

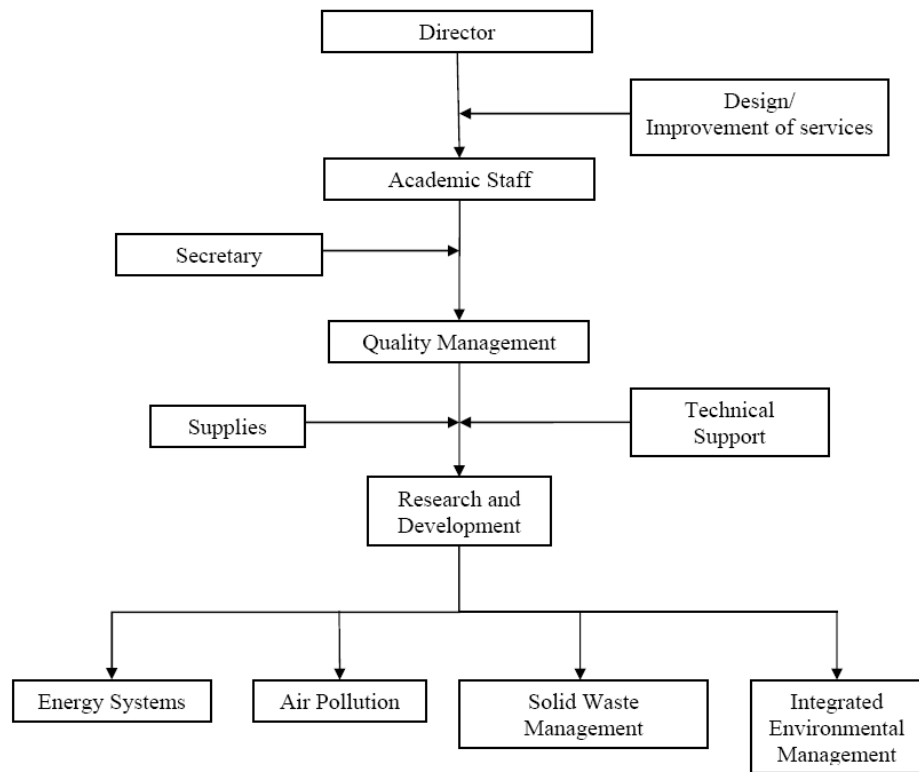


**Thursday 5 November**  
**EU-India PARTNERING EVENT**

## PROFILE FORM

ORGANISATION DETAILS				
Organisation name Aristotle University of Thessaloniki, Department of Mechanical Engineering, LHTEE				
Street * Box 483, University Campus				
ZIP *	54124	City *	Thessaloniki	Country * Greece
Phone *	+30-2310-994165		Fax	+30-2310-996012
Email *	<a href="mailto:makis@aix.meng.auth.gr">makis@aix.meng.auth.gr</a> , <a href="mailto:akarag@auth.gr">akarag@auth.gr</a>		Web	<a href="http://aix.meng.auth.gr">http://aix.meng.auth.gr</a>
Employees	<input type="checkbox"/> 1-10	<input type="checkbox"/> 11 - 50	<input type="checkbox"/> 51 - 250	<input type="checkbox"/> 250 +
Organisation type	<input checked="" type="checkbox"/> University	<input type="checkbox"/> Research Center	<input type="checkbox"/> Industry	<input type="checkbox"/> SME <input type="checkbox"/> Other
Department	Aristotle University of Thessaloniki (AUT), Department of Mechanical Engineering, Laboratory of Heat Transfer and Environmental Engineering (LHTEE)			
Short description of your company/organization	<p>Since its establishment in autumn 1989, AUT-LHTEE has been an integral part of the Energy Section of the Mechanical Engineering Department, operating within the legal framework applying to Greek Universities. This legal framework regulates the broad aspects, and also frequently the details, of educational and research policy. There are, however, measures that the Laboratory has applied, on its own initiative, to improve the quality of the work carried out. Within this line of policy, the Laboratory established in 2006, and since then maintains, a quality management system conforming to the international management system standard ISO 9001:2008, with a scope of:</p> <ul style="list-style-type: none"> <li>• Energy systems and technology</li> <li>• Air pollution</li> <li>• Solid waste management and</li> <li>• Integrated environmental management</li> </ul>			

The Laboratory structure is depicted in the following schematic.

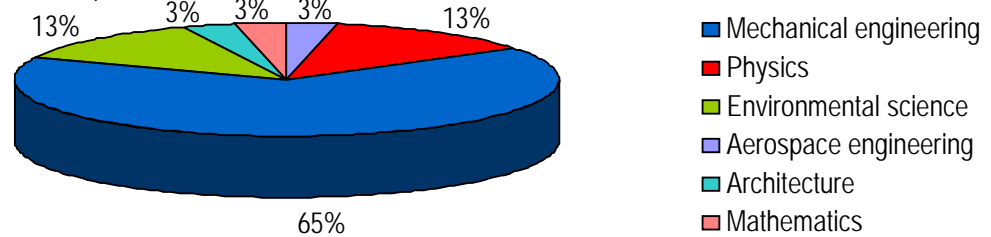


The Laboratory's academic staff consists currently of three members:

- Nicolas Moussiopoulos, Professor, Dr.-Ing. habil. (Director)
- Agis Papadopoulos, Associate Professor, Dr.-Eng., MSc
- Avraam Karagiannidis, Assistant Professor, Dr.-Eng., MSc

As of summer 2009, twelve Doctorate holding senior researchers and twenty researchers and Doctorate candidates are involved in research and educational activities. The secretarial and technical support team consists of seven members. Full lists of the Laboratory's current and former staff members are given in section 9.

As the Laboratory supports the interdisciplinary approach to environmental problems, the research team consists of mechanical engineers, physicists, environmental scientists, mathematicians and architects, as depicted in the below pie-chart.



The tasks of the staff members are portrayed in the job descriptions that highlight their relevance and importance within the quality management system, indicate their daily work related duties and decision making, and define ethical rules and boundaries. All researchers, secretarial and technical staff are fully competent to suggest new and enhanced methods of working practice, through continuing education, targeted training, creative motivation and incentives, also in compliance with the requirements of the ISO 9001:2008 standard.

PARTICIPANT			
Gender	<input checked="" type="checkbox"/> Mr	<input type="checkbox"/> Ms	Title Dr.
First name	Avraam		
Last name	Karagiannidis		
Position	Assistant Professor, Dr. Mechanical Engineer, MSC in Environmental Management		

PARTNERSHIP PROPOSAL	
EU-India partnering event session participation:	
<input checked="" type="checkbox"/>	<i>Sustainable production and management of biological resources from land, forest and aquatic environment</i>
<input type="checkbox"/>	<i>Fork to farm: Food (including seafood), health and well being</i>
<input type="checkbox"/>	<i>Life sciences, biotechnology and biochemistry for</i>
<input type="checkbox"/>	<i>Health</i>
Areas of activity (Free keywords)	Waste-to-energy, Sustainable waste management

PROJECT DESCRIPTION	
Title of your research project in one sentence	International Waste to Energy Research and Policy Network
Short description of project	<p>Goal is to establish at an international level scientific, academic, and regulatory consensus that waste-to-energy is safe, does not contribute to climate change, and is a net greenhouse gas reducer. Individual objectives of this project include:</p> <p>a. Engage prominent and respected academics, non-academically affiliated scientists and engineers, government officials and other professionals from key regions in the world to form a working group to support waste-to-energy by means of position papers, speaking engagements, conferences, and research projects. Of particular importance is the development of a formal "White Paper" from the above group supporting the goals of the Network.</p> <p>b. Identify key environmental groups worldwide to support waste-to-energy projects and the activities of the Network.</p> <p>c. Engage and inform opposing environmental groups with particular attention to their scientists and technical staff.</p> <p>d. Identify and collect all known scientific data and documents related to the environmental and human health impacts of waste-to-energy and develop a comprehensive waste-to-energy (WTE)</p>

	literature database.
Description of expertise offered	<p>Based on its expertise in energy systems and environmental sciences, AUTH-LHTEE and its solid waste management group compiles and proposes innovative solutions in various domains associated with industrial production. In the last years, the implementation of Integrated Product Policy has become a major activity area. In that direction, the application of Life Cycle Assessment/Costing (LCA/LCC), Material Flow Analysis and Ecodesign is an obvious option for enterprises wishing to establish production lines and consumption patterns of environmentally friendly products that will contribute to the minimisation of waste. Both basic and applied research is carried out and qualified support is provided in both pre- and post-consumer solid waste management, with major areas being optimized waste collection, treatment and disposal; restoration of contaminated land; layout and implementation of solid waste related policies aiming at avoidance, reduction, reuse, recycling, recovery and re-integration (multi-R principle); design for disassembly and the environment. AUTH-LHTEE also has a strong involvement in research activities related to <u>waste management economics</u>. Studying externalities, as they occur due to improper practices, is a prerequisite in order to internalise them into rational cost structures of solid waste management. The tools used for this purpose are material flow analysis, input-output modelling, mixed-integer programming, systemic analysis, market research for recycled goods and appropriate technologies, SWOT and PEST analyses, scenario simulations, multi-criteria analysis of alternative solutions and LCA/LCC. In terms of <u>contaminated-site and derelict-land restoration</u>, work is undertaken in a large extent on waste related issues (restoration of both small-sized wild dump, as well as of large-size semi-controlled landfills, with eventual resource recovery) as well as with quarry rehabilitation and with contaminated land management in a more generic sense. Next, significant work is ongoing on the rational <u>waste management in the industrial and commercial sector</u> with emphasis on the design of waste avoidance and processing systems and on pricing policies for environmental services. Part of the research work in this field is the optimisation of managing dedicated waste streams. Last but not least, <u>Waste-to-Energy</u> is a field with significant past, present and future focus. Ongoing and future research plans in solid waste management include extending the work of the integrated energetic utilisation of waste materials with emphasis on renewable energy, biofuels and a new emerging taxonomy in the related reverse logistics chain, through a chain of processes including combustion, pyrolysis, gasification (also in multi-stage modules), as well as (both process and landfill) anaerobic digestion (on an urban, agricultural and industrial scale) and industrial (co-)combustion of various waste derived fuels, both process and external. It is also intended to conduct research and support demonstrations towards assessing the external costs of solid waste management in Greece, with special emphasis on the potential of waste-to-energy options and the related Kyoto implications, as well as on waste minimisation in the industrial sector,</p>

	biofuels and biorefineries, together with associated advanced financial tools. Further information on <a href="http://aix.meng.auth.gr">http://aix.meng.auth.gr</a> .
Description of requested partner expertise	Indian scientific and industrial partners involved in waste-to-energy and sustainable waste management.