

1. PERSONAL DETAILS

Surname / Name: Papaefthimiou Spiros
Date of birth: 6 October 1971
Current work status: Assistant Professor in Department of Production Engineering and Management, Technical University of Crete with specificity: "Systems and Technologies for Energy Management and Efficiency".
Tel: 28210 37428 (office) , 6978 836082 (mobile)
e-mail: spapaefthymiou@dpem.tuc.gr

2. EDUCATION

2001 : PhD, Physics Department, University of Patras
2001 : Master's Degree, Hellenic Open University
1997 : Master's Degree in Environmental Sciences, University of Patras
1995 : Bachelor's Degree, Physics Department, University of Patras

3. SCIENTIFIC – RESEARCH – PROFESSIONAL ACTIVITY

Publications in International Journals : 28
Publications in refereed International Scientific Conference Proceedings: 15
Citations: more than 500
Participation in refereed International Scientific Conferences : 35

4. RESEARCH INTERESTS

4.1 Energy saving devices – "Smart" materials for energy applications

- Experimental preparation and characterization of "smart" electrochromic glazing incorporating thin films.
- Theoretical design, modelling, preparation and characterization of low emissivity coatings (low-e coatings) for application in energy saving devices.

4.2 Study of advanced solar collectors and photovoltaics

- Design and experimental study of various types flat solar collectors: a. with or without transparent cover, b. with coloured absorber for aesthetic integration into building façades and roofs, c. with plain or selective absorber.
- Experience in designing, manufacturing and testing of stationary high-efficiency solar collector using asymmetric mirrors (CPC type).
- Study of high performance solar thermal collectors with reverse absorber.
- Design and experimental study of concentrating photovoltaic cells with enhanced performance for integration into building façades.

4.3 Thermal and energy characterization of building structural elements

- Thermal and energy characterization of building components (such as windows, frames, glazing, special walls, energy façades, insulation, etc.). Determination of thermal conductivity and thermal transmittance (U-Value) through experiments in Test Cells.
- Study of the energy performance of buildings incorporating "smart" energy glazing.

4.4 Environmental Systems Analysis: Life Cycle Assessment and Eco-efficiency analysis

- Life Cycle Assessment (LCA) and Eco-Efficiency analysis of energy saving applications.
- Development of a methodology for energy labelling of building elements (i.e. glazing) with a combination of life cycle analysis and ecological performance assessment.
- Combined environmental, energy and economic assessment of energy systems (wind-solar-photovoltaic plants, geothermal installations, etc.)

4.5 Management and modelling of Renewable Energy Sources (RES)

- Determination of necessary procedures for the integration of RES in remote communities. Environmental legislation. Public awareness issues on energy matters: energy savings in buildings, renewable energy for domestic use, large-scale projects.

4.6 Environmental and energy issues in maritime sector

- Energy analysis and cost-efficiency issues. Anticipated policies and market-based measures.
- Emissions reduction schemes for the maritime sector.

4. SELECTED PUBLICATIONS IN INTERNATIONAL SCIENTIFIC JOURNALS

1. Papaefthimiou S., Leftheriotis G. and Yianoulis P., "Study of electrochromic cells incorporating WO_3 , MoO_3 , WO_3 - MoO_3 and V_2O_5 coatings", *Thin Solid Films*, 343-344 (1999) 183.
2. Y. Tripanagnostopoulos, P. Yianoulis, S. Papaefthimiou, M. Souliotis and Th. Nousia, "Cost effective asymmetric CPC solar collectors", *Renewable Energy* 16 (1999) 628-631.
3. Leftheriotis G., Papaefthimiou S. and Yianoulis P., "Integrated low-emittance-electrochromic devices incorporating ZnS/Ag/ZnS coatings as transparent conductors", *Sol. Energy Mater. Sol. Cells*, 61 (2000) 107.
4. G. Leftheriotis, S. Papaefthimiou and P. Yianoulis, "Development of multilayer transparent conductive coatings", *Solid State Ionics* 136-137 (2000) 655.
5. Y. Tripanagnostopoulos, P. Yianoulis, S. Papaefthimiou and S. Zafeiratos, "CPC Solar Collectors With Flat Bifacial Absorbers", *Solar Energy* 69, Vol. 3 (2000) 191-203.
6. S. Papaefthimiou, G. Leftheriotis, and P. Yianoulis, "Study of WO_3 films with textured surfaces for improved electrochromic performance", *Solid State Ionics* 139 (2001) 135.
7. S. Papaefthimiou, G. Leftheriotis and P. Yianoulis, "Advanced electrochromic devices based on WO_3 thin films", *Electrochimica Acta* 46, 13-14 (2001) 2145.
8. G. Leftheriotis, S. Papaefthimiou, P. Yianoulis, A. Siokou, D. Kefalas, "Structural and electrochemical properties of opaque sol-gel deposited WO_3 layers", *Applied Surface Science* 218 (2003) 275-280.
9. E. Syrrakou, S. Papaefthimiou, P. Yianoulis, "Environmental assessment of electrochromic glazing production", *Solar Energy Materials and Solar Cells* 85 (2005) 205.
10. E. Syrrakou, S. Papaefthimiou, N. Skarpentzos and P. Yianoulis "Electrochromic windows: physical characteristics and environmental profile", *Ionics* 11 (3-4) (2005) 281.
11. S. Papaefthimiou, E. Syrrakou and P. Yianoulis, "Energy performance assessment of an electrochromic window", *Thin Solid Films* 502 (2006) 257.
12. E. Syrrakou, S. Papaefthimiou and P. Yianoulis, "Eco-efficiency evaluation of a smart window prototype", *Science of the Total Environment* 359 (2006) 267.
13. P.Y. Pennarun, P. Jannasch, S. Papaefthimiou, N. Skarpentzos and P. Yianoulis, "High coloration performance in electrochromic devices assembled with electrolytes based on a branched boronate ester polymer and $LiClO_4$ ", *Thin Solid Films* 514 (2006) 258.
14. S. Papaefthimiou, G. Leftheriotis, P. Yianoulis, T. J. Hyde, P. C. Eames, Y. Fang, P.-Y. Pennarun and P. Jannasch, "Development of electrochromic evacuated advanced glazing", *Energy and Buildings* 38 (2006) 1455.
15. S. Papaefthimiou, E. Syrrakou, P. Yianoulis "An alternative approach for the energy and environmental rating of advanced glazing: an electrochromic window case study", *Energy and Buildings* 41 (2009) 17.
16. G. Leftheriotis, S. Papaefthimiou, P. Yianoulis, "Electrochromic windows for energy saving applications in buildings: Material development and large scale device fabrication", *Multifunctional Materials and Devices* (2010) 114.
17. S. Papaefthimiou, E. Syrrakou, P. Yianoulis "Implementation of electrochromic windows in buildings: evaluation of their energy savings and environmental impact", *Multifunctional Materials and Devices* (2010) 196.
18. S. Papaefthimiou, "Chromogenic technologies: Towards the realization of smart electrochromic glazing for energy-saving applications in buildings", *Advances in Building Energy Research* 4 (2010) 77.
19. A. Maragkogianni, S. Papaefthimiou, C. Zopounidis, "Emissions trading schemes in the transportation sector", pp. 269-289, *Sustainable Technologies, Policies, and Constraints in the Green Economy; Advances in Environmental Engineering and Green Technologies Book Series*, IGI Global.