

# CURRICULUM VITAE

## **PERSONAL DETAILS**

**Name/surname:** Alexander E. Karantzalis  
**Date of Birth:** 14 June 1970  
**Place of Birth :** Athens  
**Marital Status:** Married, 2 children  
**Home Address :** Zossimadon & Papaflessa St., PEDINI, Ioannina, Greece  
**Tel:** 26510 09026 (work), 6945-799648 (Mobile)  
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## **EDUCATION & ACADEMIC TITLES**

- **Diploma Metallurgy Engineering:** October 1988 - September 1993  
National Technical University of Athens, Department of Mining and Metallurgy Engineering, Athens, Hellas  
*Total Mark:* 8,39/10  
**Diploma Thesis:** Laser surface alloying of Cu coated Al by CO2 laser.  
*Mark:* 10/10  
**Supervisor:** Dr. Chris Panagopoulos
- **Master of Science (M.Sc.)** "Advanced Materials and Manufacturing Processes" October 1993 - September 1994  
University of Nottingham, Department of Materials Science and Engineering, Nottingham, United Kingdom  
**Diploma Thesis:** Microwave Reaction Bonded Silicon Nitride.  
**Supervisor:** Dr. Jon Binner  
**Total MSc Mark: 67%**
- **Philosophy Doctorate (Ph.D.)** Advanced Materials : October 1994 – November 1997  
University of Nottingham, Department of Materials Science and Engineering, United Kingdom  
**Thesis:** The characterisation of Al based MMCs manufactured by a novel stir-casting method.  
**Supervisor:** Dr. Andrew R. Kennedy

## **FOREIGN LANGUAGES**

- *English (excellent)*
- *French (very good)*

## **PROFESSIONAL EXPERIENCE & ACTIVITY:**

- **1/2014 – to date:** Assistance Professor, Department of Materials Science and Engineering (D.M.S.E), University of Ioannina
- **5/2009 – 1/2014:** Lecturer, Department of Materials Science and Engineering (D.M.S.E), University of Ioannina.
- **10/2005 – 5/2009:** Adjunct Lecturer, Department of Materials Science and Engineering, University of Ioannina.

- **12/2003 – 9/2008:** Business Consultant at the C.E.T.D (Center of Entrepreneurial and Technological Development) of Western Greece Region.
- **10/2004 – 9/2005:** Laboratory collaborate, Department of Buildings Restoration, Technological Institute of Patras, Laboratory of Structural Materials.
- **3/2005 – 9/2005:** Laboratory collaborate, Department. of Materials Science, University of Patras, Materials Science I (metallography).
- **12/2001 – 12/2003:** Dept. of Research & Development Supervisor, Winterstone S.A., Diamond Cutting Tools Industry).
- **4/2001 – 12/2001:** Post Doctoral researcher at ICEHT/FORTH, GREECE, European project MEGAWIND, supervisor: Professor K.Galotis. The project was dealing with the environmental response and its effect on the mechanical properties of fibre reinforced polymer materials.
- **1997 – 1998:** Post Doctoral researcher at Nottingham University UK and Union Miniere (Metal Powders Manufacturing Industry) Belgium, supervisor Professor J.V. Wood. The project was dealing with the development of new bond (matrix) metallic materials for the production of diamond cutting tools.
- **8/1992 – 10/1992:** Student trainee at Firogenis S.A. solar and air conditioning systems. .

### **RESEARCH INTERESTS**

- Development and characterization of intermetallics and intermetallic based composite materials.
- Development and characterization of Al based composite materials.
- Production methods for monolithic alloys and alloy based composite materials (casting, powder metallurgy, vacuum arc melting).
- Solidification and crystal growth phenomena.
- Wear phenomena and mechanisms.
- Heat treatment of ferrous and non ferrous alloys and composites.
- Thermal sprayed coatings.
- Aqueous corrosion.
- Wetting phenomena.
- Grain refinement phenomena.

### **INDUSTRIAL EXPERIENCE**

Sub-director of the R&D department of W.DIAMANT (ex-Winter) of the WHEELABRATOR Group of Companies. Among the activities and the responsibilities of this position were the follows:

- Theoretical approach of the appropriate for diamond tools applications metallic alloys.
- Evaluation of metal powders (method of production, morphology, properties).
- Cold pressing behaviour of metal powders with or without the presence of diamond grains.
- Sintering behaviour of metal powders with or without the presence of diamond grains.
- Diamond grains behaviour evaluation at high temperatures.
- Diamond grains-metal matrix interface properties during sintering.
- Wear assessment of potential for cutting tools alloys.
- Wear assessment of diamond grains.
- Cutting performance evaluation of diamond tools.
- Mechanical alloying.

- Economical evaluation of diamond tool production.

During this involvement, three different metallic matrices were arisen based on the Fe-Co-Cu-W system and diamond tools of different morphologies were produced and lunched for servicing, which are still in use worldwide.

#### ***PARTICIPATION IN RESEARCH FUNDING PROGRAMS***

- “Development and Characterisation of composite materials with crystalline and amorphous Al matrix and reinforcing phase of ceramic nanoparticles through the use of low cost techniques”, JOINT RESEARCH AND TECHNOLOGY PROGRAMMES 2009 – 2011, HUNGARY – GREECE, MINISTRY FOR DEVELOPMENT **GENERAL SECRETARIAT FOR RESEARCH & TECHNOLOGY, Project Number HUN90 (budget: 15.000 €**, participation as a researcher).
- Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) - Research Funding Program: **THALES (Code 668 or NTUA202)**: Development of ceramic-matrix composite nano-materials with metallic inclusions - investigation of mechanical and physiochemical properties with experimental, theoretical and calculation methods (NAMCO). Coordination by the National Technical University of Athens. coordinator of the research group of the University of Ioannina (Total budget 521.739 €, DMSE-UIO budget 90.000 €, participation as a researcher).

#### ***CONTRIBUTION IN RESEARCH FUNDING PROPOSAL PREPARATION (non-succeeded)***

- Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) - Research Funding Program: THALES, “Development, characterisation and modeling of micro- and nano – structured commercial aluminium alloys reinforced by ceramic nano-particles for applications in aggressive environments”
- Operational Program "Education and Lifelong Learning": Supporting Post Doctoral Researchers, “New approaches on the development and characterisation of Mo/Mosi2 composites emphasizing on the manufacturing process, ductility increase, new secondary phase reinforcement and degradation behaviour” (passed the first evaluation step, rejected at the second)
- Operational Program "Education and Lifelong Learning" of the National Strategic Reference Framework (NSRF) - Research Funding Program: HERACLITUS II, “Preparation and characterisation of Al matrix composite materials reinforced with ceramic phase nanoparticles”

#### ***PARTICIPATION IN 3MEMBERED AND 7MEMBERED COMMITTEES OF MASTER AND PhD THESES AT D.M.S.E-UIO***

1. Participation in the 7membered committee of the **PhD** thesis of **Vassiliki Kosma** (“Polymeric and composite, compact and porous membranes and fibres from fluid precursors”, 2009)
2. Participation in the 7membered committee of the **PhD** thesis of **Dimitrios Zois** (“Development and characterization of amorphous coatings through thermal spray techniques”, 2010)
3. Participation in the 3membered committee of the **PhD** thesis of **Dimitrios Sioulas** (“Corrosion of nanostructured cermet coatings”, 2011)
4. Participation in the 3membered committee of the **MSc** thesis of **Violetta Moulia** (“Study of toughness and wear resistance of nanostructured WC-Co-Cr thermally sprayed coatings”, 2012)
5. Participation in the 3membered committee of the **MSc** thesis of **Amalia Marinou** (“Development and characterization of Co based coatings developed by thermal spraying” in writing up stage)
6. Participation in the 3membered committee of the **MSc** thesis of **Athanassios Sfikas** (“Study of the surface degradation of cast complex Al-Co metallic alloys”, writing up stage)
7. Participation in the 3membered committee of the **MSc** thesis of **Amalia Siatou** (“Ioannina region archaeological artifact corrosion simulation”, writing up stage)
8. Participation in the 3membered committee of the **PhD** thesis of **Hercules Mavros** (“Development of Aluminium Matrix Composites and Evaluation of their Corrosion and Wear Behaviour”, writing up stage)

### **TEACHING EXPERIENCE (UNDERGRADUATE COURSES – LABORATORY CLASSES)**

#### **5/2009 – to date: As Lecturer DMSE-UIO**

1. Physical Metallurgy I (5<sup>th</sup> semester), compulsory, 4 semesters
2. Materials Laboratory IV (Metallurgy Laboratory), (8<sup>th</sup> semester), compulsory, 3 semesters
3. Fundamentals of Powder Metallurgy (7<sup>th</sup> semester), elective, 4 semesters
4. Metal Working, (8<sup>th</sup> semester), elective, 3 semesters
5. Introduction to Welding Technology, (8<sup>th</sup> semester), elective, 3 semesters
6. Aluminium Technology, (9<sup>th</sup> semester), elective, 3 semesters (in collaboration with M. Georgatis, Specialized Research and Teaching Personnel of Metallurgy Laboratory)
7. Supervision/Co-supervision of more than 35 Diploma Theses.

#### **10/2005 – 5/2009: As Adjunct Lecturer DMSE-UIO**

1. Physical Metallurgy I (5<sup>th</sup> semester), compulsory, 4 semesters (in collaboration with Assoc. Professor A. Lekatou – DMSE)
2. Materials Laboratory IV (Metallurgy Laboratory), (8<sup>th</sup> semester), compulsory, 3 semesters (in collaboration) with the other members of Metallurgy Laboratory)
3. Forming and Welding methods of Metallic Materials (metal working, powder metallurgy, welding) (7<sup>th</sup> semester), elective, 4 semesters

#### **10/2004 – 9/2005: Laboratory Collaborate, Department of Building Restoration, Technological Institute of Patras**

1. Structural Materials Technology (Laboratory), (3<sup>rd</sup> semester), compulsory, 2 semesters

#### **3/2005 – 9/2005: Laboratory Collaborate, Department of Materials Science, University of Patras**

1. Materials Science I (Laboratory), (2<sup>nd</sup> semester), compulsory, 1 semester.

### **ADMINISTRATIVE WORK AS FACULTY MEMBER OF DMSE-UIO**

- a) Member of the faculty General Assembly of DMSE-UIO since May 2009
- b) Member of the Professional Rights committee
- c) Vice member of the New Materials Science and Engineering Building committee
- d) Member of the purchasing (equipment and other supplies) committee for the year 2010-2011.
- e) New Building supervisor (lighting, air conditioning, heating)
- f) Student Academic Supervisor at the Training Program/U.O.I

### **SCIENTIFIC COLLABORATIONS**

1. **With other faculty members of the DMSE-UIO:** Assoc. Prof. A. Lekatou, Prof. M. Karakassides, Assoc. Prof. S. Agathopoulos, Assoc. Prof. P. Patsalas, Assoc. Prof. D. Gournis, Assis. Prof. N. Barkoula.
2. **ICEHT/FORTH:** Research Director V. Burganos, Principal Scientist V. Dracopoulos.
3. **Laboratory of Technology and Strength of Materials, University of Patras** Prof. S. Pantelakis
4. **Department of Physical Metallurgy**, University of Miskolc, Hungary, Professor Z. Gacsi
5. Department of Nanotechnology, University of Miskolc, Hungary, Professor. G. Kaptay.
6. **Department of Mechanical, Materials and Manufacturing Engineering**, University of Nottingham, Associate Professor A. R. Kennedy.
7. **Department of Metal Science and Heat Treatment of Metals**, Pryazovzkiy State Technical University, Ukraine, Prof. V.G. Efremenko.

### **SCIENTIFIC SOCIETY – ORGANIZATION MEMBER**

- Member of the Technical Chamber of GREECE

- Member of the Hellenic Metallurgical Society

#### **CONFERENCE COMMITTEE MEMBER**

- Member of the Scientific Committee of the 5<sup>th</sup> Pan Hellenic Conference in Metallic Materials (October 2013, Volos, GREECE)

#### **INTERNATIONAL JOURNAL REVIEWER**

- Acta Materialia
- International Journal of Cast Metals Research
- Materials Chemistry and Physics
- Journal of Materials Engineering and Performance
- Advanced Composites Letters
- Composites Part A

#### **LECTURE NOTES**

- Forming and Welding methods of Metallic Materials (2006)
- Metal Working (2007)
- Introduction to Powder Metallurgy (2008)
- Introduction to Welding Technology (2009)

#### **PUBLICATIONS IN PEER-REVIEWED JOURNALS**

1. A. Lekatou, **A.E. Karantzalis**, A. Evangelou, V. Gousia, G. Kaptay, Z. Gacsi, P. Baumli, A. Simon, Aluminium reinforced by WC and TiC nanoparticles (ex-situ) and aluminide particles (in-situ): Microstructure, wear and corrosion behavior, Materials and Design, 2014, DOI: 10.1016/j.matdes.2014.08.040.
2. **Karantzalis, A.E.**, Letatou, A., Evaggelidou, M. Microstructure and sliding wear assessment of Co-TiC composite materials, International Journal of Cast Metals Research, 2014, vol. 27, no. 2, p. 73-79
3. Grana, E., Katsigiannopoulos, D., **Karantzalis, A.E.**, Baikousi, M., Avgeropoulos, A. "Synthesis and molecular characterization of polythiophene and polystyrene copolymers: Simultaneous preparation of diblock and miktoarm copolymers", European Polymer Journal, 2013, vol. 49, No. 5, p. 1089-1097.
4. E. Georgatis, A. Lekatou, **A.E. Karantzalis**, H. Petropoulos, S. Katsamakis, and A. Poulia, "Development of a Cast Al-Mg<sub>2</sub>Si-Si In Situ Composite: Microstructure, Heat Treatment, and Mechanical Properties", J. of Materials Engineering and Performance, 2013, vol. 22, no. 3, p. 729-741.
5. H. Mavros, **A.E. Karantzalis**, A. Lekatou, "Solidification observations and sliding wear behaviour of cast TiC particulate-reinforced AlMgSi matrix composites", Journal of Composites Materials, 2013, vol. 47, No. 17, p. 2149-2162.
6. A. Lekatou, A.K. Sfikas, **A.E. Karantzalis**, D. Sioulas, "Microstructure and corrosion performance of Al-32%Co alloys", Corrosion Science, vol. 63, 2012, p. 193-209.
7. **A.E. Karantzalis**, A. Lekatou, K. Tsirka, "Solidification observations and sliding wear behaviour of arc melting processed Ni-Al-TiC composites", Materials Characterization, 2012, vol. 69, p. 97-107.
8. **A.E. Karantzalis**, A. Kapoglou, H. Mavros, A. Lekatou\*, "Phase transformations and microstructural observations during sub-critical heat treatment of a high chromium cast iron", in press J. Materials Engineering and Performance. Vol. 21, (6), 2012, p. 1030-1039.
9. **Karantzalis, A.E.**, Lekatou, A., Georgatis, E., Arni, Z., Dracopoulos, V., "Solidification observations of vacuum arc melting processed Fe-Al-TiC composites: TiC precipitation mechanisms", Materials

Characterization 62 (12) , 2011, pp. 1196-1204.

10. Zois, D., Lekatou, A., Vardavoulias, M., Vaimakis, T., **Karantzalis, A.E.**, "Partially amorphous stainless steel coatings: Microstructure, annealing behavior and statistical optimization of spray parameters", Surface and Coatings Technology, vol. 206, 2011 , pp. 1469-1483.
11. **A.E. Karantzalis\***, A. Lekatou, E. Georgatis, V. Poulas, H. Mavros, "Casting-based Production of Al-TiC-AlB<sub>2</sub> Composite Material through the Use of KBF<sub>4</sub> Salt" J. Materials Engineering and Performance, 20 (2), 2011, pp. 198-202
12. A.Lekatou\*, D. Zois, **A.E. Karantzalis**, D. Grimanelis, "Analysis of the electrochemical behaviour of cermet coatings with a bond coat on Al7075: pseudopassivity, localized corrosion and galvanic effect considerations in a saline environment", Corrosion Science, 52 (8), 2010, pp. 2616-2635.
13. **A.E. Karantzalis**, A. Lekatou\* , E. Georgatis, Th. Tsiliogiannis, H. Mavros, "Solidification Observations of Dendritic Cast Al-alloys Reinforced with TiC particles", J. Materials Engineering and Performance, 19 (9), 2010, pp. 1268-1275.
14. **A.E. Karantzalis\***, A. Lekatou, E. Georgatis, H. Mavros, "Solidification behaviour of ceramic particle reinforced al – alloy matrices", J. Materials Science, vol.45, no.8, 2010, p. 2165-2173.
15. **A.E. Karantzalis**, A. Lekatou\*, E. Diavati, "Effect of destabilization heat treatments on the microstructure of high-chromium cast iron: a microscopy examination approach", J. Materials Engineering and Performance, 18(8), 2009, p. 1078-1085.
16. **A.E. Karantzalis\***, A. Lekatou, E. Georgatis, V. Poulas, H. Mavros, "Microstructural observations of cast Al-Si-Cu-TiC composite material, J. Materials Engineering and Performance vol. 19, no.4, 2010, p. 585-590.
17. **A.E. Karantzalis**, A. Lekatou\*, H. Mavros, «High chromium white irons, microstructure, carbide precipitation, sub-critical heat treatment, austenite destabilization», Intern. J. Cast Metals Research, 2009, 22(6), 448-456.
18. **A.E. Karantzalis**, A. Lekatou and H. Mavros, "Microstructural Modifications of As-Cast High-Chromium White Iron by Heat Treatment, Journal of Materials Engineering and Performance, vol.18, No. 2, 2009, p. 174-181.
19. Lekatou A., Regoutas E., **Karantzalis A.E.** "Corrosion behaviour of cermet-based coatings with a bond coat in 0.5M H<sub>2</sub>SO<sub>4</sub>", Corrosion Science, 50 (12), 2008, p.3389-3400.
20. A.R.Kennedy and **A.E.Karantzalis**, "The Incorporation of Ceramic Particles into Molten Aluminium and the relationship to Contact Angle data", Materials Science and Engineering, A264, 1999, pp 122-129
21. A.R.Kennedy, **A.E.Karantzalis** and S.M.Wyatt, "The Microstructure and the Mechanical Properties of TiC and TiB<sub>2</sub> reinforced Cast Metal Matrix Composites", Journal of Materials Science, 34, 1999, pp 933-940
22. **A.E.Karantzalis** and A.R.Kennedy, "Nucleation Behaviour of TiB<sub>2</sub> Particles in Pure Aluminium and the Effect of Elemental Additions", Materials Science and Technology, 14, 1998, pp 1092-1096
23. **A.E.Karantzalis**, S.M.Wyatt and A.R.Kennedy, "The Mechanical Properties of Al – TiC Metal Matrix Composites Fabricated by a Flux – Casting Technique", Materials Science and Engineering, A237, 1997, pp 200-206
24. A.R.Kennedy and **A.E.Karantzalis**, "The Grain Refining Action of TiB<sub>2</sub> and TiC Particles added to Al by a Stir-Casting Method" Materials Science Forum, 217-222, 1996, pp 253-258.

## **PATENT**

1. A.R Kennedy, **A.E.Karantzalis**, J.V.Wood, J.D.Ellis, J.L.F.Kellie, "Metal Matrix Composites" UK Patent, GB 2316092A, 1998, International Publication Number WO98/06880.

## **PUBLICATIONS IN INTERNATIONAL CONFERENCE PROCEEDINGS**

1. A.K. Sfikas, A. Lekatou\*, **A. E. Karantzalis**, D. Sioulas, "Microstructure and Corrosion Resistance of Aluminum Alloys Containing Complex Metallic Alloy Phases", ICEAF –III, 3rd Intern. Conf. Engineering against Fracture, Kos, 26-28 June 2013, Greece.
2. **A.E. Karantzalis\***, A. Lekatou\*, A. Evangelou, V. Gousia, C. Miskaki, A. Sfikas, D. Sioulas, Z. Gacsi, P. Baumli, G. Kaptay, A. Makszimus, "Microstructure, corrosion and wear resistance evaluation of aluminium matrix composites reinforced by TiC and WC nanoparticles", ICEAF –III, 3rd Intern. Conf. Engineering against Fracture, Kos, 26-28 June 2013, Greece.
3. A. Poulia, **A.E. Karantzalis**, A. Lekatou\*, Evaluation of Al-Mg<sub>2</sub>Si in-situ composites, further reinforced by TiC particles after solution and aging heat treatments, 9th International Conference on Composite Science and Technology, 24-26 April 2013 - Sorrento, Italy.
4. **A.E. Karantzalis\***, A. Lekatou\*, V. Gousia, A. Evangelou, Z. Gacsi, P. Baumli, G. Kaptay, A. Makszimus, Flux assisted casting preparation and surface property evaluation of aluminium matrix composites reinforced with carbide nanoparticles, 9th International Conference on Composite Science and Technology, 24-26 April 2013 - Sorrento, Italy.
5. D. Zois\*, A. Lekatou, M. Vardavoulias, **A.E. Karantzalis**, A. Vazdirvanidis, "Deposition and characterization of thermally sprayed coatings prepared by a nanostructured Martensitic Steel Powder", 2012 Int. Thermal Spray Conf., 21-25 May 2012, Houston, Texas.
6. Siatou A., A. Lekatou, **A.E. Karantzalis**, D. Sioulas, "Corrosion of archaeological bronze in non-hostile burial environment", Int. Symp: History, Technology and Conservation of Ancient Metal, Glasses and Enamels", 16-19 November 2011, Cotsen Hall, The American Scholl of Classical Studies at Athens, Athens, Greece.
7. D. Sioulas, A. Lekatou, D. Grimanelis, **A.E. Karantzalis**, Corrosion and Wear Resistance of HVOF Micro- and Nano- Cermet Coatings on Al 7075, 2<sup>nd</sup> International Conference of Engineering Against Fracture (ICEAF II), 22-24 June 2011, Mykonos, GREECE.
8. **A.E. Karantzalis**, A. Lekatou, K. Leontaris, "Synthesis and Characterization of Al-based MMCs Reinforced with Ceramic Nanoparticles", Cast Composites 2009, 11-14 Oct. 2009, Krakow, Poland
9. Ch. I. Sarafoglou, D.I. Pantelis, **A. Karantzalis**, «Surface treatments of valves materials and their effects on surface characteristics», 2<sup>nd</sup> International Conference in Manufacturing Engineering, Kassandra,- Chalkidiki, Greece, 5-7 October 2005, p. 443-452.
10. A.R.Kennedy and **A.E.Karantzalis**, "The Incorporation and Redistribution Behaviour of ceramic Particles in Liquid Aluminium and the Relation to their Wetting Characteristics", proc. "The Second International Conference on High Temperature Capillarity", Krakow, June 1997, ed. N.Eustathopoulos and N.Sobczack, pp 328-333.

## **PUBLICATIONS IN NATIONAL CONFERENCES PROCEEDINGS**

1. A. K. Sfikas, A. Lekatou, **A.E. Karantzalis**. D. Sioulas, "The role of complex metallic alloys on the electrochemical behaviour of the Al-Co system", 5<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Volos, 21-22 November, 2014.
2. A. Lekatou, A.K. Sfikas, **A.E. Karantzalis**, "The effect of heat treatment on the corrosion resistance of Al-Co alloys", 5<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Volos, 21-22 November, 2014.

3. A. Lekatou, **A.E. Karantzalis**, A. Koleti, V. Moulia, D. Sioulas, D. Grimanelis, "Study of the nanostructured cermet coating fracture toughness", 5<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Volos, 21-22 November, 2014.
4. **A.E. Karantzalis**, A. Lekatou, A. Evangelou, V. Gousia, Z. Gacsi, P. Baumli, G. Kaptay, A. Makszimus, "Microstructure of composite materials with Al matrix reinforced by carbide nanoparticles: evaluation of corrosion and wear resistance", 5<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Volos, 21-22 November, 2014.
5. **A. E. Karantzalis**, A. Lekatou, Ch. Miskaki, A. Evangelou, V. Gousia, Z. Gacsi. P. Baumli, G. Kaptay, A. Makszimus, "Microstructure and corrosion resistance of Al matrix composites reinforced by TiC and WC nanoparticles produced by powder metallurgy method", 5<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Volos, 21-22 November, 2014.
6. A. Poulia, A. Lekatou, **A.E. Karantzalis**, E. Georgatis, "Heat treatment and wear/corrosion properties of AlMgSi Alloy", 5<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Volos, 21-22 November, 2014.
7. D. Sioulas, A. Lekatou, D. Grimanelis, **A.E. Karantzalis**, "Corrosion and wear behaviour of nanostructured and conventional WC-Co-Cr coating", 5<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Volos, 21-22 November, 2014.
8. H. Mavros, **A.E. Karantzalis**, A. Lekatou, "Al matrix composites reinforced by ceramic particulates: a comparative wear and corrosion resistance study", 5<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Volos, 21-22 November, 2014.
9. **A.E. Karantzalis**, A. Lekatou, E. Georgatis, E. Mpaltagiannis, "Synthesis and study fo the aqueous corrosion and wear behaviour of Fe-Al aluminides reinforced by TiB<sub>2</sub> particulates", 5<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Volos, 21-22 November, 2014.
- 10.**A.E. Karantzalis**, A. Lekatou, D. Mpsoulis, E. Georgatis, V. Drakopoulos, "Effect of heat treatment on the corrosion and wear resistance of Fe-Al aluminides, reinforced by TiB<sub>2</sub>", 5<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Volos, 21-22 November, 2014.
- 11.**A.E. Karantzalis**, A. Lekatou, E. Karapanou, E. Georgatis, "Production and behaviour of Fe-Al aluminides reinforced by VC in aqueous corrosion and wear", 5<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Volos, 21-22 November, 2014.
- 12.**K. Leontaris, A. Agathopoulos, A.E. Karantzalis, A. Lekatou**, "Power metallurgy produced and mechanical properties of Al matrix composites reinforced by WC nanoparticles", 5<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Volos, 21-22 November, 2014.
- 13.**K. Leontaris, S. Petousi, A. Lekatou, A.E. Karantzalis** "Reinforcement of Al with nano-TiC through casting and powder metallurgy methods", 4<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Thessaloniki, 4-5 November, 2010.
- 14.**A. Sfikas, A. Lekatou, A.E. Karantzalis, D. Sioulas**, "Manufacture and characterization of binary Al-Co alloy", 4<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Thessaloniki, 4-5 November, 2010.
- 15.**H. Mavros, A. Lekatou, A.E. Karantzalis, V. Poulas, E. Georgatis**, "Production of Al-TiC-AlB<sub>2</sub> composite material through the use of KBF<sub>4</sub> salts", 4<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Thessaloniki, 4-5 November, 2010.
- 16.**A. Siatou, A. Lekatou, A.E. Karantzalis**, "Corrosion of copper and ferrous archeological artifacts form the Region of Ipirus", 4<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Thessaloniki, 4-5 November, 2010.
- 17.**A. Serafis, A. Lekatou, D. Sioulas, A.E. Karantzalis**, "Behaviour of cast hyperaustenitic steel at high temperature oxidation" 4<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Thessaloniki, 4-5 November, 2010.
- 18.**D. Sioulas, A. Lekatou, D. Grimanelis, A.E. Karantzalis**, "Behaviour of nanocrystalline ceramometallic coatings in wear and exposure to acid rain simulated environment", 4<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Thessaloniki, 4-5 November, 2010.
- 19.**A. Marinou, A. Lekatou, A. Poulaki, M. Vardavoulias, A.E. Karantzalis, D. Sioulas, H. Mavros**, "Comparative study of austenitic stainless coatings with thermal spraying technique", 4<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Thessaloniki, 4-5 November, 2010.



- 20.D. Zois, A. Lekatou, M. Vardavoulias, A. Vazdirbanidis, **A. Karantzalis**, "Effect of partially amorphous ferrous alloy thermal spray parameter on the coating corrosion behaviour", 4<sup>th</sup> Pan Hellenic Conference in Metallic Materials, Thessaloniki, 4-5 November, 2010.
- 21.Lekatou A., Sioulas D. Grimanelis D., Karanika A., **Karantzalis A.E.**, "Nanocrystalline ceramometallic coating corrosion resistance in sea environment", 5<sup>th</sup> Pan Hellenic Conference in Ceramic Materials, 22-23 October 2009, Athens.
- 22.**A. E. Karantzalis**, A.E. Lekatou, P. Logothetis, "Study of the heat treatment effect on the microstructure, mechanical behaviour and corrosion resistance of Al bronze Cu-9Al-1Ti", 3<sup>rd</sup> Pan Hellenic Conference in Metallic Materials, Patras, 6-7 December, 2007.
- 23.**A.E. Karantzalis**, A. Lekatou, H. Mavros, G. Karamanis, "Study of the effect of heat treatment and alloying additions on the microstructure and mechanical behaviour of high chromium white cast irons", 3<sup>rd</sup> Pan Hellenic Conference in Metallic Materials, Patras, 6-7 December, 2007.
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#### **SCIENTIFIC WORK WORLDWIDE RECOGNITION**

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