurements by Salt Spray Testing and electrochemical tests
- Electrochemical techniques (setting up of electrochemical apparatus, direct & pulse plating, electropolishing, electrochemical analysis, cyclic voltammetry)

## 11. Publications

### 11.1 Theses

1. *Catalytic Oxidation of sulphur dioxide in molten salts: Catalyst deactivation – Use of new catalysts*  
Diploma thesis, Department of Chemical Engineering, University of Patras, (1989), pg. 133  
(Degree: Excellent)
2. *Light Scattering from zinc halides in molten and amorphous states*  
PhD Thesis, Department of Chemical Engineering, University of Patras, (1994), pg. 206  
(Degree: Excellent)

### 11.2 Peer reviewed journals-special editions

1. Dynamic light scattering study of ionic  $\text{KNO}_3\text{-Ca(NO}_3)_2$  mixtures.  
E.A. Pavlatou, G.N. Papatheodorou, A.K. Rizos and G. Fytas  
*J. Chem. Phys.* **94**, (1991) 224-232
2. Dynamic light scattering and low-frequency Raman scattering study of ionic  $\text{KNO}_3\text{-Ca(NO}_3)_2$  mixtures.  
E.A. Pavlatou, A.K. Rizos, G.N. Papatheodorou and G. Fytas  
*J. of Non-Cryst. Solids*,(1991) **131-133**, 88-91
3. Structural properties of zinc halide melts.

- E.A. Pavlatou and G.N. Papatheodorou  
*Proc. Int. Symp. Molten Salts* (1992) Vol. **92-16** ed. The Electrochemical Society, 72-87
4. Reduction products of pentavalent Niobium and Tantalum in fused chloride solvents.  
G. Voyiatzis, E.A. Pavlatou, G.N. Papatheodorou, M. Bachtler and W. Freyland  
*Proc. Int. Molten Salt Chem. Techn.*, (1993) Vol. **93-9**, ed. The Electrochemical Society, 252-264
  5. Raman Scattering from Alkali Metal Halide Melt Mixtures: Composition and Temperature Effects.  
S.G. Kalogrianitis, T.G. Mihopoulos, E.A. Pavlatou and G.N. Papatheodorou  
*Proc. Int. Molten Salts*, (1994), Vol. **94-13** ed. The Electrochemical Society, 284-291
  6. Dynamic properties of Zinc Halide glasses and melts.  
S.N. Yannopoulos and E.A. Pavlatou  
*Chimica Chronica-New Series*, (1994), **23** 257-263
  7. Structural properties of ZnCl<sub>2</sub>-ZnBr<sub>2</sub> glasses and melts.  
E.A. Pavlatou  
*Chimica Chronica-New Series*, (1994), **23** 265-270
  8. Isotropic and anisotropic Raman scattering from molten CsCl-LiCl mixtures: Composition and temperature effects.  
G.N. Papatheodorou, S.G. Kalogrianitis, T.G. Mihopoulos and E.A. Pavlatou  
*J. Chem. Phys.* (1996), **7** 2660-2667
  9. Dynamics of Density and Orientation Fluctuations in Supercooled Zinc Halides.  
E.A. Pavlatou, S.N. Yannopoulos, G.N. Papatheodorou and G. Fytas  
*J. Phys. Chem. B*, (1997), **101** 8748-8755
  10. The interpretation of vibrational spectra of ionic melts.  
E.A. Pavlatou, Paul A. Madden and Mark Wilson  
*J. Chem. Phys.*, (1997), **107**, 10446-10457
  11. Temperature and Pressure Dependence of Raman Scattering in Amorphous GeS<sub>2</sub>.  
A. Perakis, I.P. Kotsalas, E.A. Pavlatou, and C. Raptis  
*Phys. stat. sol. (b)*, (1999), **211**, 421-427
  12. Structure and phase diagram of the Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub> – Na<sub>3</sub>AlF<sub>6</sub> system.  
E.M. Anghel, M. Zaharescu, S. Zuca, E. Pavlatou  
*J. Mat. Sci.* **34**, (1999), 3923-3929
  13. Raman Spectroscopic Study of BeCl<sub>2</sub> in the Crystalline, Glassy and Liquid State of Molten BeCl<sub>2</sub>-CsCl Mixtures.  
E.A. Pavlatou, and G.N. Papatheodorou  
*Phys. Chem. Chem. Phys.* (2000), **2**, 1035-1043
  14. Nickel matrix composite coatings: Application in textile machinery and evaluation on cotton products quality.  
P. Gyftou, E.A. Pavlatou, N. Spyrellis, K.S. Hatzilyberis  
*Trans. Inst. Met. Finishing*, (2000), **78 (6)**, 223-226
  15. Phase equilibria and structure in the Na<sub>3</sub>AlF<sub>6</sub>-Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub>-TiO<sub>2</sub>.

- E. M. Anghel, E. Pavlatou, M. Balasoiu, S. Zuca  
*High Temperature Material Processes*, (2000), **4(3)**, 431-440
16. Ionic interactions in molten complex chlorides from vibrational dephasing.  
S.A. Kirillov, G.A. Voyiatzis, I.S. Musiyenko, G. M. Photiadis and E.A. Pavlatou  
*J.Chem.Phys.*, (2001), **114 (8)**, 3683-3691
  17. Incorporation of SiC nanoparticles in nickel electrocoatings.  
P. Gyftou, E.A. Pavlatou and N. Spyrellis  
*Galvanotecnica e nuove finiture AIFM*, (2001), **XI-LII**, 23 (in Italian)
  18. Hardening modification of nickel matrix composite electrocoatings containing SiC nanoparticles.  
P. Gyftou, E.A. Pavlatou and N. Spyrellis  
*Electroplating and Surface Treatment*, (2001), **IX (1)**, 23 (in Russian)
  19. Electrodeposition of Ni/SiC Composites by Pulse Electrolysis.  
P. Gyftou, M. Stroumbouli, E.A. Pavlatou and N. Spyrellis  
*Trans. Inst. Met. Finishing*, (2002), **80 (3)**, 88-91
  20. Instantaneous collision complexes in molten alkali halides: Picosecond dynamics from low-frequency Raman data.  
S.A. Kirillov, E.A. Pavlatou, G.N. Papatheodorou  
*J.Chem.Phys.* (2002), **116 (21)**, 9341-9351
  21. Establishing the gas phase dimerization of niobium (V) fluoride and tantalum (V) fluoride by quantitative Raman spectroscopy.  
S. Boghosian, E.A. Pavlatou, G.N. Papatheodorou  
*Vibr.Spectrosc.*, (2005), **37** 133-139
  22. Codeposition of ultra-fine WC particles in Ni matrix composite electrocoatings.  
M. Stroumbouli, P. Gyftou, E.A. Pavlatou, N. Spyrellis  
*Surf. Coat. Technol.*, (2005), **195 (2-3)** 325-332
  23. Tribological study of Ni matrix composite coatings containing nano- and micron-SiC particles.  
P. Gyftou, M. Stroumbouli, E.A. Pavlatou, P. Asimidis and N. Spyrellis  
*Electrochim. Acta*, (2005), **50** 4544-4550
  24. Hardening effect induced by incorporation of SiC particles in Ni electrodeposits.  
E.A. Pavlatou, M. Stroumbouli, P. Gyftou and N. Spyrellis  
*J.Appl.Electrochem.*, (2006), **36** 385-394
  25. Synergistic effect of 2-butyne-1,4-diol and pulse plating on the structure and properties of nickel nanocrystalline deposits  
E.A. Pavlatou, M. Raptakis, N. Spyrellis  
*Surf.Coat.Technol.*, (2007), **201** 4571-4577
  26. Influence of pulse plating conditions on the structure and properties of pure and composite nickel nanocrystalline coatings  
E. A. Pavlatou, N. Spyrellis  
*Russian J. Electrochem.*, (2008), **44** 745-754
  27. Effect of pulse electrodeposition parameters on the properties of Ni/nano-SiC composites.

- P. Gyftou, E.A. Pavlatou, N. Spyrellis  
*Applied Surface Science*, (2008), **254** 5910-5916
28. The effect of heat treatment on the structure and hardness of pulse electrodeposited NiP-WC composite coating.  
 A. Zoikis Karathanasis, E.A. Pavlatou, N. Spyrellis  
*Electrochimica Acta*, (2009), **54** 2563-2570
29. Nickel/nano-TiO<sub>2</sub> composite electrodeposits: Textural and Structural Modifications.  
 S. Spanou, E.A. Pavlatou, N. Spyrellis  
*Electrochimica Acta*, (2009), **54** 2547-2555
30. 3D visualization types in multimedia applications for science learning: A case study for 8th grade students in Greece  
 G. Korakakis, E.A. Pavlatou, J.A. Palyvos, N. Spyrellis  
*Computers & Education*, (2009), **52** 390-401
31. Nickel and nickel-phosphorous matrix composite electrocoatings  
 N. Spyrellis, E.A. Pavlatou, S. Spanou, A. Zoikis-Karathanasis  
*Trans. Nonferr. Metal.Soc.China*, (2009), **19** (4) 800-804
32. Production of copper powder from printed circuit boards by electrodeposition  
 I. Masavetas, A. Moutsatsou, E. Nikolaou, S.Spanou, A. Zoikis-Karathanasis, E.A. Pavlatou, N. Spyrellis  
*Global NEST J.*, (2009), **11**(2) 241-247
33. Electrodeposited hard Ni and Ni-P matrix composite coatings: the effect of embedded ceramic particles  
 N. Spyrellis, A. Zoikis-Karathanasis, P. Gyftou, E.A. Pavlatou  
*Galvanotecnica e nuova finitura AIFM*, (2009), **XIX-LX** 268-286
34. Survey exploring views of scientists on current trends in Chemistry Education  
 X. Vamvakeros, E.A. Pavlatou and N. Spyrellis  
*Science and education*, (2010), **19** 119-145
35. Development, Validation and Use of a Greek –Language Questionnaire for Assessing Learning Environments in Grade 10 Chemistry Classes  
 M. Giallousi, V. Gialamas, N. Spyrellis and E. A. Pavlatou  
*International Journal of Science and Mathematics Education*, (2010), **8** 761-782
36. Pulse electrodeposition of Ni/nano-TiO<sub>2</sub> composites: Effect of pulse frequency on deposits properties  
 S. Spanou, E.A. Pavlatou  
*J.Appl.Electrochem.*, (2010), **40** 1325-1336
37. Pulse electrodeposition of Ni-P matrix composite coatings reinforced by SiC particles  
 A. Zoikis-Karathanasis, E. A. Pavlatou, N. Spyrellis  
*J. Alloys and Compds.* (2010), **494** 396-403
38. Computer-based Assesment of Student Performance in Programing Courses  
 N. Kalogeropoulos, J. Tzigounakis, E.A. Pavlatou, A. Boudouvis  
*Computer Applications in Engineering Education*, DOI 10.1002/cae.20512

39. Ni/nano-TiO<sub>2</sub> composite electrocoatings: Correlation between structural characteristics , microhardness and wear resistance  
S. Spanou, E.A. Pavlatou  
*Zeitschrift fur Physikalische Chemie*, (2011), **225**(3) 313-324

### 11.3 Contributions in Proceedings of International Conferences

1. Raman Spectroscopic Study of BeCl<sub>2</sub> in the Crystalline, Glassy and Liquid State and of Molten BeCl<sub>2</sub>-CsCl mixtures.  
E.A. Palate and G.N. Papatheodorou in «*Proceedings of the International Symposium in Honour of Terje Ostvold Conference*», Roros, Norway, November 1-3, 1998, p. 205-214 (oral)
2. Vibrational spectroscopic studies of BiCl<sub>3</sub>-KCl glass forming mixtures.  
E.A. Pavlatou in «*Proceedings of the International George Papatheodorou Symposium*», Patras, Greece, September 17-18, 1999, p.151-156 (poster)
3. Phase-equilibria and structure in the Na<sub>3</sub>AlF<sub>6</sub> – Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub> - TiO<sub>2</sub> system.  
E.M. Anghel, E. Pavlatou, M. Balasoiu and S. Zuca in «*Advances in Molten Salts*», Begel House Inc., NY-Wallingford, 1999, p. 23-31 (poster)
4. Applications of Nickel Matrix Composite Coatings in Textile Industry Equipment.  
P. Gyftou, E. Pavlatou and N. Spyrellis, in «*Proceedings of American Electroplaters and Surface Finishers Society, AESF SUR/FIN Technical Conference 2000 – EAST I*», Chicago, USA, June 26-29, 2000 (484-488) (oral)
5. Spectroscopic investigation on the structure of the NaCl - Na<sub>2</sub>B<sub>4</sub>O<sub>7</sub> - TiO<sub>2</sub> system.  
E.M. Anghel, C. Bessada, S. Zuca and E. Pavlatou in «*Progress in Molten Salt Chemistry 1*», Special Volume in honor of Prof. Niels J. Bjerrum, 20-25 August 2000, edited by Elsevier, ed. R.W. Berg, H.A. Hjuler, 2000, p.59-62 (poster)
6. Nickel Matrix Composite Electrocoatings with SiC.  
S. Psarrou, P. Gyftou, E. Pavlatou, C. Kollia and N. Spyrellis in «*Proceedings of the 15<sup>th</sup> World Congress on Surface Technology*», Garmisch-Partenkirchen, Germany, 13-15 September, 2000, in CD-rom (oral)
7. Ni/SiC Electrocoatings  
E.A. Pavlatou and N. Spyrellis in “*5<sup>th</sup> International Conference THE Coatings in Manufacturing Engineering*”, 5-7 October, 2005, Chalikidiki, p. 425-433 (oral)
8. The Effect of Heat Treatment on the Structure and Hardness of Pulse Electrodeposited NiP-WC composite coatings  
A. Zoikis - Karathanasis, E.A. Pavlatou, N. Spyrellis in *Euro-Interfinish 2007 - Nanotechnology and Innovative Coatings*, Athens (October 18-19 2007) (on CD-rom)
9. Ni/TiO<sub>2</sub> nano-particles composite electrodeposits: Textural and structural modifications.  
S. Spanou, E.A. Pavlatou, N. Spyrellis in *Euro-Interfinish 2007 - Nanotechnology and Innovative Coatings*, Athens (October 18-19 2007) (on CD-rom)
10. Effect of WC particles embedding on the tribological behavior of Ni matrix composite electrocoatings  
E.A. Pavlatou, P. Assimidis, N. Spyrellis in *Euro-Interfinish 2007 - Nanotechnology and Innovative Coatings*, Athens (October 18-19 2007) (on CD-rom)
11. Structure and properties of electrodeposited NiP-WC composite coatings



- A. Zoikis - Karathanasis, E.A. Pavlatou, N. Spyrellis in 6<sup>th</sup> *International conference «The Coatings in Manufacturing Engineering»*, Hanover, Germany (October 25-27 2007) (on CD-rom).
12. Structural and Mechanical Properties of Nanostructured Metal/Alloy Matrix Composite Electrocoatings  
N. Spyrellis, E.A. Pavlatou, S. Spanou, A. Zoikis – Karathanasis in *NPS 08 “Nanoscale Phenomena and Structures in Bulk and Surface Phases”*, Sofia, Bulgaria (February 26 – March 02 2008) 221-228.
  13. Printed circuit boards (PCB) treatment by electrodeposition process for the production of copper powder  
Masavetas, A. Moutsatsou, E. Nikolaou, S. Spanou, A. Zoikis – Karathanasis, E.A. Pavlatou, N. Spyrellis in *WasteEng 08 2nd International Conference on Engineering for Waste Valorisation*, 3-5 June 2008, Patras, Greece, (on CD-rom)
  14. Mechanical properties of TiO<sub>2</sub> nickel matrix composite electrocoatings  
S. Spanou, E.A. Pavlatou, N. Spyrellis in *Proceedings of 7<sup>th</sup> International Conference “The Coatings in Manufacturing”*, 1-3 October 2008, Kalithea Chalkidiki, Greece p. 399-408.
  15. Effect of plating parameters in NiP-SiC Electrodeposition  
P. Papavasiliopoulou, A. Zoikis – Karathanasis, E.A. Pavlatou, N. Spyrellis in *Proceedings of 7<sup>th</sup> International Conference “The Coatings in Manufacturing”*, 1-3 October 2008, Kalithea Chalkidiki, Greece p. 417-425
  16. The effect of three types of visualization on a chemistry multimedia application for 12th grade students  
G. Korakakis, E.A. Pavlatou, J. Palyvos, N.Spyrellis, in *«International Conference of Education, Research and Innovation (ICERI 2008)»*, Madrid (Spain) November 17-19 2008, (CD-rom)
  17. The contribution of animated cartoons in a multimedia application for teaching chemistry: A case study for 5th grade students in Greece  
K. Dalacosta, E. Pavlatou, M. Kamariotaki-Paparrigopoulou, J. Palyvos in *«International Technology Education and Development Conference (INTEd 2009)»*, Valencia (Spain), March 9 - 11 2009, p. 3497-3504 (CD-rom)
  18. Development of a computer-based assessment tool for undergraduate programming courses  
N. Kalogeropoulos, E. Pavlatou, A. Boudouvis, I. Tzigounakis in *«International Conference of Education, Research and Innovation (ICERI 2009)»*, Madrid (Spain), November 16-18 2009, p. 6990-6997 (CD-rom)
  19. A modular web-based course management environment for the academic teacher, focused on user-friendly methods  
I. Tzigounakis N. Kalogeropoulos, A. Boudouvis, E. Pavlatou, in *«International Conference of Education, Research and Innovation (ICERI 2009)»*, Madrid (Spain), November 16-18 2009, p. 7382-7388 (CD-rom)
  20. Can we assess pupil’s science knowledge with animated cartoons?  
K. Dalacosta, E. A. Pavlatou, M. Kamariotaki-Paparrigopoulou, in “3rd World Conference on Educational Sciences” Istanbul Turkey, 3-7 February 2010 (CD-rom)

#### 11.4 Abstracts in Proceedings of International Conferences

1. Light Scattering from molten salts and glasses  
E.A. Pavlatou in «*EUCHEM Conference on Molten Salts*», Rio, Greece, 2-8 September 1990 p.C-3 (oral)
2. Light Scattering in glass forming molten salts.  
E.A. Pavlatou in «*EUCHEM Conference on Molten Salts*», , Bad Herrenalb, Germany, 21-26 August 1994 (oral)
3. Vibrational modes and structure of NbF<sub>5</sub> phases from 77 to 700 K.  
E.A. Pavlatou and S. Boghosian in «*EUCHEM Conference on Molten Salts*», Bad Herrenalb, Germany, 21-26 August 1994 (poster)
4. Raman Spectroscopic study of BeCl<sub>2</sub> in the solid and liquid state.  
E.A. Pavlatou and V.I. Constadaras, in «*EUCHEM Conference on Molten Salts*», Bad Herrenalb, Germany, 21-26 August, 1994 (poster)
5. Purely Discrete Markoffian Frequency Modulation in Molten Salts with Tetrahedral Anions.  
S.A. Kirillov, G.A. Voyiatzis, G.M. Photiadis and E.A. Pavlatou, in «*XXII European Congress on Molecular Spectroscopy*», Essen, Germany, 1994 (oral)
6. Vibrational Spectra of Network-Forming Liquids by Computer Simulation.  
E.A. Pavlatou, M. Wilson and P. A. Madden, in «*EUCHEM Conference on Molten Salts*», Smolenice Castle, Slovakia, 15-20 September 1996 (poster)
7. Raman Spectra of TaF<sub>5</sub> Phases from 77 to 670 K.  
I. Markou, E.A. Pavlatou and S. Boghosian, in «*EUCHEM Conference on Molten Salts*», Smolenice Castle, Slovakia, 15-20 September 1996 (poster)
8. Vibrational Spectroscopic studies and Computer Simulations of BiCl<sub>3</sub>-KCl glass-forming mixtures and Molecular dynamics Simulations of network-forming molten salts.  
E.A. Pavlatou, A. Spirakis, J. Bessiris and M. Wilson in «*EUCHEM Conference on Molten Salts*», Porquerolles, France, June 27-July 3 1998, p. B22 (poster)
9. Nickel Matrix Composite coatings with SiC prepared under pulse plating conditions.  
P. Gyftou, S. Psarrou, E. Pavlatou, C. Kollia and N. Spyrellis in «*51<sup>st</sup> Annual Meeting of The International Society of Electrochemistry – ISE 2000*», Warsaw, Poland, 3-8 September 2000, in cd-rom (poster)
10. Intracrystalline embedding of nano-SiC particles in nickel electrodeposits.  
P. Gyftou, E.A. Pavlatou and N. Spyrellis in «*International Conference and Exhibition of Electrochemistry and Surface Technology*», Moscow, Russia, June 4-8 2001, p. 35 (oral)
11. Evaluation of Embedded SiC Particles in Nickel Matrix Composite Electrocoatings  
P. Gyftou, M. Stroumbouli, E.A. Pavlatou, N. Spyrellis in «*2<sup>nd</sup> International Conference on Instrumental Methods of Analysis – Modern Trends and Applications*», Ioannina, Greece, 5-8 September 2001, p. 230 (oral)
12. Electrodeposition of Ni/SiC composites by Pulse Plating techniques  
P. Gyftou, M. Stroumbouli, E.A. Pavlatou, N. Spyrellis in «*EAST Forum 2001: Electrodeposition in Electronics*», Ouranoupolis, Greece, 10-13 October 2001, p. 18 (oral)

13. Thermal treatment of pulse plated Ni/SiC coatings: Influence of particles sizes  
P. Gyftou, M. Stroumbouli, E. A. Pavlatou, N. Spyrellis, in “*EAST Forum 2003: Optimised Electrodeposition for Modern Applications-Pulse plating and Microsystems*”, Copenhagen, Denmark, 9-12 April 2003 p. 21 (in cd-rom) (*oral*)
14. Tribological Study of Ni matrix composite coatings containing nano and micro-SiC particles  
P.S. Gyftou, M. Stroumbouli, E.A. Pavlatou, N. Spyrellis, in “*Euro-Interfinish 2003: Nanotechnology and Coatings for novel applications*”, Padua, Italy, 23-24 October 2003, p. 34 (*oral*)
15. Students’ attitudes towards Chemistry in relation with their perceptions about the classroom environment and the beliefs of chemistry teachers  
M. Giallousi, A. Georgiadou, E. Pavlatou and N. Spyrellis, in “*Inorganic reaction mechanisms –Meeting 2003*”, Athens, 8-10 January 2004, p.P59 (*poster*)
16. Effect of pulse plating parameters on the morphology of Ni composite coatings containing WC nanoparticles  
M. Stroumbouli, P. Gyftou, E.A. Pavlatou, N. Spyrellis in “*3<sup>rd</sup> International workshop on Electrodeposited Nanostructures- Nanotechnology and coatings for novel applications*”, Newcastle upon Tume, U.K., 25-27 March 2004, p. 15 (*oral*)
17. Electrodeposition of Ni matrix composite coatings containing WC particles  
M. Stroumbouli, G. Matrakas, E.A. Pavlatou, N. Spyrellis in “*55<sup>th</sup> Annual Meeting of the International Society of Electrochemistry*”, Thessaloniki, Greece, 19-24 September 2004, p. 505 (*oral*)
18. Hardening of Ni/SiC composite coatings induced by thermal treatment  
P. Gyftou, M. Stroumbouli, E.A. Pavlatou, N. Spyrellis in “*55<sup>th</sup> Annual Meeting of the International Society of Electrochemistry*”, Thessaloniki, Greece, 19-24 September 2005, p. 573 (*poster*)
19. Tribological properties of Ni/WC composite coatings  
E.A. Pavlatou, M. Stroumbouli and N. Spyrellis in «*Eurointerfinish 2005-Surface Technology for novel materials*», Barcelona, 12-13 May 2005 , p. 25, (*oral*)
20. Nickel matrix composite coatings  
E.A. Pavlatou and N. Spyrellis in «*Eurointerfinish 2005 - Surface Technology for novel materials*», Barcelona, 12-13 May 2005, p. 26 (*oral*).
21. Pulse-plated nickel nanocrystalline deposits: effect of 2 butyne-1,4 diol.  
E.A. Pavlatou, M. Raptakis, N. Spyrellis, in *EAST FORUM 2006 -Control Of deposits Process*, Schwäbisch-Gmünd, Germany, June 1-2, 2006 (*oral*).
22. The Effect of Heat Treatment on the Structure and Hardness of Pulse Electrodeposited NiP-WC composite coatings  
A. Zoikis - Karathanasis, E.A. Pavlatou, N. Spyrellis in *Euro-Interfinish 2007 - Nanotechnology and Innovative Coatings*, Athens (October 18-19 2007) (*oral*) .
23. Ni/TiO<sub>2</sub> nano-particles composite electrodeposits: Textural and structural modifications.  
S. Spanou, E.A. Pavlatou, N. Spyrellis in *Euro-Interfinish 2007 - Nanotechnology and Inovative Coatings*, Athens (October 18-19 2007) (*oral*)

24. Structure and properties of electrodeposited NiP-WC composite coatings  
A. Zoikis - Karathanasis, E.A. Pavlatou, N. Spyrellis in *6<sup>th</sup> International conference «The Coatings in Manufacturing Engineering»*, Hanover, Germany (October 25-27 2007) (on CD-rom).
25. Structural and Mechanical Properties of Nanostructured Metal/Alloy Matrix Composite Electrocoatings  
N. Spyrellis, E.A. Pavlatou, S. Spanou, A. Zoikis – Karathanasis in *NPS 08 “Nanoscale Phenomena and Structures in Bulk and Surface Phases”*, Sofia, Bulgaria (February 26 – March 02 2008) 221-228, *invited lecture*.
26. Nickel and Nickel/Phosphorus Matrix Composite Electrocoatings  
S. Spanou, A. Zoikis – Karathanasis, E.A. Pavlatou, N. Spyrellis, S in *INTERFINISH 2008 – Nanotechnology and Innovative Coatings*, Pusan Korea (June 16-19, 2008), p. 79, *invited lecture*.
27. Epistemic views of PhD graduate scientists and their impact on Chemical Education  
X. Vamvakeros, E.A. Pavlatou and N. Spyrellis in *European Science Education Research Association (ESERA) Conference 2008*, Istanbul, Turkey
28. Development of Nickel/nano-TiO<sub>2</sub> composite electrodeposits for innovative photocatalytic applications  
S. Spanou, E.A. Pavlatou, A.I. Kontos, P.Falaras, N. Spyrellis, in *EAST FORUM 2008 - Challenging and Testing to Improve Surface Technology*, Trento, Italy, October 23-24, 2008 (on CD-rom)
29. The effect of three types of visualization on a chemistry multimedia application for 12th grade students  
G. Korakakis, E. A. Pavlatou, J. Palyvos, N.Spyrellis, in *International Conference of Education, Research and Innovation (ICERI 2008)*, Madrid (Spain) November 17-19 2008.
30. The contribution of animated cartoons in a multimedia application for teaching chemistry: A case study for 5th grade students in Greece  
K. Dalacosta, E. Pavlatou, M. Kamariotaki-Paparrigopoulou, J. Palyvos in *International Technology Education and Development Conference (INTED 2009)*, Valencia (Spain), 9 - 11 March 2009.
31. A comparative study regarding 10th grade chemistry classroom environments and students' attitudes in Greece and Cyprus  
M. Giallousi, V. Gialamas, E.A. Pavlatou in *European Science Education Research Association (ESERA) Conference 2009*, Istanbul, Turkey, August 31 - September 4, 2009
32. TiO<sub>2</sub> reinforced Ni matrix coatings for photoinduced applications  
S. Spanou, E.A. Pavlatou A.I. Kontos, P. Falaras in *2nd European Conference on Environmental Applications of Advanced Oxidation Processes- EAAOP2*, Cyprus, September 9 -11, 2009 ((on CD-rom)
33. Pulse Plating on Nickel Based Composite Coatings  
A. Zoikis – Karathanasis, S. Spanou, P. Gyftou, E.A. Pavlatou, N. Spyrellis in *EuroInterfinish 2009 - Pulse plating and other Electrochemical Techniques*, Bremen, Germany, September 23-25, 2009, *invited lecture*
34. Tribological Study of Nickel Matrix Composite Coatings by Utilization of Vibrational

## Spectroscopy and Microscopy Technique

S. Spanou, P. Gyftou, E.A. Pavlatou in *6<sup>th</sup> International Conference on the instrumental methods of Analysis: Modern Trends and Applications*, Athens, Greece, October 4-8, 2009 (poster)

35. Tribo-Corrosion Study of Ni and Ni-P Matrix Composite Coatings  
A. Zoikis-Karathanasis, S. Spanou, E.A. Pavlatou in *6<sup>th</sup> International Conference on the instrumental methods of Analysis: Modern Trends and Applications*, Athens, Greece, October 4-8, 2009 (poster)
36. Ni/nano-TiO<sub>2</sub> composite electrocoatings: correlation between structural characteristics and properties  
S. Spanou, E.A. Pavlatou, A. I. Kontos, P. Falaras in *2<sup>nd</sup> International Conference on Functional Nanocoatings*, Dresden, Germany, March 28-31, 2010 (oral)
37. AAO Template-assisted electrodeposition of Ni nanowires  
A. Mitrokotsa, A. Zoikis-Karathanasis, S. Spanou, P. Gyftou, E. D. Koronaki, G. Pashos, A.G. Boudouvis, E.A. Pavlatou in *2<sup>nd</sup> International Conference on Functional Nanocoatings*, Dresden, Germany, March 28-31, 2010 (poster)
38. Mechanical properties of pulse deposited pure and composite Ni-P coatings  
A Zoikis-karathanasis and E.A. Pavlatou in *2<sup>nd</sup> International Conference on Functional Nanocoatings*, Dresden, Germany, March 28-31, 2010 (oral)
39. Electrolytic codeposition of TiO<sub>2</sub> nano-particles with Ni based matrices: Structural aspects, mechanical properties and self-cleaning character of coatings  
E.A. Pavlatou, S. Spanou, A. Zoikis-Karathanasis, P. Gyftou, A.I. Kontos, P. Falaras in “*61<sup>st</sup> Annual Meeting of the International Society of Electrochemistry*”, Nice, France, 26 September to 1 October 2010
40. Influence of electrodeposition parameters on the structure and morphology of Ni nanowires  
A. Mitrokotsa, S. Spanou, P. Gyftou, E.A. Pavlatou in “*8th International workshop on Electrodeposited nanostructures – EDNANO 8*”, 17th-19th March 2011, Milan-Italy (oral)
41. Combined effect of addition of 2-bouten-1,4-diole and pulse current imposition on the production of nanostructured Ni coatings  
P. Gyftou, S. Spanou, A. Gialamopoulou, E.A. Pavlatou in “*9th European Symposium on Electrochemical Engineering (9th ESEE)*”, 20-24<sup>th</sup> June 2011, Chania-Greece (oral)

### 11.5 Contributions in Conferences with no published proceedings

1. Light Scattering and Structural and Dynamic Properties of Melts.  
E.A. Pavlatou, G. Fytas and G.N. Papatheodorou in «*Gordon Research Conference on Molten Salts and Liquid Metals*», Tilton (N.H.), U.S.A., 1991 (oral)
2. Light Scattering from Halide Melts and Metal molten Halide salt mixtures.  
E.A. Pavlatou, G.A. Voyiatzis and G.C. Carountzos in «*Gordon Research Conference on Molten Salts and Liquid Metals*», Tilton (N.H.), U.S.A., 1991 (poster)
3. Light scattering from molten alkali halides: LiF, LiCl, CsCl and LiCl-CsCl eutectic.

V.G. Dracopoulos, E.A. Pavlatou and G.N. Papatheodorou in «*Gordon Research Conference on Molten Salts and Liquid Metals*», Plymouth (N.H.), USA, 1995 (*oral*)

### 11.6 Contributions in Greek Conferences

She has also published thirty three (33) articles in proceedings of Greek conferences

### 12 Other activities

- Reviewer of the following journals:  
*Surface and Coatings Technology*,  
*Journal of Applied Electrochemistry*,  
*Electrochimica Acta*,  
*Thin Solid Films*,  
*Material Science and Engineering A*,  
*Materials Chemistry and Physics*  
*Applied Surface Science*  
*Tribology Letters*  
*Industrial and Engineering research*
- Chairperson in *Euro-Interfinish 2007 - Nanotechnology and Innovative Coatings* 18-19/10/2007, Athens
- Member of the committee for the best poster award in «*EUCHEM Conference on Molten Salts*», Porquerolles, France, July 1998
- Organizing Committee and Program Committee in «*EAST FORUM 2001: Electrodeposition in Electronics*», (70 participants), 10-13/10/2001 Ouranoupolis, Chalkidiki
- Organizing Committee and Program Committee in «*Euro-Interfinish 2007*» (120 participants), 18-19/10/2007, Athens

### 13 Citations in Science Citation Index

According to the SCOPUS database **three hundred sixty four (364)** (not including the requested author) are found in the Science citation index.

### 14. Participation in research projects

1. «*Structure of refractory metal halide and ox halide complexes in alkali halide melts and their influence on the refractory metal electrocrystallization*» European project CEC-SCIENCE, contract No. SC1-CT 890294 (1990-1995). - *Researcher*
2. «*Study of the physical-chemical properties of the electrolytes during the electrodeposition of lanthanide halide melts*» General Secretariat for Research and Technolgy- *Bilateral cooperation of Greece-Romania* (1995-1997) *Researcher*
3. «*Thermal Sprayed coatings for heavy worn surfaces of mechanical compartments in Greek industry – Alternative techniques of production*» ” General Secretariat for Research and Technolgy- EPET II - (97EKBAN2-126) (1998-2001). *Researcher*
4. “*Intelligent manufacturing of advanced tailored coatings deposited on low cost materials for highly demanding tribological applications*”, European project (BRITE) (1998-2002). *Researcher*

5. *“European Encyclopaedia of Surface Technology”*, European project (Leonardo da Vinci) (1998-2000) - Researcher
6. *«Development of museum presenting chemical processes used in chemical department of the technological park of Lavrion»* in the framework of B' KPS – Ministry of Education (1999-2000). - Researcher
7. *«Determination of specifications for laboratory equipment and organisation”* in the framework of EPEAEK-II.I. – Ministry of Education (1999-2000) - Main researcher
8. *“Training of teachers in secondary technical schools «Chemistry – Chemistry Laboratory – Environmental Chemistry» (Theory and Laboratory exercise)”*, Ministry of Education - EPEAEK – III (1999) - Main researcher
9. *“Construction of educational material by using multimedia for energy and safety systems”*, General Secretariat for Research and Technology - INTERREG (2000-2001) - Researcher
10. *“Leucippus: chemistry software for teaching in secondary education ”*, Ministry of Education EPEAEK-I.Ια, (2000-2001) Member of writing text and supervising the production of software
11. *“Ecological Training of Municipal Administrative”*, European project Tempus (1998-2001) - Trainer
12. *“Development of software for simulating after-effects of using chemical weapons”* (2001-2002) National Ministry of Defence. Researcher
13. *“Development of an alternative system for environmental management of electric batteries”*, Ministry of Finance- EPAN, 4.5, Action 4.5.1, (2003-2006). Researcher
14. *“EPSILON – Enterprise Development in IEK and school of professional technical skills»*, EPEAEK II, Ministry of Development and Education (2003-2004) – Researcher
15. *“Micro and Nano Deposition”*, European project (Marie Curie Conferences and Training Courses) (2005-2008) - Trainer
16. *«Certification centre of teachers for computer skills»*, Ministry of Education EPEAEK (2005 - 2008 )
17. *“Development of composite nano-structured materials of titania. Embedment in prototype photo-catalytic materials and implementation in decomposition of liquid and gaseous pollutants”*, Ministry of Education General Secretariat for Research and Technology - Basic Research Program, «PENED 2003», 8.3, Action 8.3.1, (2005-2009)-Main researcher – Scientific coordinator
18. *“Composite electrolytic nickel coatings with micro and nanoparticles of refractory metal carbides for enhancing the wear of aluminium compartment of internal combustion engines”* Ministry of Development -General Secretariat for Research and Technology (PABET 2005) 4.3, Action 4.3.1 (2006-2008) - Main researcher
19. *“Development of educational material: «Carbon» and «Chemical calculations»* Ministry of Education EPEAEK II-E.A.I.T.Y. (2006-2008)- Researcher

20. “Training courses for utilizing information and communication technologies”, Ministry of Education EPEAEK (2008) - Trainer
21. “Study of the mechanism of Ni nanowires electrodeposition and the effect of the electrolytic parameters on the structure”, National Technical University of Athens PEBE 2008, (2008-2010) - Scientific coordinator

### 15. Resume of educational and research activities

<b>EDUCATIONAL</b>	
Tutoring of undergraduate courses	6 courses
Tutoring of postgraduate course	1
Tutoring of postgraduate laboratory courses	1
Supervising of undergraduate theses	18
Supervising of postgraduate theses	8
Member of the Supporting Committee of PhD students	10 (8 as advisor)
Educational material	4 textbooks
<b>RESEARCH ACTIVITIES</b>	
Publications in international peer-reviewed journals	39
Contributions in Proceedings of International Conferences	20
Contributions (only abstracts) in Proceedings of International Conferences	41
Contributions in Proceedings of Greek Conferences	33
Participation in research programs	21
Citations in Science Citation Index (self citations excluded)	364