

CONTACT

INFORMATION

Technological Educational Institute (TEI) of Thessaly
Department of Mechanical Engineering
Laboratory of Heat Transfer
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Greece

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RESEARCH INTERESTS

Transport Phenomena, Exhaust aftertreatment, Internal Combustion Engines,
Mathematical Modeling and Numerical Methods

EDUCATION

Aristotle University Thessaloniki

Ph.D. at the Laboratory of Applied Thermodynamics **Apr. 2005**

Computational and Experimental Study of Thermal Failure Mechanisms in Diesel Particulate Filters

Diploma in Mechanical Engineering **Jun. 2000**

PROFESSIONAL
EXPERIENCE

TEI of Thessaly , Department of Mechanical Engineering

Associate Professor

Apr. 2015 - today

Assistant Professor

Sep. 2010 - Apr. 2015

Head of the Laboratory of Heat Transfer 2010- today

Coordination of research projects

- Generic code for automated 3d discretization of after-treatment devices 2011
- External coupling of catalyst simulation software with OpenFOAM 2016-2017
- Microscale Computational and Experimental Investigation of the Behaviour of Partially Failed Particulate Filters 2018-2019

Participation in 1 lifelong learning program 2015

Member of Department's Internal Evaluation Team 2011- today

Member of Institute's Quality Assurance Unit 2013-2014

Head of the Department of Mechanical Engineering 2016-2018

Exothermia SA,

Founding member

Jan. 2007 - Sep. 2010

Manager of Software Development and Support Group

Coordination of business plan funded by Greek Secretariat of Research and Technology

Aristotle University Thessaloniki , Laboratory of Applied Thermodynamics

Postdoc Researcher **Jun. 2005 - Dec. 2006**

Research Engineer **Jul. 2000 - Jun. 2005**

Participation in over 10 research projects funded by the Automotive Industry and European Programs.

TEACHING
EXPERIENCE

TEI of Thessaly , Department of Mechanical Engineering

Associate Professor

Feb. 2015 - today

Assistant Professor

Sep. 2010 - Jan. 2015

- Heat Transfer
- Computational Methods in Transport Phenomena
- Internal Combustion Engines
- Renewable Energy Sources
- Energy Conservation

University of Western Macedonia , Department of Mechanical Engineering

Adjunct Professor

Sep. 2006 - Feb. 2007

- Combustion Phenomena

Aristotle University Thessaloniki , Department of Mechanical Engineering

Adjunct Professor

Feb. 2006 - Jul. 2006

- Combustion and Fuels

PUBLICATIONS

21 publications in refereed international journals

15 publications in international conferences with proceedings

6 presentations in international conferences without proceedings

482 citations from other researchers for 32 documents according to Scopus

2 educational textbooks

REFEREE SERVICE

SAE International

Chemical Engineering Journal

Chemical Engineering & Technology

Fuel

SCHOLARSHIPS/AWARDS

2 annual awards from the Technical Chamber of Greece and the Association of Mechanical & Electrical Engineers

2 annual awards from the [Greek State Scholarship Foundation \(IKY\)](#)

Annual scholarship from Greek Telecommunication Organization (OTE)

[Arch T. Colwell Merit Award](#) for SAE paper 2004-01-0696

FOREIGN LANGUAGES

Greek, mother tongue

English, proficiency

German, elementary

- Haralampous O., Koltsakis G. C., Intra-layer temperature gradients during regeneration of diesel particulate filters, *CHEM ENG SCI* 57 (13): 2345-2355 JUL 2002
- Kandylas I. P., Haralampous O. A., Koltsakis G. C., Diesel soot oxidation with NO₂: Engine experiments and simulations, *IND ENG CHEM RES* 41 (22): 5372-5384 OCT 30 2002
- Haralampous Onoufrios A., Kandylas Ioannis P., Koltsakis Grigorios C., Samaras Zissis C., Diesel Particulate Filter Pressure Drop. Part I: Modeling and Experimental Validation. *Journal of Engine Research*, Vol. 5, No. 2, 149-162, JER 02202, 2004
- Onoufrios A., Kandylas Ioannis P., Koltsakis Grigorios C., Samaras Zissis C., Diesel Particulate Filter Pressure Drop. Part II: On board Calculation of Soot Loading. *Journal of Engine Research*, Vol. 5, No. 2, 163-173, JER 02302, 2004
- Haralampous O. A., Kandylas I. P., Koltsakis G. C., Samaras Z. C., Experimental evaluation of apparent soot oxidation rates in diesel particulate filters, *INT J VEHICLE DES* 35 (4): 365-382 2004
- Haralampous O. A., Koltsakis G. C., Back-diffusion Modeling of NO₂ in catalyzed diesel particulate filters, *IND ENG CHEM RES* 43 (4): 875-883 FEB 18 2004
- Haralampous O. A., Koltsakis G. C., Oxygen diffusion modeling in diesel particulate filter regeneration, *AICHE J* 50 (9): 2008-2019 SEP 2004
- Haralampous O. A., Koltsakis G. C., Samaras Z.C., Vogt C. D., Ohara E., Watanabe Y. and Mizutani T., Reaction and Diffusion Phenomena in Catalyzed Diesel Particulate Filters, *SAE Transactions: Journal of Fuels & Lubricants*, SAE paper 2004-01-0696, Detroit, 2004
- Haralampous O. A., Dardiotis C., Koltsakis, G.C. and Samaras Z., Study of Catalytic Regeneration Mechanisms in Diesel Particulate Filters using Coupled Reaction-Diffusion Modeling, *SAE Transactions: Journal of Fuels & Lubricants*, SAE paper 2004-01-1941, Toulouse, 2004
- Koltsakis G. C., Haralampous O. A., Margaritis N. K., Samaras Z. C., Vogt C.-D., Ohara E., Watanabe Y. and Mizutani T., 3-Dimensional Modeling of the Regeneration in SiC Particulate Filters, *SAE Transactions: Journal of Fuels & Lubricants*, SAE paper 2005-01-0953, Detroit, 2005
- Dardiotis C. K., Haralampous O. A., Koltsakis G. C., Catalytic Oxidation Performance of Wall-Flow vs Flow-through Monoliths for Diesel Emissions Control, *IND ENG CHEM RES*, vol. 45, 3520-3530, 2006
- Koltsakis G. C., Konstantinou A., Haralampous O. A., Samaras Z. C., Measurement and Intra-Layer Modeling of Soot Density and Permeability in Wall-flow Filters, *SAE Transactions: Journal of Fuels & Lubricants*, SAE paper 2006-01-0261, Detroit, 2006
- Koltsakis G. C., Margaritis N. K., Haralampous O. A., Samaras Z. C., Development and Experimental Validation of NO_x Trap Model for Diesel Exhaust, *SAE Transactions: Journal of Fuels & Lubricants*, SAE paper 2006-01-0471, Detroit, 2006
- Frey M., Wenninger G., Krutzsch B., Koltsakis G. C., Haralampous O. A., Samaras Z. C., 2D simulation of the regeneration performance of a catalysed DPF for heavy-duty applications, *CAPoC7 2006, Topics in Catalysis*, Vols. 42-43, May 2007
- Margaritis N., Haralampous O. A., Koltsakis G. C., Modeling of the NO_x Trap and Validation using Ultra-fast Analyzers, *CAPoC7 2006, Topics in Catalysis*, Vols. 42-43, May 2007

- Koltsakis G. C., Haralampous O. A., Samaras Z. C., Kraemer L., Heimlich F., Behnk K., Control Strategies for Peak Temperature Limitation in DPF Regeneration Supported by Validated Modeling, *SAE Transactions: Journal of Fuels & Lubricants*, SAE paper 2007-01-1127, Detroit, 2007
- Dardiotis C. K., Haralampous O. A. and Koltsakis G. C., Catalytic oxidation in wall-flow reactors with zoned coating, *Chemical Engineering Science* 63 (2008) 1142-1153
- Koltsakis G. C., Samaras Z. C., Karvoutzis-Kontakiotis A., Zacharopoulou Th., Haralampous O., Implications of Engine Start-Stop on After-Treatment Operation, *SAE International Journal of Engines* 4(1), SAE paper 2011-01-1243, Detroit 2011
- Koltsakis Grigorios, Haralampous Onoufrios, Depcik Christopher and Ragone J. Colter, "Catalyzed Diesel Particulate Filter Modeling", *Rev Chem Eng* 2013, 29(1), 1-61
- Haralampous O., Kontzias T., "Approximate Pressure Drop and Filtration Efficiency Expressions for Semi-Open Wall-Flow Channels", *Canadian Journal of Chemical Engineering*, 92:1517-1525, 2014
- Haralampous O., Payne S., "Experimental Testing and Mathematical Modelling of Diesel Particle Collection in Flow-Through Monoliths", *Journal of Engine Research*, 17(10), 1045-1061, 2016
- Orihuela Pilar M., Haralampous Onoufrios, Chacartegui Ricardo, Martínez-Fernández Julián, "Numerical simulation of a wall-flow Diesel Particulate Filter made of biomorphic silicon carbide", *Chemical Engineering Science* (under review), 2018
- Haralampous O. A., Koltsakis G. C., Samaras Z.C., Partial Regenerations in Diesel Particulate Filters, SAE paper 2003-01-1881, Yokohama, 2003.
- Haralampous O. A., Koltsakis, G.C. Samaras Z. C., Vogt C.D., Ohara E., Watanabe Y. and Mizutani T., Modeling and experimental study of uncontrolled regenerations in SiC filters with Fuel Borne catalyst, SAE paper 2004-01-0697, Detroit, 2004
- Koltsakis G. C., Haralampous O. A., Dardiotis C. K., Samaras Z. C., Vogt C.-D., Ohara E., Watanabe Y. and Mizutani T., Performance of Catalyzed Particulate Filters without Upstream Oxidation Catalyst, SAE paper 2005-01-0952, Detroit, 2005
- Kraemer L., Heimlich F., Predelli O., Manns J., Koltsakis G., Haralampous O., INNOPART: Integrated NOx and Particulate Reduction: Increasing the Maximum Soot Mass Loading, FISITA 2006 World Automotive Congress, Yokohama 2006, F2006P332
- Kraemer L., Heimlich F., Schaeffner J., Gratzke R., Behnk K, Koltsakis G., Haralampous O., Assessing the Maximum Soot Mass Loading of Diesel Particulate Filters by Advanced Modeling and Regeneration Control, SIA, Diesel Engine 2006, Lyon
- Tsinoglou D. N., Haralampous O. A., Koltsakis G. C., Samaras Z. C, Model-based optimization methods of combined DPF+SCR systems, SAE, ICE 2007, Naples
- Koltsakis G., Koutoufaris I., Haralampous O., Tournalonias P., Kraemer L., Model-based design of combined DPF-SCR systems for passenger cars, FAD conference 2007, Dresden
- Koltsakis G. C., Haralampous O. A., Koutoufaris I. Z., Potential and challenges of integrating de-NOx catalysts on DPF substrates, SIA, R-2008-05-22, Paris, November 2008

CONFERENCE
PUBLICATIONS

Koltsakis G. C., Haralampous O. A., Practical applications of multi-dimensional modeling in diesel exhaust after-treatment, SIA , R-2008-07-08, April 2008

Koltsakis, G. C., Dardiotis, C. K., Samaras, Z. C., Frey, M., Wenninger, G., Krutzsch, B., Haralampous, O. A., Model-based Optimization of Catalyst Zoning in Diesel Particulate Filters, SAE Transactions: Journal of Fuels & Lubricants, SAE paper 2008-01-0445, Detroit, 2008

Koltsakis G. C., Samaras Z. C, Echte H., Chatterjee D., Markou P., Haralampous O. A., Flow Maldistribution Effects on DPF Performance, SAE paper 2009-01-1280, Detroit 2009

Hajireza S., Johannesen L., Wolff T., Koltsakis G., Samaras Z.C., Haralampous O.A., A Modeling and Experimental Investigation on an Innovative Substrate for DPF Applications, SAE Technical Paper 2010-01-0891, Detroit 2010

Haralampous O., Kontzias Th., "Analytical Estimation of Chemical Kinetics for Modeling of Diesel Oxidation Catalysts", Motor Vehicle and Transport Conference, Timisoara, Romania, 2012

Haralampous O., Mastellos D., "A Multi-channel Mathematical Model For Partially Failed Diesel Particulate Filters", 8th GRACM, Volos, July 2015

Gravalos I., Georgiadis A., Kateris D., Haralampous O., Gialamas T., Xyradakis P., Tsiropoulos Z., Bompolas E., Manolakoudis E., "3D soil moisture sensing and imaging", 10th European Conference on Precision Agriculture, ECPA 2015, Tel-Aviv, Israel, 12-16 July 2015

CONFERENCES
WITHOUT
PROCEEDINGS

Koltsakis G., Margaritis N., Samaras Z., Haralampous O., Tsinoglou D., Modeling of Diesel DeNOx Aftertreatment Components, MinNOx, Berlin 2007

Koltsakis G.C, Haralampous O.A, Exhaust System Simulation for Emission Control Optimization, VPC 2007

Koltsakis G. C., Kraemer L., Schaeffner J., Haralampous O. A., Challenges and model-based solutions for SCR system design/calibration in passenger cars, IQPC 2008

Koltsakis G.C, Haralampous O.A, Multi-dimensional Modeling of Catalyzed Particulate Filters, CTI, Stuttgart January 2008

Atmakidis Th., Haralampous O.A, Koltsakis G.C, Modeling complex exhaust gas after-treatment by Star-CD/axisuite coupling, Star European Conference 2011, Amsterdam

Haralampous O., Dritselis C., "Modeling of the loading in partially damaged DPFs", MODEGAT IV, Bad-Herrenalb, September 2015

Haralampous O., Payne S., "Measurement and Modeling of PM Loading in Bare and Catalytic Flow-Through Monoliths", 20th ETH-Conference on Combustion Generated Nanoparticles, 13 June 2016

TEXTBOOKS

Heat Trasnfer - Laboratory exercises , TEI of Thessaly, Larissa , 2015

Renewable Energy Sources - Laboratory exercises , TEI of Thessaly, Larissa , 2015