

# ATHANASIOS T. BALAFOUTIS



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## EDUCATION

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**2006-2012** Agricultural University of Athens

PhD in Experimental Investigation of Vegetable Oil Use as Fuel in Compression Ignition Engines of Agricultural Tractors

Degree Grade: 10/10

**2004** School of Infantry Reserve Officers (Σ.Ε.Α.Π.)

**2002-2003** Cranfield University

MSc Agricultural & Environmental Engineering

Degree Grade: 72% (Distinction)

**1997-2003** Agricultural University of Athens

Department of Natural Resources & Agricultural Engineering

Section of Agricultural Constructions & Agricultural Engineering

Degree Grade: 7.11/10

**1993-1996** 1<sup>o</sup> General Lyceum of New Halkidona, Athens, Greece

General Grade: 15/20

## SCHOLARSHIPS

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Full tuition fees bursary from Cranfield University, UK for the completion of a MSc Program named “Agricultural & Environmental Engineering”

6-month scholarship for joint work within the PhD program with University of Coimbra, Portugal by Greek National Scholarship Foundation (IKY)

*Publications in Journals*

- 1 **A.T. Balafoutis**, E. Papageorgiou, Z. Dikopoulou, S. Fountas, G. Papadakis, “Sunflower oil fuel for diesel engines: Experimental investigation and optimum engine setting evaluation using MCDM approach”, (Submitted to International Journal of Green Energy)
- 2 **Athanasios Balafoutis**, Spyros Fountas, Athanasios Natsis, and George Papadakis “Performance and emissions of sunflower, rapeseed and cottonseed oils as fuels in an agricultural tractor engine”, *ISRN Renewable Energy*, vol. 2011, Article ID 531510, 12 pages, 2011. doi:10.5402/2011/531510
- 3 R.J.Godwin, M.J. O’Dogherty, C. Saunders, **A.T. Balafoutis**, “A force prediction model for mouldboard ploughs incorporating the effects of soil characteristic properties, plough geometric factors and ploughing speed”, *Biosystems Engineering*, 97, 117-129, 2007 (AWARDED).

*Publications in International Conferences*

- 1 **Athanasios Balafoutis**, Elpiniki Papageorgiou, Zoumpoulia Dikopoulou, Spyros Fountas, Athanasios Natsis, George Papadakis, “Application of expert systems to determine optimal biofuel type – engine tuning configuration”, *Proceedings of the 19<sup>th</sup> European Biomass Conference & Exhibition*, Berlin, Germany, June 2011.
- 2 **Athanasios Balafoutis**, Fausto Freire, George Papadakis, “Life Cycle Assessment of Sunflower oil produced in Greece and used as fuel in tractor diesel engines”, *Proceedings of the European Conference on Agricultural Engineering*, Clermont-Ferrand, France, September 2010.
- 3 **Athanasios Balafoutis**, Loukia Geronikolou, Athanasios Natsis, George Papadakis, “Injection Timing and Injector Protrusion tuning in a diesel engine of an agricultural tractor for optimization of the use of sunflower oil based fuels using a multi-criterion model”, *Proceedings of the 17<sup>th</sup> European Biomass Conference & Exhibition*, Hamburg, Germany, June 2009.
- 4 **Athanasios Balafoutis**, Athanasios Natsis, Dimitrios Lois, George Papadakis, “Injection timing impact on an agricultural tractor engine performance using sunflower oil blends with diesel as fuel”, *Proceedings of the International Conference RENEWABLE ENERGY 2008*, Busan, Korea, October 2008.
- 5 Alexander Hoeldrich, Rainer Janssen, Peter Helm, Jonas Dahl, Wilfried Pichler, Michael Golser, Andre Faaij, Martin Junginger, Richard Sikkema, Stephane Senechal, Stefano Capaccioli, Katarzyna Grecka, Edmund Wach, Maria Habicht, Adrienn Csekoe, Attila Udersky, Christoph Barel, **Athanasios Balafoutis**, Stamatia Voulgaraki, George Papadakis, Sandra Hayes, Ian Byrne, “The PELLETS@LAS Project”, *Proceedings of the 16<sup>th</sup> European Biomass Conference & Exhibition*, Valencia, Spain, June 2008.
- 6 **Athanasios Balafoutis**, Athanasios Natsis, Dimitrios Lois, George Papadakis, “Injector protrusion impact on an agricultural tractor engine performance using

sunflower oil blends with diesel as fuel”, Proceedings of the European Conference on Agricultural Engineering, Crete, Greece, June 2008.

- 7 Martin Junginger, Alexander Hoeldrich, Jonas Dahl, Richard Sikkema, Andre Faaij, Rainer Janssen, Peter Helm, Wilfried Pichler, Michael Golser, Stephane Senechal, Stefano Capaccioli, Katarzyna Grecka, Edmund Wach, Malgorzata Bastian, Maria Habicht, Adrienn Csekoe, Attila Udersky, Christoph Barel, **Athanasios Balafoutis**, Stamatia Voulgaraki, George Papadakis, Sandra Hayes, Ian Byrne, “The PELLETS@LAS Project – A comprehensive European Pellet Market Overview”, Proceedings of World Bioenergy 2008, Jonkoping, Sweden, May 2008.
- 8 **Athanasios Balafoutis**, Dionysios Melas, Athanasios Natsis, Areti Papagianopoulou, George Papadakis, “Comparison of the use of sunflower, cotton and rape seed crude oils as fuels in compression ignition engines”, Proceedings of the 3<sup>rd</sup> International Bioenergy Conference and Exhibition, Jyväskylä, Finland, September 2007.
- 9 **Athanasios Balafoutis**, Dionysios Melas, Athanasios Natsis, Areti Papagianopoulou, George Papadakis, “Experimental investigation of the use of sunflower crude oil as fuel in a compression ignition engine”, Proceedings of the 15<sup>th</sup> European Biomass Conference & Exhibition, Berlin, Germany, May 2007.
- 10 **Athanasios Balafoutis**, Dionysios Melas, Athanasios Natsis, Areti Papagianopoulou, George Papadakis, “Experimental investigation on the use of sunflower crude oil as fuel in a compression ignition engine”, Proceedings of the World Congress of Agricultural Engineering, Bonn, Germany, September 2006.

#### *Publications in National Conferences*

- 1 Athanasios Dedousis, **Athanasios Balafoutis**, Athanasios Natsis, “Review: Mechanical intra-row weed control”, Proceedings of 7<sup>th</sup> National Conference on Agricultural Engineering, Athens, Greece, November 2011.
- 2 **Athanasios Balafoutis**, Areti Papagiannopoulou, Loykia Geronikolou, Athanasios Natsis, George Papadakis, “Optimization of non-esterified sunflower oil as fuel in a diesel engine by adjusting injection timing and injector protrusion using a multi-criteria model”, Proceedings of 6<sup>th</sup> National Conference on Agricultural Engineering, Thessaloniki, Greece, October 2009.
- 3 **Athanasios Balafoutis**, Dionysios Melas, Athanasios Natsis, Areti Papagiannopoulou, George Papadakis, “Experimental Investigation of Sunflower oil/diesel blends as fuel in comparison to diesel fuel in a CI engine”, Proceedings of 5<sup>th</sup> National Conference on Agricultural Engineering, Larissa, Greece, October 2007.

#### *Thesis*

- 1 PhD Thesis : “Experimental Investigation of Vegetable Oil Use as Fuel in Compression Ignition Engines of Agricultural Tractors”
- 2 MSc Project : “Determination of the Performance of shallow high-speed

mouldboard ploughs”

- 3 Diploma Thesis: “Cultivation Methods & Techniques of tobacco plantations in Greece”

*Project Reports*

- 1 Report “Waste Cooking Oil (WCOs) and Animal Fats (AFs) as feedstock for biodiesel production”, HELLAS OIL Biodiesel Company Project
- 2 Report “Life Cycle Analysis of biodiesel production in Greece from different oil crop feedstock”, CATOIL Biodiesel Company Project
- 3 Report “Greece – MBP pre-feasibility study”, PELLETS@LAS Project
- 4 Report “Legal Framework for MBP Utilization”, PELLETS@LAS Project
- 5 Country Report “Greece”, PELLETS@LAS Project
- 6 Final Report “Possible feedstock for biodiesel production in Greece”, GREEK BIODIESEL Project
- 7 Final Report “Effects of the use of vegetable oils as fuels in CI engines”, PYTHAGORAS II Project

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## WORKING EXPERIENCE

*Research work*

October 2011 – Today

“Agriculture and Energy Efficiency”, AGREE, Research program of the European Commission, (FP7).

May 2011 – Today

“Triglycerides from fruit residues – potentials for biodiesel production”, Research program in collaboration with a biodiesel production company named ADRIATICA OIL.

April 2011 – Today

“Microalgae production using Glycerol as a partial substrate”, Research program in collaboration with a biodiesel production company named CATOIL.

April 2011 – January 2012

“Used cooking oil and animal fats as feedstock for biodiesel production”, Research program in collaboration with a biodiesel production company named HELLAS OIL.

May 2010 – Today

“Regional Networks for the development of a Sustainable Market for Bioenergy in

Europe”, BIOREGIONS, Research program of the European Commission, (Intelligent Energy).

May 2010 – January 2011

“Life Cycle Analysis of biodiesel production in Greece using different vegetable oils as feedstock”, Research program in collaboration with a new established biodiesel production company names CATOIL.

February 2010 – August 2010

“Biofuel systems for transportation in Portugal: A “well-to-wheels” integrated multi-objective assessment, Research program funded by the Portuguese Science & Technology Foundation.

November 2009 – February 2010

“Investigation of Desalination Techniques for Sea and Brackish Water”, Research program funded by Agricultural University of Athens.

October 2007 – December 2009

“Development & Promotion of a transparent European Pellets Market – Creation of a European real-time Pellets Atlas”, PELLETS@LAS, Research program of the European Commission, (Intelligent Energy).

February 2007 – August 2008

“Energy Crops – Production, Utilization & Trading of Biofuels”, Training Seminar funded by the Greek Ministry of Development.

July 2007 – September 2007

“Alternative Fuels for Gas Turbines”, AFTUR, Research program of the European Commission, (FP5)

November 2005 – June 2007

“Development of new chemical processes for the production of Greek biodiesel from biomass and its uses in Greek market”, GREEK BIODIESEL, Research program of the Greek Ministry of Development.

May 2005 – April 2007

“Experimental study of the production chain of non-esterified (crude) vegetable oils and testing them as fuels in internal combustion engines of agricultural machinery”, PYTHAGORAS II, Research program of the Greek Ministry of Education.

October 2005 – December 2005

“Reformation of the undergraduate study program of the Department of Natural Resources & Agricultural Engineering of Agricultural University of Athens”, Program of the Greek Ministry of Education.

### *Teaching Experience*

January 2006 – Today

Teaching assistant of the Laboratory of Agricultural Mechanization of Agricultural University of Athens in Field Agricultural Machinery, in Agricultural Tractors

January 2008 – August 2008

Lecturer with contract in the Laboratory of Agricultural Mechanization of Agricultural University of Athens on the subject “Agricultural machinery”

### *Reserved Second Lieutenant*

April 2004 – April 2005

Obligatory military service in Greek Infantry.

After studying in School of Infantry Reserve Officers (Σ.Ε.Α.Π.) in Iraklion, Crete for four months, I served as a novice officer and I was promoted in Second Lieutenant the last month of my service.

### *Part time member of staff in the Student Union of Cranfield University*

June 2003 – September 2003

Working as a bar tender in the student union.

### *Internship (Valencia, Spain)*

June 2001 – August 2001

Obligatory practical training for the diploma of Agricultural University of Athens

Trainee in a EU program of Polytechnic University of Valencia “Validation of spraying machinery in the county of Valencia for environmental protection”

Measurements of spraying machinery properties in the area of Valencia aiming in the control of chemical applications according to the EU environmental legislation

### *Internship (Athens, Greece)*

June 2000 – August 2000

Obligatory practical training for the diploma of Agricultural University of Athens

Trainee in the Institute of Agricultural Constructions & Machinery under the National Agricultural Research

Measurements of pump efficiency and tractor power and pull.

### LANGUAGES

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- Greek: Mother tongue
- English: First Certificate in English (University of Cambridge)

- Spanish: Intermedio D.E.L.E. (Universidad de Salamanca)
- Portuguese: 2nd year student (Certificate from University of Coimbra, Portugal for the successful 1st year)

#### COMPUTER SKILLS

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- Operating Systems: Windows 3.1, 95, 98, Me, 2000, XP
- Windows Office 95, 97, 2000, XP
- Applications: Microsoft Word, Excel, PowerPoint, Internet.
- AutoCAD
- SimaPro
- ArcGIS

#### OTHERS

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- Car & motorcycle driving license (1996)

#### EXTRACURRICULAR ACTIVITIES

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“7<sup>th</sup> National Conference of Agricultural Engineering”, Athens, Greece, 2011  
 “19<sup>th</sup> European Biomass Conference & Exhibition”, Berlin, Germany, 2011  
 “Strategies and policies of common sense – EE and RES solutions for energy independence, competitive prices and exit from the crisis”, Plovdiv, Bulgaria, 2010  
 “European Conference on Agricultural Engineering 2010”, Clermont-Ferrand, France, 2010  
 “6<sup>th</sup> National Conference of Agricultural Engineering”, Thessaloniki, Greece, 2009  
 “17<sup>th</sup> European Biomass Conference & Exhibition”, Hamburg, Germany, 2009  
 “Renewable Energy 2008”, Busan, Korea, 2008  
 “European Conference on Agricultural Engineering 2008”, Hersonissos, Crete, Greece, 2008  
 “5<sup>th</sup> National Conference of Agricultural Engineering”, Larissa, Greece, 2007  
 “3<sup>rd</sup> International Bioenergy Conference & Exhibition”, Jyväskylä, Finland, 2007  
 “15<sup>th</sup> European Biomass Conference & Exhibition”, Berlin, Germany, 2007  
 “World Congress of Agricultural Engineering”, Bonn, Germany, 2006  
 “4<sup>th</sup> National Conference of Agricultural Engineering”, Athens, Greece, 2005  
 “3<sup>rd</sup> National Conference of Agricultural Engineering”, Thessaloniki, Greece, 2003  
 “Modern Waste Management – Together for an environmentally friendly future”, Athens, 2003.  
 Seminar for fast ploughing by the Head Engineer of R&D in JCB, Cranfield University, Silsoe, 2003

#### INTERESTS

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- Traveling
- Volleyball, Basketball, Football
- Music