

CURRICULUM VITAE of PANTELIS N. BOTSARIS**PERSONAL INFORMATION**

First name(s) / SURNAME(s)	Pantelis N. Botsaris
Address (es)	12 Vasilisis Sofias Str. 67132, University Campus, Xanthi, Greece, Building 1, Room 107
Cognitive Subject	Mechanical Design: Management of manufacturability, energy and Life Cycle Analysis
Telephone(s)	+30 25410 79878
Fax	+30 25410 79878
E-mail	panmpots@pme.duth.gr
Web	http://medilab.pme.duth.gr
IM	Pantelis_Botsaris (skype)
Nationality	Hellenic
Date of birth	20/08/1968
Gender	Male
Status	Married, 2 children

SHORT PRESENTATION

Rank: Professor

Sector: Materials, Processes and Engineering

Cognitive Subject: Mechanical Design: Manufacturing, Energy and Life Cycle Management

Scientific interests: Specific areas of interest include mechanical design environmental conscious for sustainable manufacturing and energy savings, diagnostics and prognostics of electromechanical systems and structures (especially renewable energies), structural health monitoring, experimental measuring systems and techniques for the development of smart meters especially for energy consumption, Non Destructive Techniques (NDT-thermography).

Publications in international reputable scientific journals: 43

Publications in international conference proceedings: 45

Books-monographs: 9

Publications in greek conference proceedings: 12

Other publications/ papers: 27

Patents: 3

References: 638

Reviewer in international scientific journals/conferences: 16

RESEARCH AND TEACHING EXPERIENCE

07/2016-Today	Professor
2010-2016	Associate Professor
2006-2010	Assistant Professor
	Democritus University of Thrace, School of Engineering Department of Production Engineering and Management Faculty of Materials, Processes and Engineering, Mechanical Design Laboratory (http://medilab.pme.duth.gr/index.shtml)
	Currently Teaching Modules:
	<ul style="list-style-type: none"> ▪ Mechanical Drawing ▪ CAD/CAM ▪ Machine Elements Design ▪ Production Technologies (machining, CNC)

- Reliability and Maintenance of Technological Systems

Taught Modules:

- Alternative Fuels
- Combustion Engines

Investigate techniques and expand models for failure diagnosis/prognosis in mechanical systems e.g. tool wear in CNC or in situ photovoltaic modules' efficiency estimation.

1997-2006

Adjunct Professor, Democritus University of Thrace, School of Engineering, Departments of a) Electrical and Computer Engineering, Faculty of Energy Systems, Lab. of Mechanical Engineering, b) Environmental Engineering and c) Production Engineering and Management, Faculty of Materials, Processes and Engineering, Mechanical Design Laboratory.

1991-1996

Ph.D candidate, Research assistant

Democritus University of Thrace, School of Engineering, Department of Electrical and Computer Engineering, Faculty of Energy Systems, Lab. of Mechanical Engineering.

Dissertation Title: "Diagnostic and prognostic systems for the estimation of 3-way catalytic converter efficiency".

Developed an on-board microprocessor controlled unit for diagnostics and prognostics of an automobile 3-way catalytic converter.

1991-2006

Professional Licensed Engineer

Carried out surveys, appraisals, valuations, arbitration on all matters related to the planning and construction of electromechanical works.

1997-2006

Co-Founder of Energomechaniki Ltd, Xanthi-Thrace Hellas

Established in 1997 in Xanthi-Thrace, Greece the "Energomechaniki" Ltd. The company designs, installs, and delivers clean energy systems for residential and industrial use. Products and services including:

- Photovoltaic systems for the generation of solar electricity.
- Small wind turbines.
- Small hydroelectric plants
- Hybrid systems combining renewable energy sources and fossil-fuelled generators with all the necessary automated controls.
- Small co-generation systems for the combined production of heat and electricity (CHP)
- Energy audits

2003-2006

Industrial Inspector TÜV Hellas

Inspected and certified:

- Lifting equipment
- Pressure equipment
- Industrial installation

EDUCATION

1991-1996

Ph.D.

Democritus University of Thrace, School of Engineering, Department of Electrical and Computer Engineering, Faculty of Energy Systems, Lab. of Mechanical Engineering.

Advisor: Prof. P. D. Sparis.

Dissertation Title: "Diagnostic and prognostic systems for the estimation of 3_way catalytic converter efficiency"

1986-1991**Eng. Diploma**

Democritus University of Thrace, School of Engineering, Department of Electrical and Computer Engineering, Faculty of Energy Systems, Lab. of Mechanical Engineering.

Advisor: Prof. P. D. Sparis.

Thesis Title: "Temperature measurement analysis in an electric generation system via the 3497AHP data acquisition unit."

RESEARCH AND TEACHING**TEACHING**

Mechanical Drawing (2nd Semester), CAD/CAM (3rd Semester), Machine Elements (5th Semester), Production Technology I (5th Semester), Production Technology II (6th Semester), Reliability and Maintenance of Technological Systems (9th Semester)

Graduate Thesis (Supervisor): **87 + 13** (completed + ongoing)

Postgraduate Thesis (Supervisor): **15 + 5** (completed + ongoing)

Postgraduate Thesis (Supervising Committee Member): **75** (completed)

PhD Thesis (Supervisor): **3** (ongoing)

PhD Thesis (Supervisor): **3** (completed)

PhD Thesis (Supervising Committee Member): **12 + 9** (completed + ongoing)

RESEARCH

Participation in National and European Projects and Industrial Cooperations either as a Principal Researcher or as Scientific or/and Institutional Coordinator or Member of a Research Team:

Participation as Principal Researcher: **5**

Participation as Scientific Coordinator: **13**

Participation as Institutional Coordinator: **3**

Participation as Member of a Research Team: **12**

SELECTED PUBLICATIONS IN INTERNATIONAL SCIENTIFIC JOURNALS (PEER-REVIEWED)

- 1) D. Papaptsounis, **P. N. Botsaris**, P. Pistofidis, "Preliminary results for detection evaluation in Failure Modes and Effect Analysis study: 600kW Wind Turbine case study", Journal of Engineering Science and Technology Review, (accepted), (open access), 2021.
- 2) P. Pistofidis, **P.N. Botsaris**, Z. Giotsalitis, "Photorealistic 3D Models and Interactive Learning Content for a Machine Elements e-Course", Inter. Journal of Operations Research and Information Systems (IJORIS), Vol. 12, No. 1, pp. 31-42, 2021, DOI: 10.4018 / IJORIS.2021010103
- 3) E. Konstantinidis, S. Katsavounis, **P. N. Botsaris**, "Design Structure Matrix (DSM) method application to issues of modeling and analyzing the Fault Tree of a wind energy asset", Inter. Journal of Wind Energy, Wiley, Vol. 23, No. 3, pp. 731-748, 2020, DOI: 10.1002/we.2454.
- 4) **P. N. Botsaris**, A. G. Pechtelidis, K. A. Lymperopoulos, "Modeling, simulation and performance evaluation analysis of a parabolic trough solar collector power plant coupled to an ORC engine in north eastern GREECE using TRNSYS", Journal of Solar Energy Engineering, ASME, Vol. 141 (6) : 061004-061004-10. doi:10.1115/1.4043658, 2019.
- 5) P. Pistofidis, C. Emmanouilidis, A. Papadopoulos, **P.N. Botsaris**, "Management of linked knowledge in industrial maintenance", International Journal of Industrial Management and Data Systems, Emerald, vol. 116, No. 8, pp.1741-1758 , 2016.
- 6) E.L. Ntantis, **P.N. Botsaris**, "The Impact of Gas Turbine Component Leakage Fault on GPA Performance Diagnostics", Journal of Engineering Science and Technology Review, vol. 9, No. 1, pp. 116-123, ISSN:1791-2377 (open access), 2016.
- 7) E.L. Ntantis, **P.N. Botsaris**, "Diagnostic Methods for an Aircraft Engine Performance", Journal of Engineering Science and Technology Review, vol. 8, No. 4, pp. 64-72, ISSN:1791-2377 (open access), 2015.
- 8) A.S. Xanthopoulos, D.E. Koulouriotis, **P.N. Botsaris**, "Single-stage Kanban system with deterioration failures and condition-based preventive maintenance", Journal of Reliability Engineering & System Safety, Elsevier, vol. 142, pp. 11-122, 2015.

- 9) **P.N. Botsaris**, "An approach of the spatial planning of a photovoltaic park using the Constructal Theory", *Sustainable Energy Technologies and Assessments*, Elsevier, vol. 11, pp. 11-16, 2015, (DOI 10.1016/j.seta.2015.05.001).
- 10) K. Angelakoglou, G. Gaidajis, K. Lympelopoulou, **P.N. Botsaris**, "Carbon footprint analysis of municipalities – Evidence from Greece", *Journal of Engineering Science and Technology Review*, vol. 8, No. 4, pp. 15-23, ISSN:1791-2377 (open access), 2015.
- 11) K.A. Lympelopoulou, **P.N. Botsaris**, K. Angelakoglou, G. Gaidajis, "Sustainable energy action plans of medium-sized municipalities in north Greece", *Advances in Energy Research*, vol.3, No.1, pp.11-30, 2015, (DOI: [http:// dx. doi .org / 10 . 12989 / eri.2015.3.1.01 1](http://dx.doi.org/10.12989/eri.2015.3.1.011)).
- 12) **P.N. Botsaris**, P. M. Bekakos, "Computational Mechanical Design and Modeling of an Impact Attenuator for a Competition Vehicle", *International Journal of Neural, Parallel and Scientific Computations*, Dynamic Publishers, vol. 22, pp. 159-182, 2014.
- 13) **P.N. Botsaris**, E.L. Ntantis "Machining parameters evaluation during a wet, lubricated, and air-cooled turning process", *Journal for Manufacturing Science & Production*, vol. 14, No. 1, pp. 47-58, ISSN (Online) 2191-0375, ISSN (Print) 2191-4184, 2014.
- 14) E.I. Konstantinidis, D.G. Kompolias, **P.N. Botsaris** "Viability Analysis of an Offshore Wind Farm in North Aegean Sea, Greece", *Journal of Renewable and Sustainable Energy*, American Institute of Physics, vol. 6 , 023116, 2014.
- 15) K. Angelakoglou, **P.N. Botsaris**, G. Gaidajis, "Issues regarding wind turbines positioning: A benchmark study with the application of the life cycle assessment approach", *Journal of Sustainable Energy Technologies and Assessments*, Elsevier, vol. 5, pp. 7-18, 2014, (top5 editors' choice article [http:// www. Journals .elsevier.com / sustainable-energy-technologies-and-assessments/editors-choice/](http://www.Journals.elsevier.com/sustainable-energy-technologies-and-assessments/editors-choice/)).
- 16) J.A. Tsanakas, D. Chrisostomou, **P.N. Botsaris**, A. Gasteratos, "Fault diagnosis of photovoltaic modules through image processing and Canny Edge detection on field thermographic measurements", *International Journal of Sustainable Energy*, Taylor and Francis, vol. 34, No. 6, pp. 351–372, <http://dx.doi.org/10.1080/14786451.2013.826223>, 2014.
- 17) K.N. Tarchanidis, J.N. Lygouras, **P.N. Botsaris** "Voltage Stabilizer Based on SPWM technique Using Microcontroller", *Journal of Engineering Science and Technology Review* (ISSN 1791-2377), vol. 6 No 1, pg. 38-43, 2013.
- 18) J.A. Tsanakas, **P.N. Botsaris**, "On the detection of hot spots in operating photovoltaic arrays through thermal image analysis and a simulation model", *Materials Evaluation* pp. 457-465, April 2013.
- 19) **P.N. Botsaris**, E.I. Konstantinidis, D. Pitsa, "Systemic assessment and analysis of factors affect the reliability of a wind turbine", *Journal of Applied Engineering Science*, vol. 10, No. 2, pp. 85 - 92, 2012. (doi:10.5937/jaes10-2130)
- 20) J.A. Tsanakas, **P.N. Botsaris**, "An Infrared Thermographic Approach as a Hot-Spot Detection Tool for Photovoltaic Modules Using Image Histogram and Line Profile Analysis", *International Journal of Condition Monitoring*, vol. 2, No.1, pp. 22-30, 2012.
- 21) **P.N. Botsaris**, J.A. Tsanakas, "An Indicative Risk Based Inspection (RBI) preventive maintenance program for heat exchangers in chemical industry" *ICASTOR Journal of Engineering*, vol. 1, No. 4, pp. 107-122, 2011.
- 22) G. Gaidajis, K. Angelakoglou, **P.N. Botsaris**, F. Filippidou, "Analysis of the recycling potential of used automotive oil filters using the Life Cycle Assessment approach", *Resources, Conservation and Recycling*, Elsevier, vol. 55, pp. 986-994, 2011.
- 23) F. Filippidou, **P.N. Botsaris**, K. Angelakoglou, G. Gaidajis, "A comparative analysis of CdTe and a poly-Si photovoltaic module installed in North Eastern Greece", *International Journal of Applied Solar Energy*, Springer, vol. 46, No. 3, pp. 182-191, 2010.
- 24) J.A. Tsanakas, **P.N. Botsaris**, I.G. Amiridis, G.G. Galeridis, "Evaluation of sensor-based condition monitoring methods as in-process tool wear and breakage indices - case study: Drilling" *Diagnostyka-Applied Structural Health, Usage and Condition Monitoring*, vol. 62, No. 2, pp. 3-15, 2012.
- 25) J.A. Tsanakas, **P.N. Botsaris**, "Passive and active thermographic assessment as a tool for condition-based performance monitoring of photovoltaic modules" *Journal of Solar Energy Engineering*, ASME, vol. 133, No 2., 2011.
- 26) **P.N. Botsaris**, V. Sofianou, "Comparative analysis of a hip stem manufactured by different materials under static loading conditions using finite element method", *ICASTOR Journal of Engineering*, vol. 4, No.2, pp. 123-136, 2011.

- 27) **P.N.Botsaris**, D.E. Koulouriotis, "A preliminary estimation of analysis methods of vibration signals at fault diagnosis in ball bearings", *Inter. Journal of Materials and Product Technology*, Inderscience, vol 41, Nos 1/2/3/4, pp. 27-38, 2011.
- 28) **P.N.Botsaris**, "An estimation of alternative mechanical design approaches for reducing cold start emissions from gasoline four-stroke cycle engines during the last decade", *Inter. Journal of Heat and Technology*, Edizioni ETS, ISSN 0392-8764/1998 vol. 28, No. 1, pp. 37-45, 2010.
- 29) **P.N. Botsaris**, F. Filippidou, "Estimation of the Energy Payback Time (EPR) for a PV module installed in north eastern Greece", *Inter. Journal of Applied Solar Energy*, Springer, vol. 45, No. 3, pp. 166-175, 2009.
- 30) **P.N.Botsaris**, K.P. Anagnostopoulos, O. Demesouka, "Using Axiomatic Design Principles for Designing a Simple and Innovative Product: A case study", *Inter. Journal of Design Engineering*, Inderscience, vol. 1, No. 3, pp. 300-315, 2008.
- 31) **P.N.Botsaris**, K.P.Anagnostopoulos, "An inventive design of an industrial product through the application of TRIZ tools", *SME Technical Paper (TP07PUB191)*, pp. 1-11, 2007.
- 32) J.N.Lygouras, **P.N.Botsaris**, J.Vourvoulakis, V.Kodogiannis, "Fuzzy logic controller implementation for a solar air-conditioning system", *Applied Energy*, vol. 84, No. 12, pp. 1305-1318, 2007.
- 33) A.N. Karkanis, **P.N.Botsaris**, P.D. Sparis, "Emission reduction during cold start via catalyst surface control", *Proc. Inst. Mech. Engrs., Journal of Automotive Eng.*, vol. 218, No. 11, Part D, pp. 1333-1340., 2004.
- 34) **P.N.Botsaris**, D. Bechrakis, P. D. Sparis, "An estimation of three way catalyst performance using artificial neural networks during idle speed", *ASME Paper, Combustion and Emissions ICE 4*, vol. 4, pp. 123-129, 2004.
- 35) **P.N.Botsaris** and S. Prevezanos, "A methodology for a thermal energy building audit", *Buildings and Environment Inter. Journal*, Elsevier, vol. 39, No.2, pp. 195-199, 2004.
- 36) **P.N.Botsaris**, D. Bechrakis, P. D. Sparis, "An estimation of three way catalyst performance using artificial neural networks during cold start", *Applied Catalysis: A (General)*, *Inter. Journal*, Elsevier, vol. 243, No.2, pp. 285-292, 2003.
- 37) **P.N.Botsaris** and S. Prevezanos, "A monitoring method of a heating energy source efficiency", *Energy and Buildings Inter. Journal*, Elsevier, vol. 33, No.6, pp. 609-612, 2001.
- 38) **P.N.Botsaris** and A. Polyhroniadis, "Microprocessor Controlled Exhaust Gas Lambda Sensor", *Microprocessors & Microsystems Journal*, vol. 24, No.3, pp. 121-127, 2000.
- 39) **P.N.Botsaris** and P.D.Sparis, "Ambient Temperature Influence on Catalytic outlet-inlet temperature difference", *Proc. Inst. Mech. Engrs., Journal of Automotive Eng.*, Part D, vol. 214, pp. 95-100, 1999.
- 40) C.I.Arapatsakos, P.D.Sparis, **P.N.Botsaris**, "Experimental Study of Three-Way Catalytic Converter efficiency Using the Temperature Difference between the Inlet and the Outlet of the Converter", *International Journal of Heat and Technology*, vol. 16(1), pp. 83-90, Edizioni ETS, ISSN 0392-8764, 1998.
- 41) P.D.Sparis, **P.N.Botsaris**, A.Karkanis, J.Tatsios, "Three-Way Catalyst Assessment Via Outlet-Inlet Temperature Measurements: Driving Tests", *Proc. Inst. Mech. Engrs., Journal of Automotive Eng.*, Part D, vol. 211, pp. 445-454, 1997.
- 42) **P.N.Botsaris** and P.D.Sparis, "Microprocessor Controlled Three-Way Catalyst Efficiency Monitoring System", *Microprocessors & Microsystems Journal*, vol. 20, No.10, pp. 585-593, 1997.
- 43) P.D.Sparis, **P.N.Botsaris**, A.Karkanis, "Three -Way Catalyst Assessment via Inlet-Outlet Temperature Measurements at Idle Speed", *ASME Paper, Combustion and Emissions ICE 4*, vol. 4, pp. 85-89, 1995.

SELECTED PUBLICATIONS IN INTERNATIONAL CONFERENCES (PEER-REVIEWED)

- 1) A. Argyropoulos, **P.N. Botsaris**, "Research, Study, Design and Development of an Artificial Ear Splint Model by Using a 3D Printer", *ICMMEN 2020 (7th International Conference on Manufacturing and Materials Engineering)*, 2-3 July 2020, Thessaloniki, Greece.
- 2) **P.N. Botsaris**, K. Limperopoulos, A. Pechtelidis, "Preliminary evaluation of operational results of RES systems integrated in students' residences in Xanthi, Greece ", *International Conference on Sustainability in built environment for climate change mitigation, SBE19*, 23-25 October, 2019, Thessaloniki, Greece.
- 3) P. Giourka, **P. Botsaris**, Y. Bakouros, A. Thrash, "Understanding the components of a

comprehensive entrepreneurial support system: How to know the right kind of support?”, 14th International Conference on Nanosciences & Nanotechnology (NN17, July 4-7, 2017, Thessaloniki, Greece.

4) **Pantelis N. Botsaris**, Chaido Kiritsi, Dimitris Iliadis, “Comparative analysis between conventional and dry turning”, 9th International Congress on Precision Machining (ICPM2017), September 6-9, 2017, NTUA, Athens, Greece. (Solid State Phenomena, Vol. 261, pp. 267-274, 2017).

5) Christos Emmanouilidis, Petros Pistofidis, Apostolos Fournaris, M. Bevilacqua, I. Durazo-Cardenas, **Pantelis N. Botsaris**, Vassilis Katsouros, Christos Koulamas and Andrew G. Starr, “Context-based and human-centered information fusion in diagnostics”, 3rd IFAC Workshop on Advanced Maintenance Engineering, Service and Technology, (AMEST'16), October 19-21, 2016, Radisson Blu Hotel, Biarritz, France.

6) E.I. Konstantinidis, **P.N. Botsaris**, "Wind Turbines: Current status, trends and Technologies", Conference on Innovative Manufacturing Engineering and Energy, IManEE2016, 23-25 September, 2016, Kallithea, Chalkidiki, Greece.

7) **P.N. Botsaris**, K. Limperopoulos, “Feasibility assessment of geothermal pellet production from agricultural residues in medium-sized municipality in north Greece”, 9th International Conference on Energy and Climate Change, 12-14 October 2016, Athens, Greece.

8) **P.N. Botsaris**, K. Limperopoulos, A. Pechtelidis, "Installation and operation of a pilot hybrid park utilizing solar parabolic collectors and geothermal energy", 5th International Conference on Renewable Energy Sources and Efficiency-New challenges, 5-6 May, 2016, Nicosia, Cyprus.

9) E.I. Konstantinidis, D.G. Kompolias, **P.N. Botsaris**, "Economic analysis of an offshore wind farm near Samothraki island", 7th International Scientific Conference on Energy and Climate change, 8-10 October, 2014, Athens, Greece.

10) S. Katsavounis, N. Patsianis, E.I. Konstantinidis, **P.N. Botsaris**, "Reliability analysis on crucial subsystems of a wind turbine through FTA approach", Maintenance Performance Measurement and Management Conference (MPMM) 2014, 4-5 September, 2014, Coimbra, Portugal.

11) P. Pistofidis, C. Emmanouilidis, A. Papadopoulos, **P.N. Botsaris**, "Modeling the semantics of failure context as a means to offer context-adaptive maintenance support", 2nd European Conference of the PHM Society - PHME'14, 8 to 10 July, 2014, Nantes, France. (ISBN-978-1-936263-16-5).

12) E.I. Konstantinidis, D.G. Kompolias, **P.N. Botsaris**, "Feasibility Study of Offshore Wind Farms Installation within the Greek Exclusive Economic Zone", 5th Conference on Sustainable Intelligent Manufacturing, 17 to 19 July, 2013, Lisbon, Portugal.

13) **P.N. Botsaris**, " Guidelines for the redesign a commercially available product: The case of a split air conditioning unit", 2nd Conference on Sustainable Intelligent Manufacturing, 26 to 29 June, 2013, Lisbon, Portugal.

14) N. Athanasopoulos, **P.N. Botsaris**, "A comparative analysis of detecting bearing fault, using infrared thermography, acoustic emission and vibration analysis", 3d International Condition Monitoring of Machinery in Non-Stationary Operations, 8 to 10 May, 2013, Ferrara, Italy.

15) J.A. Tsanakas, M. Karoglou, E. T. Delegou, **P.N. Botsaris**, A. Bakolas, A. Moropoulou, "Assessment of the Performance and Defect Investigation of PV Modules after Accelerated Ageing Tests", International Conference on Renewable Energies and Power Quality (ICREPQ'13), 20th to 22th March, 2013, Bilbao, Spain.

16) **P.N. Botsaris**, E.I. Konstantinidis, D. Pitsa, “Systemic assessment and analysis of factors affect the reliability of a wind turbine”, EuroMaintenance 2012, 14-16 May 2012, Belgrade, Serbia

17) **P.N. Botsaris**, E.I. Konstantinidis, "Feasibility study of offshore wind turbine installation in North Aegean – Thracian Sea", 4th International Scientific Conference, Energy and Climate Change, 13-14 October 2011, Athens, Greece.

18) J.A. Tsanakas, **P.N. Botsaris**, “Quantifying the impact of hot spots on the performance of photovoltaic modules by infrared thermography and a simulation model”, 2nd Int. Exergy Life Cycle Assessment and Sustainability Workshop & Symposium (ELCAS2), June 19-21, 2011, Nisyros, Greece.

19) **P.N. Botsaris**, K. Angelakoglou, G. Gaidajis, J. Tsanakas, , “Life cycle costs and environmental life cycle analysis of solar water heaters in Greece”, 24th Int. conference on Condition Monitoring and Diagnostic Engineering Management, COMADEM 2011, , May/June 31-1, 2011, Stavanger, Norway.

20) **P.N. Botsaris**, J. A. Tsanakas, M.E. Vogiatzi, “Tool wear monitoring by Design of Experiments (DOE) for drilling”, 24th Int. conference on Condition Monitoring and Diagnostic Engineering

Management, COMADEM 2011, May/June31-1, 2011 Stavanger, Norway.

- 21) **P.N. Botsaris**, "Electronic Book (e-Book): An alternative teaching approach or a trend of our days", International Conference and Workshops on Higher Education, Partnership and Innovation, IHEPI 2010, 6-8 September 2010, Budapest.
- 22) **P.N. Botsaris** and E. Konstantinidis, "Wind turbine maintenance optimization: A holistic approach", The 7th International Conference on Condition Monitoring and Machinery Failure Prevention Technologies – CM2010 and MFPT, 22-24 June 2010, Stratford-upon-Avon, 2010, England.
- 23) **P.N. Botsaris** and J.A. Tsanakas, "Infrared thermography as an estimator technique of a photovoltaic module performance via operating temperature measurements", The 10th European Conference on NDT, 7-11 June 2010, Moscow, Russia. Η εργασία επιλέχθηκε για δημοσίευση στο έγκυρο διεθνές e-JournalNDT.net (eJNDT, ISSN: 1435-4934).
- 24) G.Gaidajis, **P.N.Botsaris**, D.Zaloumi, "Consideration of a solution for the treatment and the safe environmental disposal of acidic mine waters with the employment of systemic approach", 5th National and International Conference on HSSS, June 2009, Xanthi, Greece.
- 25) C.D.Bonia, **P.N.Botsaris**, "Techno-economical feasibility study for the establishment and design of a PV module assembly production line in Eastern Macedonia-Thrace Greece", 6th International Conference Management and Technological Changes (MTC 2009), 3-5/09 2009, Alexandroupoli, Greece.
- 26) **P.N.Botsaris**, K.P. Anagnostopoulos, S. Marsidou, "Axiomatic Design and Systematic Design Principles Comparison Based on a New Product Case Study", 5th National and International Conference on HSSS, Xanthi, Greece, June 2009.
- 27) **P.N. Botsaris**, A. D. Naris G. Gaidajis, "A Risk Based Inspection (RBI) preventive maintenance program, A case study", World Congress on Engineering Asset Management, Athens, Greece, 28-30 September 2009, WCEAM2009.
- 28) **P.N. Botsaris**, "An alternative design approach for a 1MW wind turbine tower A feasibility study ", 3rd International Congress on Design and Modeling of Mechanical Systems, CMSM 2009, 16-18 March 2009, Hamammet, Tunisia.
- 29) J.A. Tsanakas and **P.N. Botsaris**, "Non destructive in situ evaluation of a PV module performance using infrared thermography ", The 6th International Conference on Condition Monitoring and Machinery Failure Prevention Technologies - CM and MFPT, 23-25 June 2009, Dublin, Ireland.
- 30) **P.N.Botsaris**, J.A. Tsanakas,; "Mechanical and thermal signatures as indirect tool wear monitoring indices – Case study: Drilling", 22th Int. conference on Condition Monitoring and Diagnostic Engineering Management, COMADEM 2009, San Sebastian, Spain, June 9-11, 2009.
- 31) **P.N. Botsaris**, I.A. Tsanakas and I.M. Siouris "A preliminary study for the efficiency of the wear debris analysis and thermography as independent or integrated fault diagnosis methods in tool wear monitoring", The 5th International Conference on Condition Monitoring and Machinery Failure Prevention Technologies - CM and MFPT, 15-18 July 2008, Edinburgh, Scotland/United Kingdom.
- 32) **P.N. Botsaris**, J.A. Tsanakas,; "State-of-the-art in methods applied to tool condition monitoring (TCM) in unmanned machining operations: A Review", Condition Monitoring and Diagnostic Engineering Management, COMADEM – 2008, 11-13 June 2008, Prague, Czech Republic.
- 33) **P.N. Botsaris**, D.E. Koulouriotis, "A preliminary estimation of analysis methods of vibration signals at fault diagnosis in ball bearings". 4th Int. Conference on NDT, 11-14 October, Chania-Crete, 2007. (e-Journal & Database of Nondestructive Testing - ISSN 1435-4934)
- 34) **P.N. Botsaris**, A. Karkanis,,P.D.Sparis, ,G. Vachtsevanos "A Preliminary Study of Catalyst Fault Diagnosis and Feature Extraction at Low Idle Speed", MARCON 2005, Maintenance and Reliability Conference, 3-6 May, Knoxville, Tennessee, 2005.
- 35) A. Karkanis, **P.N. Botsaris**, P.D. Sparis, "A catalyst surface control automation system for emission reduction during cold start", Proc. of Fall Technical Conference of the ASME Internal Combustion Engine Division, pp 145-151,2004.
- 36) **P.N. Botsaris**, E. Tsioliaridou, "Competing Technologies for reducing catalytic converter cold start emissions", 2003 12th Int. Scientific Symposium Transport and Air Pollution, 16-18 June, Avignon, France, 2003.
- 37) A. Karkanis, **P.N. Botsaris**, P.D. Sparis, "Cold start emission reduction via catalyst bypass", 2003 12th Int. Scientific Symposium Transport and Air Pollution, 16-18 June, Avignon, France, 2003.
- 38) **P.N. Botsaris**, D. Bechrakis, P. D. Sparis, "An estimation of three way catalyst performance

using artificial neural networks", 11th International Symposium Transport and Air Pollution, Grazer Congress, 19-21 June 2002 Austria.

39) **P.N. Botsaris** and P.D. Sparis, "Microprocessor Controlled Three-Way Catalyst Efficiency Monitoring System. A Progress report", ATT- Automotive and Transportation Technology Congress and Exposition, Barcelona, Spain, 1-4 October 2001.(Επιλέχθηκε για δημοσίευση στο SAE-Transactions Journal of Fuels & Lubricants)

40) **P.N. Botsaris** and S.Prebezas, "A methodology for energy buildings certification using energy indices (A preliminary report)", Ecological Protection of the Planet Earth I, An International Conference and Exhibition, Vol II, pp. 741-747, Xanthi, Greece, 5-8 June 2001.

41) **P.N. Botsaris** and S.Prebezas, "A method for the prediction of a heating energy source declination from an each time-defined value", Protection and Restoration of the Environment, 5th International Conference, Vol II, pp. 1257-1258, Thassos Island, 3-6 July 2000 .

42) P.D.Sparis, **P.N. Botsaris**, H.Arapatsakos, "Three-Way Catalyst Life Extension Via Catalyst Mounting Inversion", 1st European Conference on Clean Cars, Athens 16-18, 1997.

43) P.D.Sparis, **P.N. Botsaris**, A.Karkanis, " An investigation of Three -Way Catalyst Rich Mixture Poisoning", 28th ISATA Paper 95ATS860, Stuttgart, Germany, 1995.

44) P.D.Sparis, **P.N. Botsaris**, D.Papadopoulos, A.Karkanis, "Measurements of Three-Way Catalyst Performance under a Stepwise Constant Idle Speed Schedule", S.A.E. Paper 952400, pp. 35-41, 1995.

45) P.D.Sparis, **P.N. Botsaris**, D.Papadopoulos, A.Karkanis, "Three -Way Catalyst Converter Report Via Inlet-Outlet Temperature Measurements: A Preliminary Report", S.A.E. Paper 942055, pp. 1-6, 1994.

PATENTS & INVENTIONS

1. Patent (No. 1005235) from Industrial Property Organisation of Hellas (O.B.I.)
2. Utility model certificate (No. 20060200084) from Industrial Property Organisation of Hellas (O.B.I.)
3. Patent Diploma (N.1007417) Industrial Property Organisation of Hellas (O.B.I.)

ADDITIONAL DETAILS

University administration experience: Professor P.N Botsaris is Former Deputy Rector of Research and Innovation of Democritus University of Thrace (DUTH) as well as Former Head of the University's Research Committee (SARF) responsible for the research and development of the university from 2013 to 2018. Major responsibilities included: management of SARF Committee yearly budget (about 17 million EURO per year), management of research funding from any type of source, acquiring new funds for the university. Major accomplishments included: a) negotiation and securing funding for new educational and research equipment for the university with an approved budget of 6 million EURO by the Region of East Macedonia and Thrace); b) establishment of an innovation and entrepreneurship unit (project originally financed by the Greek Government - first phase budget 600.000 EURO). DUTH's Innovation and Entrepreneurship Unit (IEU) aims at the developing the entrepreneurial culture and thinking of the young people through actively supporting and equipping students and graduates with the necessary knowledge, skills and capabilities to develop entrepreneurial careers. Such a structure never existed before at DUTH while it is continuously supported after the ending of original finance.

OTHER DETAILS

1. Member of Technical Chamber of Greece (N. 61526) (T.E.E.)
2. Member of the Hellenic Society of Mechanical and Electrical Engineers (Π.Σ.Μ.Η.Μ.)
3. Member of American Society of Automotive Engineering (SAE)
4. Senior member of Society of Manufacturing Engineers (SME)
5. Member of Hellenic Society of Non Destructive Testing (HSNDT)
6. Senior Member of Hellenic Maintenance Society (HMS)
7. Reviewed papers for SAE transactions
8. Reviewed papers for 2008 IEEE International conference on Systems, Man and Cybernetics (SMC 2008), 12-15 October, Singapore
9. Reviewed papers for 2009 IEEE International conference on Systems, Man and Cybernetics (SMC 2009), 11-14 October, San Antonio, Texas, USA

10. Reviewed papers of Journal of Operational Research
11. Senior member pf Society of Manufacturing Engineers
12. Reviewed papers of Journal of Materials and Design, Elsevier.
13. Reviewed papers of Journal of Solar Energy, Elsevier.
14. Reviewed papers of Journal of Renewable Energy, Elsevier.