
Curriculum Vitae

Dr. Vassilios (Vassilis) Kappatos is the Head of Constructural and Infrastructure Research in Maritime and Air Transport Laboratory at Hellenic Institute of Transport (HIT), Center for Research and Technology Hellas (CERTH), Greece. He is currently Fellow of The Welding Institute (FWeld) and Member of the - Engineering Council of United Kingdom (CEng) / Technical Chamber of Greece (TEE-TCG)/ Institute of Electrical and Electronics Engineers (MIEEE)/ International Society for Condition Monitoring (ISCM) / Hellenic Society for Non Destructive Testing (H.S.N.T)/ Hellenic Institute of Acoustics (HELINA)/ Danish Center for Applied Mathematics and Mechanics (DCAMM)/ Society for Machinery Failure Prevention Technology (MFPT).

He obtained his PhD in the area of Non Destructive Evaluation (NDE) and also holds the Diploma of Mechanical and Aeronautical Engineering (MEng) since 2002. His research areas are NDE, Structural Health Monitoring, Condition Monitoring, Structural Integrity, Pattern Recognition and Signal Processing. His research has been supported by the European Commission and other organizations.

As a research leader, he has delivered and coordinated 29 European (H2020-FP7), 8 UK (TSB-Innovate), 5 Danish and 2 Greek National funded research projects with a total budget of more than 60 million €. He has extensive expertise on proposal writing for European funded projects and in developing partnerships within the industry. Throughout the years, he has reviewed and submitted more than 130 proposals (mainly EU ones), providing technical input, writing proposals and sections, forming partnerships, securing funds of around 15 million €.

He has over 109 publications in International Journals, Conference Proceedings, Book Chapters and Articles. He is a reviewer of several international journals and conference proceedings.

Throughout his career, he has lectured at University level on a broad range of modules in the area of Applied Engineering in Denmark, the United Kingdom and Greece. He was Associate Professor (permanent position) at Mechanical Engineering Section, Department of Technology and Innovation, University of Southern Denmark (SDU), Denmark. He has managed a research team of 35 Research Fellows and Assistants, PhD Students and Project Technical Assistants (Placement Students) at Brunel Innovation Centre (BIC), Brunel University London, United Kingdom.

Dr. Vassilios Kappatos
PhD, MEng, FWeldI, MIEEE, CEng

Associate Research Professor
Head of Constructural and Infrastructure Research in Maritime and Air Transport Lab.
Hellenic Institute of Transport (HIT)
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1. Personal Information

1.1. Contact Information

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Linkedin: <http://www.linkedin.com/pub/vassilis-kappatos/62/921/676>



1.2. Current Employment / Research Activities

I work as Associate Research Professor at Hellenic Institute of Transport (HIT), Center for Research and Technology Hellas (CERTH).

My main research interests are in the areas of:

- Non Destructive Testing and Evaluation.
- Structural Health Monitoring.
- Condition Monitoring.
- Structural Integrity.
- Pattern Recognition.
- Signal Processing.
- Mechanical Behaviour.

1.3. Education

December 2016: Lecturer Training Programme (10 ECTS).

Centre for Teaching and Learning, University of Southern Denmark, Denmark.

May 2007: PhD (Doctor of Engineering).

Pattern Recognition Group, Wire Communication Laboratory (Supervisor: Associate Professor E. Dermatas), Department of Electrical & Computer Engineering, University of Patras, Greece.

- *PhD Thesis title:* "Non destructive testing of metallic complex structures using digital Acoustic Emission signal processing".
- *Major field:* Non Destructive Testing and Structural Health Monitoring.
- *Secondary fields:* Pattern Recognition and Signal Processing.

PhD courses:

1) Electroacoustics, 2) Information theory, 3) Pattern recognition, 4) Digital signal processing, 5) Photovoltaic technology, 6) Digital communications, 7) Digital audio technology, 8) Laser technology and applications, 9) Integrated manufacturing systems.

September 2002: Mechanical Engineering Diploma (MSc Equivalent)

Department of Mechanical & Aeronautical Engineering, University of Patras, Greece.

- *Grade:* First Class: 72.5%.
- *Major field:* Manufacturing Systems.
- *Secondary field:* Life Cycle Assessment.
- *Master / Dissertation thesis:* "Life cycle assessment (LCA) in steel products with application in steel reinforcement of concrete", Laboratory for Manufacturing Systems & Automation (Supervisor: Professor G. Chryssolouris).

- *Industrial Placement:* Halyvourgiki S.A., Athens, Greece. (The 2nd largest steel producers in Greece).

1.4. Training, Seminars, Workshops and Events

1. "Effective feedback to enhance students' learning", 13th December 2018, University of Southern Denmark Odense, Denmark.
2. "Data training for employees", 10 May 2018, University of Southern Denmark Odense, Denmark.
3. "English Language Coaching, one to one", Week 16, 17 and 18 2018, University of Southern Denmark, Odense, Denmark.
4. "WIND ENERGY DENMARK - Annual Event 2017", 2-3 October 2017, Herring, Denmark.
5. "Erosion Day Workshop", 27 February, 2017, DTU Wind Energy, Risø, Denmark.
6. "WIND ENERGY DENMARK - Annual Event 2016", 26-27 October 2016, Odense, Denmark.
7. "Teaching in English at SDU", 23th September, 2016, University of Southern Denmark, Odense, Denmark.
8. "Setting up your course in Blackboard/e-learn.sdu.dk", 29th August 2016, Centre for Teaching and Learning, University of Southern Denmark, Denmark.
9. "Teaching and Learning with Social Media", 11th April 2016, Centre for Teaching and Learning, University of Southern Denmark, Denmark.
10. "Elsevier Author Seminar: How to Write a Great Research Paper, and Get it Accepted by a Good Journal", 17th March 2016, University of Southern Denmark, Denmark.
11. "Oral Examination in Higher Education in Denmark", 16th March 2016, Centre for Teaching and Learning, University of Southern Denmark, Denmark.
12. "Engaging Students in Group Work", 24th February 2016, Centre for Teaching and Learning, University of Southern Denmark, Denmark.
13. "Interactive Lecturing", 23rd February 2016, Centre for Teaching and Learning, University of Southern Denmark, Denmark.
14. "Commerical Awareness H2020", 19th March 2015, TWI, Cambridge, United Kingdom.
15. "Fast Track to Innovation (FTI) proposal preparation training", 23rd February 2015, TWI, Cambridge, United Kingdom.
16. "Mandatory Fire Awareness Training", January 2015, Brunel University London, United Kingdom.
17. "R4i Research for Impact Day", 31st October 2013, TWI, Cambridge, United Kingdom.
18. "Railway Asset Management", 20th September 2013, TWI, Cambridge, United Kingdom.
19. "Negotiation Kick-Off meeting for Call 14, Clean Sky", 14th June 2013, Brussels, Belgium.
20. "Multiphysics Intensive Training", 16th-17th January 2013, University of Northampton, United Kingdom.
21. "Instrumental Design", 7th December 2012, University of Northampton, United Kingdom.
22. "Lift and Escalator Technologies", 27th September 2012, University of Northampton, United Kingdom.
23. "Leadership and Collaboration Start-Up Support", Farnham Castle, 16th-17th April 2012, Surrey, United Kingdom.
24. "English Pronunciation for Non-native Speakers", 23th March 2012, Brunel University, United Kingdom.
25. "Advances in Composites at TWI", 8th March 2012, TWI, Cambridge, United Kingdom.
26. "Equality and Diversity in the Workplace", 1st March 2012, Brunel University, United Kingdom.

27. "MATLAB for Data Processing and Visualisation", 12th December 2012, TWI, Cambridge, United Kingdom.
28. "Teletest: the long range ultrasonic system of Plant Integrity Ltd", 20th June 2011, TWI, Cambridge, United Kingdom.
29. "Structural health monitoring seminar", 6th-9th April 2009, University of Patras, Greece.
30. I have serviced my military force with specialty "Mechanical Wheeled Vehicles", May 2007-May 2008, Greece.

2. Research Experience / Participation in Research Projects/ Grants

February 2018 – May 2018: **Principal Investigator**, Department of Technology and Innovation, University of Southern Denmark (SDU), Denmark, EUopSTART, *New generation of multi-scale phononic and acoustic metamaterials*, Ministry of Higher Education and Science, 75,000 DKK.

November 2017: **Principal Investigator**, Department of Technology and Innovation, University of Southern Denmark (SDU), Denmark, *Vibration Testing*, Fabrikant P.A. Fiskers Fond, 100,000 DKK.

November 2017: **Principal Investigator**, Department of Technology and Innovation, University of Southern Denmark (SDU), Denmark, *Experimental Test Bench for Condition Monitoring of Rotating Wind Turbine Components*, THOMAS B. THRIGES FOND, 100,000 DKK.

June 2017: **Co-Principal Investigator**, Department of Technology and Innovation, University of Southern Denmark (SDU), Denmark, *Equipment for Research and Education in Rotor Dynamics Field*, Fabrikant Mads Clausens Fond, 75,000 DKK.

July 2016– January 2017: **Principal Investigator**, Department of Technology and Innovation, University of Southern Denmark (SDU), Denmark, EUopSTART, *Breakthrough innovation in aviation by use of Graphene composites for aircraft structural components and use of solar power*, Ministry of Higher Education and Science, 50,000 DKK.

March 2013 – December 2015: The **Technical Manager/Co-Principal Investigator**, Brunel Innovation Centre (BIC), Brunel University, London, United Kingdom, of 24 European (H2020-FP7) and 8 National (TSB-UK Innovate) funded research projects with total budget of more than 55 million €.

My main responsibilities were:

- To monitor and deliver projects on time and within budgets.
- To coordinate and provide technical contribution.
- To manage a research team of 35 Research Fellows and Assistants, PhD Students and Placement Technical Assistants.
- Track and monitor the progress of all projects within the area as required, specifically focused collaborative projects.
- Responsible for publishing high quality research papers.
- Identify new opportunities and secure revenue for the centre.
- Reviewing all proposals, making sure that all technical tasks can be delivered.
- Forming partnerships (Universities and Industrial partners) for future collaborative proposals.
- Oversee and contribute to the writing of the non-scientific elements of the EU

programme applications being submitted from BIC.

Ongoing (I left before completed):

A. Horizon 2020

	Full Title	Acronym	Funding Body	Project Number	Start-End Year	Project Grant (€)
1	Continuous structural condition tank integrity monitoring of Above Ground Storage Tanks	SafeAST	EC FTI	EC GA:691497	2015 - 2017	2,201,214.88
2	Bespoke Acoustic Emission System for real-time ship hull monitoring for all weather condition	ShipHullSHM	EC SMEi-1	EC GA:696961	2015 – 2016	50,000.00
3	Development of a reliable quality control system using advanced Non-Destructive Evaluation (NDE) technologies for the production environment of leak-free fuel tanks from plastics and composites	Leakfree	EC SMEi-2	EC GA:673155	2015 - 2016	1,435,000.00

B. FP7

	Full Title	Acronym	Funding Body	Project Number	Start-End Year	Project Grant (€)
1	Vortex robot for rapid low cost scanning and improved non-destructive testing of large concrete structures	Vortexscan	EC FP7/R4S	EC GA:605041	2014 - 2016	988,000.00
2	Open rotor propellers ice protection system	Iceps-Orps	CleanSky	EC GA:620148	2013 - 2016	1,997,326.66
3	Integrity testing of deep foundation piles	PileInspect	EC FP7/R4A	EC GA:605676	2013 - 2016	2,016,000.00

C. TSB-Innovate UK

	Full Title	Acronym	Funding Body	Project Number	Start-End Year	Project Budget (£)
1	Ultrasonic Nuclear Inspection	Union	TSB	102077	2015 - 2018	1,103,078.00
2	Automated ultrasonic inspection of aerospace composites with enhanced defect detection probabilities aided by gantry deployed, CAD controlled robotics	Autodisc	TSB	101800	2014 - 2016	2,021,883.00
3	Automated 100% production quality assurance of net shape manufactured components using in line micron resolution X-Ray stereographic imaging	AssureNET	AMSCI	36409-233576	2014 - 2017	2,302,546.00
4	Automated in-line inspection and quality control of net shape powder metallurgy components using microfocus three dimensional x ray computed tomography imaging	QualiNET	EPSRC	EP/L505195/1	2014 - 2016	1,250,359.00
5	Ultrasonic prevention and	UltraCleanG	TSB	101314	2014 - 2016	1,112,047.00

	removal of biofouling from marine electricity generators	en				
6	Ultrasonic cleaning of valves in mining	CleanMine	TSB	101333	2014 - 2016	834,789.00
7	On line and global structural health monitoring of high temperature steam lines	UltraSteamLine	EPSRC	EP/L50469 5/1	2014 - 2016	524,908.00
8	Monitoring, scanning and active inspection of cables	Mosaic	TSB	101537	2014 - 2016	750,509.00

Completed:**A. H2020**

	Full Title	Acronym	Funding Body	Project Number	Start-End Year	Project Budget (€)
1	Health Condition Monitoring of Small Scale Tidal Generators Using Miniature Torque Sensors	TidalHealth	EC SMEi-1	EC GA: 663953	2015 (6 months)	50,000.00

B. FP7

	Full Title	Acronym	Funding Body	Project Number	Start-End Year	Project Budget (€)
1	Continuous monitoring systems for the SAFE storage, distribution and usage of Hydrogen POWER for transport	SafeHPower	EC FP7/R4S	EC GA:60509 5	2014 - 2015	946,000.00
2	High temperature pipe structural health monitoring system utilising phased array probes on TOFD configuration	HotPhasedArray	EC FP7/R4S	EC GA: 605267	2014 - 2015	997,000.00
3	Development and demonstration of intelligent non-contact inspection technology for concentrated solar power plants	Intersolar	EC FP7/R4S	EC GA:60502 8	2014 - 2015	1,063,000.00
4	Wind turbine blade Anti/De-icing, combined Ultrasonic guided wave and vibration system	DeICE-UT	EC FP7/R4S	EC GA:60513 8	2013 - 2015	1,066,000.00
5	Advanced condition monitoring system for the assessment of wind turbines rotating parts	CMSWind	EC FP7/R4A	EC GA:28685 4	2012 - 2015	1,869,903.00
6	Radio frequency sensing for non destructive testing of carbon fibre reinforced composite materials for structural health monitoring	CompHealth	EC FP7/R4S	EC GA:31493 5	2012 - 2014	1,032,000.00
7	High power transmission line cable inspection	Chaplin	EC FP7/R4S	EC GA:31513 0	2013 - 2015	924,000.00
8	Online Remote Condition Monitoring of Tidal Stream Generators	Remo	EC FP7/R4S	EC GA:31483 9	2013 - 2015	1,102,000.00
9	Long range ultrasonic inspection of aircraft wiring	Safewire	EC FP7/R4S	EC GA:31335 7	2013 - 2015	1,080,000.00
10	Prevention and detection of fouling on ship hulls	Cleanship	EC FP7/R4S	EC GA:31270 6	2012 - 2014	1,044,000.00

11	Adapted composite repair tooling for in-situ wind turbine blades structural rehabilitation	Coreto	EC FP7/R4S	EC GA:283292	2012 - 2014	917,399.99
12	Development of 3D digital glasses for enhancing mobility of visually impaired people	DigiGlasses	EC FP7/R4S	EC GA:315127	2012 - 2014	915,000.00
13	Enable the powder metallurgy process to expand to new markets with more reliable parts and lower manufacturing costs through the inspection of green parts	DiraGreen	EC FP7/R4A	EC GA:286803	2011 - 2014	2,347,800.00
14	Development of an automated digital radiography system for the inspection of plastic electronics	PlastronicsSpec	EC FP7/R4S	EC GA:286531	2011 - 2013	1,103,800.00
15	Laser-guided inspection robot for the non destructive testing of thin steel gauge welds in the shipping industry	X-Scan	EC FP7/R4S	EC GA:283284	2011 - 2013	1,048,300.00
16	Development of an intelligent condition monitoring system for application on critical rotating components of industrial-scale wind turbines	IntelWind	EC FP7/R4S	EC GA: 283277	2011 - 2013	1,087,900.00
17	Automated inspection for sintered parts by non-destructive techniques for improved quality in production	Autoinspect	EC FP7/R4S	EC GA:283288	2011 - 2013	1,145,300.00

March 2011-June2012: Research Fellow and Associate, Brunel Innovation Centre, Brunel University, London, United Kingdom, of 4 European (FP7) funded research projects.

1. MonitoRail: "Long range inspection and condition monitoring of rails using guided waves", EC FP7/R4S, EC GA: 262194.
2. Autoinspect: "Automated inspection for sintered parts by non-destructive techniques for improved quality in production", EC FP7/R4S, EC GA: 283288.
3. DiraGreen: "Enable the powder metallurgy process to expand to new markets with more reliable parts and lower manufacturing costs through the inspection of green parts", EC FP7/R4A, EC GA: 286803.
4. PlastronicsSpec: "Development of an automated digital radiography system for the inspection of plastic electronics", EC FP7/R4S, EC GA: 286531.

September 2008 - March 2011: Research Fellow and Associate, Department of Mechanical and Aeronautical Engineering, University of Patras, Greece, of 4 European (FP7) funded research projects.

1. Rusteel: "Effects of Corrosion on Low-Cycle Fatigue (seismic) behaviour of High Strength Steel Reinforcing Bars", RFS-PR-8017.
2. Abitas: "Advanced bonding technologies for aircraft structures", AST5-CT-2006-030996.
3. Mojo: "Modular Joints of Aircraft Composite Structures", AST5-CT-2006-030871.
4. Celpact: "Cellular structures for impact performance", FP6-2005-AERO-1, 31038.

November 2003 - April 2004: PhD Researcher, Department of Electrical & Computer Engineering, University of Patras, Greece, of 2 National (Greek) funded research projects.

1. “Upgrade to the department of electrical & computer engineering”.
2. “Realization of vertical medicine network portal (Portal/Vortal)”.

3. Publications

3.1. Monographs

[M2] V. Kappatos, “*Non-destructive testing (NDT) of metallic complex structures using digital Acoustic Emission signal processing*”, Department of Electrical & Computer Engineering, University of Patras, Greece, May 2007.

[M1] V. Kappatos, “*Life cycle assessment (LCA) in steel products with application in steel reinforcement of concrete*”, Master / Dissertation Thesis, Department of Mechanical & Aeronautical Engineering, University of Patras, Greece, September 2002.

3.2. Book Chapters

[BC2] V. Kappatos, T-H. Gan, D. Stamatelos, “*Safe rail transport via communication-based train control systems and continuous non-destructive testing inspection of rails*”, Advances in Communication-Based Train Control Systems, CRC, Press (Taylor & Francis Group), 2015.

[BC1] V. Kappatos, E. Dermatas, “*Structural health monitoring of ship and other offshore structures using acoustic emission testing*”, Theory and Uses of Acoustic Emissions, Nova publishers, 2012.

3.3. Peer-Reviewed Publication in International Journals

[J35] M. K. Yucel, M. Legg, V. Kappatos, T-H. Gan, “*An ultrasonic guided wave approach for the inspection of overhead transmission line cables*”, Applied Acoustics, Elsevier, 122, pp. 23-34, July 2017.

[J34] K. Salonitis, D. Chantzis, V. Kappatos, “*A hybrid finite element analysis and evolutionary computation method for the design of lightweight lattice components with optimized strut diameter*”, The International Journal of Advanced Manufacturing Technology, Springer, June 2017, 90 (9-12), pp 2689-2701.

[J33] L. Cheng, M. Kogia, A.Mohimi, V. Kappatos, C. Selcuk, T-HGan, “*Crack characterisation using invariable feature extraction in stainless steel specimen used for absorber tubes of CSP applications via EMAT*”, Renewable Energy, Elsevier, Vol. 101, pp 771-781, February 2017.

[J32] D. Karagiannis, D. Stamatelos, V. Kappatos, T. Spathopoulos, “*An investigation of shape memory alloys, as actuating elements, in aerospace morphing applications*”, Mechanics of Advanced Materials and Structures, Taylor & Francis, 2016, 24(8), pp. 647-657, 2017.

[J31] Z. Qu, A.Y.B. Chong, J. F. Chacon, V. Kappatos, C. Selcuk, T-H Gan, “*Study on the laser-based weld surface flaw identification system employing wavelet analysis methodology*”, Research in Nondestructive Evaluation, Taylor & Francis, 27(3), pp. 137-154, 2016.

[J30] H. Habibi, G. Edwards, C. Sannassy, V. Kappatos, Y. Lage, L. Cheng, C. Selcuk, T-H. Gan, “*Modelling and empirical development of an anti/de-icing approach for wind turbine blades through superposition of different types of vibration*”, Cold Regions Science and Technology, Elsevier, 128, pp. 1-12, August 2016.

[J29] H. Habibi, T-H. Gan, M. Legg, I. G. Carellan, V. Kappatos, V. Tzitzilonis, C. Selcuk, “*An acoustic Antifouling Study in Sea Environment for Ship Hulls Using Ultrasonic Guided Waves*”, International Journal of Engineering Technologies and Management Research, 3(4), April, 2016.

[J28] M. Kogia, T-H. Gan, W. Balachandran, M. Livadas, V. Kappatos, I. Szabo, A. Mohimi, A. Round, “*High temperature shear horizontal electromagnetic acoustic transducer for guided wave inspection*”, Sensors, MDPI, 16(4), 582, 2016.

[J27] B. Salski, W. Gwarek, P. Kopyt, P. Theodorakeas, I. Hatzioannidis, M. Kouli, A. Y. B. Chong, S. M. Tan, V. Kappatos, C. Selcuk, T. H. Gan, “*Portable automated radio-frequency scanner for non-destructive testing of carbon-fibre-reinforced polymer composites*”, Journal of Nondestructive Evaluation, Springer, 35:25, June 2016.

[J26] J. F. Chacon, E. A. Andicoberry, V. Kappatos, M. Papaelias, C. Selcuk, T-H. Gan, “*An experimental study on the applicability of acoustic emission for wind turbine gearbox health diagnosis*”, Journal of Low Frequency Noise, Vibration and Active Control, Multi-Science Publishing, 35(1), pp. 64-76, March 2016.

- [J25] M. K. Yucel, S. Fateri, M. Legg, A. Wilkinson, **V. Kappatos**, C. Selcuk, T-H. Gan, “Coded waveform excitation for high resolution ultrasonic guided wave response”, IEEE Transactions on Industrial Informatics, IEEE publications, 12 (1), pp 257-266, February 2016.
- [J24] M. Kogia, L. Cheng, A. Mohimi, **V. Kappatos**, T. H. Gan, W. Balachandran, C. Selcuk, “Electromagnetic acoustic transducers applied to high temperature plates for potential use in the solar thermal industry”, Applied Sciences, MDPI, 5(4), pp. 1715-1734, 2015.
- [J23] M. Papaalias, L. Cheng, A. Mohimi, **V. Kappatos**, C. Selcuk, L. Constantinou, F. P. Marquez, T-H. Gan, “Inspection and structural health monitoring techniques for concentrated solar power plants”, Renewable Energy Journal, Elsevier, 85, pp. 1178-1191, 2016.
- [J22] M. Legg, M. Yucel, **V. Kappatos**, C. Selcuk, T.H. Gan, “Increased range of ultrasonic guided wave testing of overhead transmission line cables using dispersion compensation”, Ultrasonics, Elsevier, 62, pp. 35-45, September 2015.
- [J21] H. Habibi, L. Cheng, H. Zheng, **V. Kappatos**, C. Selcuk, T-H. Gan, “A dual de-icing system for wind turbine blades combining high-power ultrasonic guided waves and low-frequency forced vibrations”, Renewable Energy Journal, Elsevier, 83, pp. 859-870, 2015.
- [J20] M. Legg, M. Yucel, I. De Carellan, V. Kappatos, C. Selcuk, T.H. Gan, “Acoustic methods for biofouling control: A review”, Ocean Engineering, Elsevier, 103, pp. 237-247, 15th July 2015.
- [J19] A.Y.B. Chong, A. Bennecer, F. Hagglund, S. Siddiqi, **V. Kappatos**, C. Selcuk, T-H. Gan, “A new synthetic training environment system based on an ICT-approach for manual ultrasonic testing”, Measurements: Journal of the International Measurement Confederation, Elsevier, 71, pp. 11-22, June 2015.
- [J18] B. Salski, W. Gwarek, P. Korpas, S. Reszewicz, A.Y.B. Chong, **V. Kappatos**, C. Selcuk, T.H. Gan, P. Theodorakeas, I. Hatzioannidis, M. Kouli, M. Iwanowski, B. Zieliński, “Non-destructive testing of carbon-fibre-reinforced polymer materials with a radio-frequency inductive sensor”, Composite Structures, Elsevier, 122, pp. 104–112, April 2015.
- [J17] J. F. Chacon, **V. Kappatos**, W. Balachandran, T-H. Gan, “A novel approach for incipient defect detection in rolling bearings using acoustic emission technique”, Applied Acoustics, Elsevier, 89, pp. 88-100, March 2015.
- [J16] S. Moustakidis, **V. Kappatos**, P. Karlsson, C. Selcuk, T-H. Gan, K. Hrissagis, “An intelligent methodology for railways monitoring using ultrasonic guided waves”, Journal of Nondestructive Evaluation, Springer, 33 (4), pp. 694-710, December 2014.
- [J15] T-H. Gan, G. Ye, B. Neal, A. Boot, **V. Kappatos**, C. Selcuk, “An automated ultrasonic NDT system for in-situ inspection of wind turbine blades”, Journal of Mechanics Engineering and Automation, Scientific and Academic Publishing, 4, pp. 781-788, 2014.
- [J14] E. Artigao, J. F. Chacon, B. Wang, T-H Gan, **V. Kappatos**, C. Selcuk, S. Soua, “Development of a baseline as a novel strategy for a condition monitoring system for the assessment of wind turbine generators”, Insight, BINDT, 56 (8), pp. 417 - 421, 2014.
- [J13] D. Karagiannis, D. Stamatelos, T. Spathopoulos, A. Solomou, T. Machairas, N. Chrysohoidis, D. Saravanos, **V. Kappatos**, “Airfoil morphing based on SMA actuation technology”, Aircraft Engineering and Aerospace Technology, Emerald, 86 (4), pp. 295 - 306, 2014.
- [J12] J. F. Chacon, E. Artigao, **V. Kappatos**, G. Asfis, T-H Gan, W. Balachandran, “Shaft angular misalignment detection using acoustic emission”, Applied Acoustics, Elsevier, 85C, pp. 12-22, 2014.
- [J11] M. G. Ponomarev, **V. Kappatos**, C. Selcuk, T-H. Gan, M. Amos, H. Halai, C. Gierl, M. Ilovea, “Digital radiographic inspection technique for production friendly quality assessment of PM parts”, Powder Metallurgy, Maney, 56 (2), pp. 92-95, 2013.
- [J10] C. Apostolopoulos, **V. Kappatos**, “Tensile properties of corroded embedded steel bars B500c in concrete”, International Journal of Structural Integrity, Emerald, 4 (2), pp. 275-294, 2013.
- [J9] **V. Kappatos**, C. Apostolopoulos, “Tensile mechanical properties prediction of reinforcing B500C steel bars in coastal structures”, Materials Evaluation, Elsevier, 71 (1), pp. 83-89, 2013.
- [J8] A. Kavga, **V. Kappatos**, “Estimation of the temperatures in an experimental infrared heated greenhouse using neural network models”, International Journal of Agricultural and Environmental Information Systems, IGI Global, 4(2), pp. 14-22, 2013.
- [J7] Sp. Pantelakis, K. Tserpes, **V. Kappatos**, “The effect of imperfect bonding on the pull-out behavior of non-crimp fabric Pi-shaped joints”, Computational Materials Science, Elsevier, 50, pp. 1372-1380, 2011.

[J6] V. Kappatos, E. Dermatas, “Feature selection for robust localization of acoustic emission sources in ship-hull structures”, *Research in Nondestructive Evaluation*, Taylor & Francis, 21 (2), pp. 127-140, 2010.

[J5] V. Kappatos, A. Chamos, Sp. Pantelakis, “Assessment of the effect of existing corrosion on the tensile behaviour of magnesium alloy AZ31 using neural networks”, *Materials and Design*, Elsevier, 31 (1), pp. 336-342, 2009.

[J4] V. Kappatos, E. Dermatas, “Neural localization of acoustic emission sources in ship hulls”, *Journal of Marine Science and Technology*, Springer, 14, pp. 248-255, 2009.

[J3] V. Kappatos, E. Dermatas, “Feature selection for robust classification of crack and drop signals”, *Structural Health Monitoring*, SAGE, 8, pp. 59-70, 2009.

[J2] V. Kappatos, E. Dermatas, “Feature extraction for crack detection in rain conditions”, *Journal of Nondestructive Evaluation*, Springer, 26 (2-4), pp. 57-70, 2007.

[J1] V. Kappatos, E. Dermatas, “Crack detection in noisy environment including raining conditions”, *Aircraft Engineering and Aerospace Technology*, Emerald, 79 (2), pp. 163-169, 2007.

3.4. Book Articles

[BA7] M. Kostan, A. Mohimi, C. Nageswaran, V. Kappatos, T-H. Gan, L. Wrobel, C. Selcuk, “Assessment of piezoelectric and elastic properties of Gallium Orthophosphate (GaPO₄) single crystal bar resonators for development of high temperature phased array probes”, (Proceedings of the 5th International Conference on Materials and Applications for Sensors and Transducers, Mykonos, Greece, 27-30 September, 2015), *Materials Science and Engineering 108*, Institute of Physics-IOP Publishing, 2016.

[BA6] M. Kogia, L. Cheng, A. Mohimi, V. Kappatos, T. H. Gan, W. Balachandran, C. Selcuk, “An Experimental investigation of electromagnetic acoustic transducers applied to high temperature plates for potential use in solar thermal industry”, *Emerging Technologies in Non-Destructive Testing VI: Proceedings of the 6th International Conference on Emerging Technologies in Non-Destructive Testing (Brussels, Belgium, 27-29 May 2015)*, CRC Press, 24th November, 2015.

[BA5] J. L. Chacon, V. Kappatos, C. Selcuk, A. Romero, J. Jimenez, S. Souza and T-H. Gan, “Development of a condition monitoring system for tidal stream generators rotating components combining acoustic emission and vibration analysis”, *Emerging Technologies in Non-Destructive Testing VI: Proceedings of the 6th International Conference on Emerging Technologies in Non-Destructive Testing (Brussels, Belgium, 27-29 May 2015)*, CRC Press, 24th November, 2015.

[BA4] B. Salski, W. Gwarek, P. Kopyt, P. Theodorakeas, I. Hatzioannidis, M. Kouj, A.Y.B. Chong, S.M. Tan, V. Kappatos, C. Selcuk, T.H. Gan, “Portable automated radio-frequency scanner for non-destructive testing of carbon-fibre-reinforced polymer composites”, *Emerging Technologies in Non-Destructive Testing VI: Proceedings of the 6th International Conference on Emerging Technologies in Non-Destructive Testing (Brussels, Belgium, 27-29 May 2015)*, CRC Press, 24th November, 2015.

[BA3] S. Moustakidis, V. Kappatos, P. Karlsson, C. Selcuk, K. Hrissagis, T-H. Gan, “An automated long range ultrasonic rail flaw detection system based on the support vector machine algorithm”, *Computers in Railways XIII: Computer System Design and Operation in the Railway and Other Transit Systems*, WIT press, pp. 199-210, September 2012.

[BA2] I. Chatzis, V. Kappatos, E. Dermatas, “Filter selection for multi-spectral image acquisition using the feature vector analysis methods”, *Intelligent Production Machines and Systems*, pp. 283-288, Elsevier, 2006.

[BA1] V. Kappatos, E. Dermatas, “Neural network classification of acoustic emission and drops signals”, *Mathematical Methods in Scattering Theory and Biomedical Engineering*, pp. 171-178, World Scientific, 2005.

3.5. Conference Publications - Presentations - Posters

[C63] D. Stamatelos, I. Lekea, V. Kappatos, “Development of an educational tool for evaluating applications of strength of materials to aircraft structures”, *International Aeronautical and Aerospace Conference (OLCAAC-2019)*, Venice, Italy, 14-15 November, 2019. (Poster).

[C62] V. Kappatos, “Maintenance (Inspection, Structural and Condition monitoring): A Key factor for Energy Efficiency”, 2nd Energy Union Future Leaders - Academy, Greek Energy Forum, Thessaloniki, April 12 – 14, 2019. (Only Presentation).

- [C61] V. Tzitzilonis, **V. Kappatos**, E. Dermatas and G. Apostolopoulos, “*Classification of occluded 2D objects using deep learning of 3D shape surfaces*”, 10th Hellenic Conference on Artificial Intelligence (SETN’18), Patras, Greece, July 9-15, 2018.
- [C60] A. Kavga, F. Evangelopoulou, G. Trypanagnostopoulos, **V. Kappatos**, “*Effects of Infrared Radiation on Growth Parameters and Physiological Characteristics of Eggplant Cultivation*”, New Engineering Concepts for a Valued Agriculture - AgEng2018conference, Wageningen, the Netherlands, July 8-12, 2018.
- [C59] **V. Kappatos**, P. Karvelis, G. Georgoulas, V. Tzitzilonis, “*Optimum Position of Acoustic Emission Sensors for Ship Hull Structural Health Monitoring Based on Deep Machine Learning*”, Sixth International Conference on Advances in Mechanical and Robotics Engineering - AMRE 2017, 8–9 December 2017, Rome, Italy.
- [C58] D. Stamatelos, **V. Kappatos**, “*Structural assessment of aerospace components using image processing algorithms and Finite Element models*”, 12th International Aerospace Supply Fair, 12th AIRTEC, 24-26 October, 2017, AeroExpoPark, Munich, Germany.
- [C57] V. L. Jantara Junior, J. Zhou, S. Roshanmanesh, F. Hayati, S. Hajiabady, H. Dong, H. Basoalto, X. Y. Li, F. P. Garcia Maquez, A. P. Marugan, **V. Kappatos**, L. Constantinou, Z. Q. Lang, M. Papaelias, “*Driving forward wind turbine industrial standards on gearbox materials, maintenance, remaining lifetime assessment and condition monitoring methodologies*”, 6th Annual British Conference of Non-Destructive Testing, 5-7 September 2017, The International Centre in Telford, Telford, United Kingdom.(Only Presentation).
- [C56] N. Avdelidis, **V. Kappatos**, G. Georgoulas, P. Karvelis, C.K. Deli, P. Theodorakeas, G. Giakas, A. Tsiokanos, M. Kouli, A.Z. Jamurtas, “*Detection and characterization of exercise induced muscle damage (EIMD) via thermography and image processing*”, PIE Smart Structures/NDE, Portland, Oregon, USA, 25–29 March, 2017. Portland, Oregon, United States, 25 - 29 March 2017.
- [C55] G. Apostolopoulos, V Tzitzilonis, **V. Kappatos**, E. Dermatas, “*Disguised face identification using multi-modal features in a quaternionic form*”, The 7th IET International Conference on Imaging for Crime Detection and Prevention (ICDP-16), Madrid, Spain, 23-25 November 2016.
- [C54] **V. Kappatos**, G. Asfis, K. Salonitis, V. Tzitzilonis, N. P. Avdelidis, E. Cheilakou, P. Theodorakeas, “*Theoretical assessment of different ultrasonic configurations for defects detection in composite components*”, The 5th International Conference on Through-life Engineering Services (TESConf 2016), Cranfield University, United Kingdom, 1-2 November, 2016. Published in: Procedia CIRP, Vol. 59, 2017, Pages 29–34.
- [C53] S. Roshanmanesh, F. Hayati, **V. Kappatos**, F. P. Garcia Marquez, A. PliegoMarugán, C. Q. Gómez Muñoz, C. Selcuk, T.-H. Gan and M. Papaelias, “*Drive-train condition monitoring for offshore wind and tidal turbines*”, 2nd International Conference on Renewable Energies Offshore (Renew 2016), Lisbon, Portugal, 24-26 October 2016. (Only Presentation).
- [C52] G. Georgoulas, **V. Kappatos**, G. Nikolakopoulos, “*Acoustic emission localization on ship hull structures using deep learning approach*”, 23rd International Conference of Vibroengineering on Modeling, Identification and Fault Detection in Oil and Gas Equipment and Infrastructures, Istanbul, Turkey, 7-9 October, 2016, Vibroengineering PROCEDIA, Vol. 9, 2016, p. 56-61.
- [C51] **V. Kappatos**, G. Georgoulas, N. P Avdelidis, K. Salonitis, “*Tidal Stream Generators, current state and potential opportunities for condition monitoring*”, International conference on Dynamics of Strong Nonlinear Systems (The 22nd Vibroengineering International Conference), Moscow, Russia, 4-7 October, 2016, Vibroengineering PROCEDIA, Vol. 8, 2016, pp. 285 – 294.
- [C50] J. Sun, A. Chong, O. Gilmour, **V. Kappatos**, C. Selcuk, T.H. Gan, G. Foulds, M. Thorton, “*Automated defect characterization on composite materials using enhanced image processing technique for ultrasonic test*”, Aerospace Event 2016, BAWA Centre, Bristol, United Kingdom, 13-14 April, 2016. (Only Presentation).
- [C49] W. Duan, H. Habibi, **V. Kappatos**, C. Selcuk, T-H. Gan, “*Excitation of guided waves in finite width plates using a numerical approach*”, ICNTE 2016, 18th International Conference on Nondestructive Testing and Evaluation, Madrid, March 24 - 25, 2016. (Only Poster Presentation).
- [C48] A. Chong, S-M. Tan, R. Arondekar, T. Parthipan, S. Moustakidis, **V. Kappatos**, C. Selcuk, T-H. Gan, “*Non-destructive evaluation of aircraft cables using ultrasonic guided wave technique*”, 7th International Symposium on NDT in Aerospace, Bremen, Germany, 16 - 18 November, 2015.
- [C47] J. Sun, I. Szabo, M. Livadas, **V. Kappatos**, C. Selcuk, T-H. Gan, “*Automatic defect detection of powder metallurgy (PM) parts using three dimensional x-ray computed tomography images*”,

European Powder Metallurgy Congress and Exhibition (Euro PM2015), Reims, France, 4-7 October, 2015.

[C46] I. Szabo, J. Sun, **V. Kappatos**, C. Selcuk, T-H. Gan, “*X-ray enclosure design and prototype for non-destructive testing of net shape parts from particulate materials*”, European Powder Metallurgy Congress and Exhibition (Euro PM2015), Reims, France, 4-7 October, 2015.

[C45] P. Mateljok, M. Budimir, E. Artigao, **V. Kappatos**, E. Cheilakou, A. Garcia, “*Vortex robot for rapid low cost scanning and improved non-destructive testing of large concrete structures*”, 24th International Conference Nuclear Energy, Slovenia, September 14-17, 2015.

[C44] H. Zheng, **V. Kappatos**, E. Niederleithinger, J.-P. Ertel, M. Grohmann, C. Selcuk, T-H. Gan, “*Defect detection in concrete pile using impulse response measurements with sine sweep excitations*”, The International Symposium Non-Destructive Testing in Civil Engineering, Berlin, Germany, 15-17 September 2015.

[C43] M. Kostan, L. Cheng C. Carpentier, C. Nageswaran, A. Mohimi, **V. Kappatos**, T-H. Gan, L. Wrobel, C. Selcuk, “*Development of phased array probes to operate in time-of-flight diffraction configuration to continuously monitor defect growth in thermal power plants*”, The 54th Annual Conference of the British Institute of Non-Destructive Testing, Telford, United Kingdom, 8-10 September 2015.

[C42] M. K. Yucel, S. Fateri, M. Legg, A. Wilkinson, **V. Kappatos**, C. Selcuk, T-H. Gan, “*Pulse-compression based iterative time-of-flight extraction of dispersed ultrasonic guided waves*”, INDIN 2015 IEEE International Conference on Industrial Informatics, Cambridge, United Kingdom, 22-24 July 2015.

[C41] D. Stamatelos, F. Stamatelos, **V. Kappatos**, Th. Spathopoulos, “*Numerical structural integrity assessment of an Aircraft’s delaminated composite plate against buckling*”, 6th International Conference on “Experiments/Process/System Modelling/Simulation/Optimization, 6th IC-EpsMsO, Athens, Greece, 8-11 July, 2015.

[C40] H. Habibi, G. Edwards, L. Cheng, H. Zheng, A. Marks, **V. Kappatos**, C. Selcuk, T-H. Gan, “*Developing a novel ice protection system for wind turbine blades using vibrations of both short and long wavelengths*”, SAE 2015 International Conference on Icing of Aircraft, Engines, and Structures, Prague, Czech Republic, 22-25 June, 2015.

[C39] J. F. Chacon, H. Mahal, S. M. Peces, **V. Kappatos**, C. Selcuk, T-H. Gan, “*Damage detection in hydrogen vehicle pressure vessels using acoustic emission technique*”, The Twelfth International Conference on Condition Monitoring and Machinery Failure Prevention Technologies, from sensors through diagnostics and prognostics to maintenance, CM 2015 and MFPT 2015, Oxford, United Kingdom, 9-11 June 2015.

[C38] I. Szabo, J. Sun, **V. Kappatos**, C. Selcuk, “*A new automated in line quality control system based on non-destructive evaluation for additive manufacturing of net-shape parts from particulates*”, Additive Manufactured Metallic Materials Properties & Structures Conference, IOM3 Institute, Coventry, United Kingdom, 14 May 2015. (Only Presentation).

[C37] R. Rodríguez, A. Molinero, T. Butcher, L. Gelman, B. Handley, **V. Kappatos**, O. Klingmueller, G. de Nijs, E. Niederleithinger, M. Rastall, R. Rippel, T. Suckling, P. Trampus, H. Zheng, “*Ensayos de integridad de pilotesencimentaciones profundas (PILEINSPECT)- Integrity testing of deep foundation piles (PILEINSPECT)*”, 13th National Congress of Non-Destructive Testing, Sevilla, Spain, 6-8 May, 2015.

[C36] P. Trampus, R. Rodriguez, T. Suckling, O. Klingmüller, G. de Nijs, B. Handley, R. Ryppele, L. Gelman, E. Niederleithinger, **V. Kappatos**, H. Zheng, M. Ioannidis, “*Integrity testing of deep foundation piles*”, 9th Hungarian NDT Conference and Exhibition, Eger, Hungary, 22-24 April, 2015. (Only Poster).

[C35] A. Monici, B. Salski, A.Y.B. Chong, S.M. Tan, P. Theodorakeas, I. Hatzioannidis, **V. Kappatos**, C. Selcuk, T.H. Gan, “*New Approach for the NDT tests of Carbon Fiber Reinforced Polymer: The CompHealth RF*”, Convegno I controllati non distruttivi nell’automotive e nellameccanica (Conference on Non-destructive tests in automotive and mechanics), Maranello; Italy, 15th April, 2015. (Only Poster).

[C34] V. Tzitzilonis, L. Cheng, **V. Kappatos**, C. Selcuk and T.H. Gan, “*Ultrasonic prevention of biofouling from marine electricity generators*”, Wave & Tidal 2015, 12th Annual Conference & Exhibition, Edinburgh, United Kingdom, 25–26 February 2015. (Only Presentation).

[C33] A.Y.B. Chong, B. Salski, P. Theodorakeas, I. Hatzioannidis, **V. Kappatos**, C. Selcuk, T-H. Gan, “*Inspection of carbon-fibre-reinforced polymer composites using radio frequency inductive sensors and ultrasonic techniques*”, 6th International Symposium on NDT in Aerospace, Madrid, Spain, 12-14 November, 2014.

- [C32] M. K. Yucel, M. Legg, M. Livadas, **V. Kappatos**, C. Selcuk, T-H. Gan, “*Identification and utilisation of ultrasonic guided waves for inspection of ACSR cables*”, 11th European Conference on Non-Destructive Testing (ECNDT), Prague, Czech Republic, 6-10 October, 2014.
- [C31] G. Asfis, C. Carpentier, D. Panggabean, C. Nageswaran, V. Papadimitriou, I. Roiditis, P. Chatzakos, Z. Qu, J.L.F. Chacon, A. Chong, **V. Kappatos**, C. Selcuk, T-H. Gan, “*Inspection of thin steel gauge welds for the shipping industry using laser guided inspection robot*”, 11th European Conference on Non-Destructive Testing (ECNDT), Prague, Czech Republic, 6-10 October, 2014.
- [C30] A. Bulkai, Z. Baranyai, G. Halmi, F. Their, M. Ignatev, W. Scharff, I. Szabo, G. Logeswaran, **V. Kappatos**, C. Selcuk, T-H. Gan, “*Enable the powder metallurgy process to expand to new markets with more reliable parts and lower manufacturing costs through the inspection of green parts*”, European Powder Metallurgy Congress and Exhibition (Euro PM2014), Salzburg, Austria, 21-24 September, 2014.
- [C29] L. Clarke, M. Vieyra, I. Nicholson, I. Szabo, G. Logeswaran, **V. Kappatos**, C. Selcuk, T-H Gan, “*Development of an automated digital radiography system for the non-destructive inspection of powder metallurgy green parts*”, European Powder Metallurgy Congress and Exhibition (Euro PM2014), Salzburg, Austria, 21-24 September, 2014.
- [C28] M. Kogia, A. Mohimi, L. Cheng, **V. Kappatos**, C. Selcuk, T-H. Gan, “*High temperature electromagnetic acoustic transducer for the inspection of jointed solar thermal tubes*”, Young Welding Professionals International Conference (YPIC 2014), Budapest, Hungary, 17-20 September, 2014.
- [C27] Z. Qu, M. K. Yucel, A. Chong, J. F. Chacon, **V. Kappatos**, C. Selcuk, T-H. Gan, “*Surface weld flaw identification using laser triangulation principle*”, Young Welding Professionals International Conference (YPIC 2014), Budapest, Hungary, 17-20 September, 2014.
- [C26] L. Cheng, A. Mohimi, M. Kogia, **V. Kappatos**, C. Selcuk, T-H. Gan, “*Numerical study on shear horizontal electromagnetic acoustic transducers for generation of ultrasonic guided waves*”, 10th Annual Comsol Conference, Cambridge, United Kingdom, 17-19 September, 2014.
- [C25] I. G. Carellan, C. Selcuk, **V. Kappatos**, M. Legg, T-H. Gan, “*Investigation of the limescale removal from the inner wall of pipelines using ultrasonic guided waves*”, 1st International conference on ultrasonic-based applications: from analysis to synthesis (ULTRASONICS-2014), Lisbon, Portugal, 14-17 September, (Only Presentation).
- [C24] G. Ye, B. Neal, A. Boot, **V. Kappatos**, C. Selcuk, T-H Gan, “*Development of an ultrasonic NDT system for automated in-situ inspection of wind turbine blades*”, 7th European Workshop on Structural Health Monitoring (EWSHM), Nantes, France, 8-11 July, 2014.
- [C23] I. Carellan, S. Moustakidis, M. Legg, R. Dave, **V. Kappatos**, C. Selcuk, P.O. Jost, H. Krause, J. Seton, T-H. Gan, K. Hrissagis, “*Characterization of ultrasonics wave propagation in the application of prevention of fouling on ship’s hull*”, International Conference on Maritime Technology (ICMT 2014), Glasgow, United Kingdom, 7-9 July, 2014.
- [C22] I. Szabo, I Nicholson, G. Logeswaran, **V. Kappatos**, C. Selcuk, T-H Gan, “*Enclosure design and development for non-destructive inspection tool based on digital radiography of green PM parts*”, 7th International Powder Metallurgy Conference & Exhibition, Gazi University, Ankara, Turkey, 24-28 June, 2014.
- [C21] V. Kalinin, A. Stopps, J. F. Chacon, E. Artigao, **V. Kappatos**, C. Selcuk, T-H Gan, D. Lekou, R. Ginige, “*Novel torque sensor design and enhanced envelope method of acoustic emission signals in condition monitoring of the nacelle in wind turbines*”, The 11th International Conference on Condition Monitoring and Machinery Failure Prevention Technologies (CM & MFPT 2014), Manchester, United Kingdom, 10-12 June 2014.
- [C20] E. Artigao, J. F. Chacon, **V. Kappatos**, C. Selcuk, T-H Gan, “*Development of a baseline as a novel strategy for a condition monitoring system for the assessment of wind turbine generators*”, The 11th International Conference on Condition Monitoring and Machinery Failure Prevention Technologies (CM & MFPT 2014), Manchester, United Kingdom, 10-12 June 2014.
- [C19] T. Parthipan, P. Jackson, A. Chong, M. Legg, **V. Kappatos**, A. Mohimi, C. Selcuk, T.H. Gan, S. Moustakidis, K. Hrissagis, “*Long Range Ultrasonic inspection of aircraft wiring*”, International Symposium on Industrial Electronics (ISIE 2014), Istanbul, Turkey, 1-4 June 2014.
- [C18] B. Salski, W. Gwarek, J. Krupka, P. Korpas, A.Y.B. Chong, **V. Kappatos**, C. Selcuk, T.H. Gan, P. Theodorakeas, V. Dritsa, M. Kouli, H. Tekin, C. Sapmaz, “*Radio frequency sensing for non-destructive testing of carbon fibre reinforced composite materials for structural health monitoring*”, 7th International Workshop NDT in Progress Fraunhofer Institute for Nondestructive Testing, Dresden, Germany, 7–8 November, 2013.

- [C17] M. Iovea, M. Neagu, B. Stefanescu, G. Mateiasi, A. L. Clarke, P. I. Nicholson, M. Ponomarev, **V. Kappatos**, C. Selcuk, T.-H. Gan, “*PM parts fast in-line x-ray digital radiography*”, International Powder Metallurgy Congress and Exhibition, Euro PM 2013; Gothenburg, Sweden, 15-18 September 2013.
- [C16] M. Ponomarev, **V. Kappatos**, C. Selcuk, T.-H. Gan, M. Amos, H. Halai, C. Gierl, M. Iovea, “*Development of a digital radiographic inspection technique for production friendly quality assessment of powder metallurgy parts*”, European Powder Metallurgy Congress and Exhibition (Euro PM2012), Switzerland, 16-19 September 2012.
- [C15] M. Iovea, B. Stefanescu, M. Neagu, G. Mateiasi, M. Amos, H. Halai, M. Ponomarev, **V. Kappatos**, C. Selcuk, T.-H. Gan, C. Gierl “*Preliminary NDT investigation of sintered powder metallurgy parts by high-resolution TDI based X-ray digital radiography*”, European Powder Metallurgy Congress and Exhibition (Euro PM2012), Switzerland, 16-19 September 2012.
- [C14] **V. Kappatos**, C. Selcuk, T.-H. Gan, Y. Gharaibeh, “*Decreasing the influence of dispersive wave modes in long-range ultrasonic rail testing using wavelets*”, 5th IET conference on Railway Condition Monitoring and Non-Destructive Testing, Derby, United Kingdom, 29-30 November 2011.
- [C13] C. Campos-Castellanos, Y. Gharaibeh, P. Mudge, **V. Kappatos**, “*The application of long range ultrasonic testing (Irut) for examination of hard to access areas on railway tracks*”, 5th IET conference on Railway Condition Monitoring and Non-Destructive Testing, Derby, United Kingdom, 29-30 November 2011.
- [C12] Sp. Pantelakis, K. Tserpes, **V. Kappatos**, “*Ultrasonic inspection of imperfect bonding and its effects on the mechanical behavior of NCF Pi-shaped joints*” European Congress and Exhibition on Advanced Materials and Processes, Glasgow, United Kingdom, 7-10 September, 2009.
- [C11] Sp. Pantelakis, K. Tserpes, **V. Kappatos**, “*The effect of imperfect bonding on the mechanical performance of non-crimp fabric Pi-shaped joints: A Numerical Study Based on Ultrasonic C-scan Data*”, International Workshop on Computational Mechanics of Materials (IWCM 19), Constanta, Romania, 1-4 September 2009.
- [C10] G. Georgoulas **V. Kappatos**, C. Stylios, E. Dermatas, “*Wavelet usage for feature extraction for crack localization*”, 17th Mediterranean Conference on Control and Automation (MED), Thessaloniki, Greece, 24-26 June, 2009.
- [C9] **V. Kappatos**, G. Georgoulas, C. Stylios, E. Dermatas, “*Evolutionary dimensionality reduction for crack localization in ship structures using a hybrid computational intelligent approach*”, International Joint Conference on Neural Network (IJCNN), Atlanta, 14-19 June, 2009.
- [C8] **V. Kappatos**, Dermatas Evangelos, “*Crack location in ship hulls*”, Conference on Non-Destructive Testing of the Hellenic Society for NDT, Athens, Greece, 26 November, 2008 (available in Greek).
- [C7] **V. Kappatos**, G. Georgoulas, E. Dermatas, “*Crack characterization in ship hulls based on features selected using the binary particle swarm algorithm*”, 8th International Congress on Mechanics (HSTAM), Patra, Greece, July 12-14, 2007.
- [C6] **V. Kappatos**, E. Dermatas, “*Detection of acoustic emission events in raining conditions*”, National Conference Acoustic, Heraclion, Greece, 18-19 September, 2006.
- [C5] **V. Kappatos**, E. Dermatas, “*Classification of acoustic emission and drop signals using SVM, MLP and RBF networks*”, 5th National Conference on Non-Destructive Testing of the Hellenic Society for NDT, Athens, Greece, 18-19 November, 2005.
- [C4] **V. Kappatos**, E. Lympertos, E. Dermatas, “*Determination of the optimum number and sensors positions for location of acoustic-emission sources*”, National Conference Acoustic, Thessalonica, Greece, pp. 329-335, 27-28 September 2004 (available in Greek).
- [C3] E. Lympertos, **V. Kappatos**, E. Dermatas, “*Comparison of acoustic-emission source location methods*”, 1st International Conference from Scientific Computing to Computational Engineering (1st IC-SCCE), Athens, Greece, 8-10 September, 2004.
- [C2] E. Lympertos, **V. Kappatos**, E. Dermatas, “*Acoustic-emission source location in typical structures using genetic algorithms*”, 3rd Hellenic Conference on Artificial Intelligence, Samos, Greece, pp. 129-138, 5-8 May, 2004.
- [C1] **V. Kappatos**, E. Lympertos, E. Dermatas, “*Estimation of the best sensors position for minimum error location of acoustic emission sources on spherical surface*”, 3rd International Conference on Non-Destructive Testing of the Hellenic Society for NDT, Chania, Crete, Greece, pp. 123-128, 15-18 October, 2003.

3.6. Magazines

[M2] M. Legg, I. G. Carellan, V. Kappatos, C. Selcuk, T-H Gan, S. Moustakidis, P. O. Jost, T. Karayannis, *"CleanShip: A recent project for prevention and detection of fouling on ships"*, The Naval Architect, The Royal Institution of Naval Architects (RINA), 2014.

[M1] V. Kappatos, *"Life cycle assessment (LCA) in products"*, Technika, pp. 68-74, 2003 (Available in Greek).

3.7. Plenary - Keynote - Invited Speaker

[K5] V. Kappatos, Theoretical and Laboratory Phased Array Ultrasonic Testing in Aircraft Composite Components"International Aeronautical and Aerospace Conference (OLCAAC-2019), Venice, Italy, 14-15 November, 2019.

[K4] V. Kappatos, *"Acoustic Emission: a Tool for Damage and Fault Detection in Wind Turbines"*, 33rd International Conference on VIBROENGINEERING, Zittau, Germany, September, 24-26, 2018.

[K3] V. Kappatos, *"3D tool for Inspection, Planning and on-site Navigation"*, 4th Edition Wind Power Big Data and IoT Forum, Berlin, Germany, November 8-9, 2017.

[K2] V. Kappatos, *"Ice Protection Technologies in Aerospace Structures"*, I have been invited to give a Keynote speak at the International Conference on Mechanical, Material and Aerospace Engineering (2MAE 2017), Beijing Jiaotong University, China, May, 12-14, 2017.

[K1] V. Kappatos, *"Structural health monitoring on ship hulls structures using acoustic emission method"*, The 3rd International Conference on Structural Health Monitoring & Integrity Management (ICSHMIM), Chengdu, China, October 15-17th, 2016.

3.8. Submitted Publications

[SP2] D. Stamatelos, V. Kappatos, *"Design and Morphing of a Droop Nose Structure with the Assistance of Shape Memory Alloys"*, Metals, Special Issue "Modern Aerospace Materials", MDPI.

4. Other Scientific Qualifications

4.1. Awards

1. The CompHealth European funded research project (EC GA: 314935) has been selected as a finalist for two categories (i) Measurement in Action and (ii) Manufacturing Technology of the IET Innovation Awards 2015, The Brewery, London, United Kingdom, 18 November 2015.
2. The publication *"Impulse response measurement with sine sweep excitation for pile integrity testing"* was voted 3rd place in the Best Presentation Competition (of more than 100 presentations).
3. The publication *"An Experimental investigation of electromagnetic acoustic transducers applied to high temperature plates for potential use in solar thermal industry"*, 6th International Conference on Emerging Technologies in NDT, Brussels, Belgium, 27-29 May, 2015 has been awarded as the best student paper at the 6th Emerging Technologies in Non Destructive Testing Conference held in Brussels.
4. The publication *"Crack detection in noisy environment including raining conditions"*, Aircraft Engineering and Aerospace Technology, 79 (2), pp. 163-169, 2007 has been awarded as one of the three "Highly commended paper".

4.2. Reviewer of Scientific Journals

1. Mechanical Systems and Signal Processing, Elsevier.
2. Renewable, Elsevier.
3. Radiation Physics and Chemistry, Elsevier.
4. Scientific Reports, Nature.
5. Composite Structures, Elsevier.
6. Ultrasonics, Elsevier.
7. Applied Acoustic, Elsevier.

8. Measurement, Elsevier.
9. NDT &E International, Elsevier.
10. Materials and Design, Elsevier.
11. Thermal Science and Engineering Progress, Elsevier.
12. Engineering Structures, Elsevier.
13. Infrastructures, MDPI.
14. Sensors, MDPI.
15. Applied Sciences, MDPI.
16. Journal of Zhejiang University SCIENCE A, Springer.
17. Frontiers of Information Technology & Electronic Engineering, Springer.
18. Meccanica, An International Journal of Theoretical and Applied Mechanics (AIMETA), Springer.
19. Sensor Review, Emerald.
20. International Journal of Structural Integrity, Emerald.
21. Advanced Composites Letters, Sage publishing.
22. Wind Energy, John Wiley & Sons Ltd.
23. IET Generation, Transmission & Distribution, IET.
24. The European Physical Journal Special Topics (EPJ-Special Topics), EDP Sciences.
25. International Journal of Aerospace Engineering, Hindawi Publishing Corporation.
26. Journal of Electrical and Computer Engineering, Hindawi Publishing Corporation.
27. Insight - Non-Destructive Testing & Condition Monitoring, BINDT.
28. Journal of Engineering and Technological Sciences, ITB Journal Publisher.
29. Transport Problems, International Scientific Journal, Silesian University of Technology.

4.3. Organization of Special Sessions

1. Special session for the 11th IEEE International Symposium on Diagnostics for Electric Machines, Power Electronics and Drives (SDEMPED), Tinos, Greece, 28 August-1 September 2017.
2. Special session on "Condition Monitoring, Fault Diagnosis and Prognosis of Wind Turbine Components" Session Smart Materials and Nondestructive Evaluation for Energy Systems III, SPIE Smart Structures/NDE, Portland, Oregon, USA, 25–29 March, 2017.

4.4. Review Manager/Journal Committee/Scientific Advisory/Conference Committee/Conference Reviewer/Conference Co-Chair

1. Conference Co-Chair and Organizing Committee of International Aeronautical and Aerospace Conference (OLCAAC-2019), Venice, Italy, 14-15 November, 2019.
2. Editorial board of Journal of Vibroengineering, JVE Journals.
3. Editorial board of Journal of Measurements in Engineering, JVE Journals.
4. Editorial board of Journal of Mathematical Models in Engineering, JVE Journals.
5. Editorial board of Vibroengineering Procedia, JVE Journals.
6. Reviewer of Second International Conference on Mechanical, Electric and Industrial Engineering (MEIE2019), May 25-27, 2019, Hangzhou, China.
7. Review Manager, PHM Society Conference, Prognostics and Health Management (PHM) Society.
8. Member of International Programming Council of Transport Problems Journal.
9. Conference Committee on Smart Materials and Nondestructive Evaluation for Energy Systems and Industry 4.0, SPIE Smart Structures/NDE, Denver, Colorado, USA, 3–7 March, 2019.
10. Conference Committee on Smart Materials and Nondestructive Evaluation for Energy Systems IV, SPIE Smart Structures/NDE, Denver, Colorado, USA, 4–8 March, 2018.

11. Conference Committee on Smart Materials and Nondestructive Evaluation for Energy Systems III, SPIE Smart Structures/NDE, Portland, Oregon, USA, 25–29 March, 2017.
12. International Scientific Advisory Committee on The Twelfth International Conference on Condition Monitoring and Machinery Failure Prevention Technologies, from sensors through diagnostics and prognostics to maintenance, CM 2015 and MFPT 2015, Oxford, United Kingdom.
13. Reviewer of 21th CIRP Design Conference 2017, Cranfield University, 10-12 May 2017, Cranfield, United Kingdom.

4.5. Academic and Professional Memberships

1. Engineering Council of United Kingdom (CEng).
2. Fellow of The Welding Institute of United Kingdom (FWeld).
3. Member of the Institute of Electrical and Electronics Engineers (MIEEE).
4. Member of International Society for Condition Monitoring (ISCM).
5. Technical Chamber of Greece (TEE-TCG).
6. Hellenic Society for Non Destructive Testing (H.S.N.T).
7. Hellenic Institute of Acoustics (HELINA).
8. Danish Center for Applied Mathematics and Mechanics (DCAMM).
9. Member of the Society for Machinery Failure Prevention Technology (MFPT).

5. Supervision

5.1. Supervision of Post Doc, Research Associate, PhD and Master Students

	Name	Research Area	Main Supervisor	Co-Supervisor
Post Doc Supervision				
Completed				
1	Mathew Legg	Ultrasonic Guided Waves	YES	
2	Guoliang Ye	Conventional Ultrasonics	YES	
3	Liang Cheng	Electromagnetic Transducers	YES	
4	Makis Livadas	Electronics	YES	
5	Alvin Chong	Non Destructive Testing	YES	
6	Zhigang Qu	Signal Processing	YES	
7	Jiangtao Sun	Image Processing	YES	
8	Hossein Habibi	Modelling and Simulation	YES	
9	Haitao Zheng	Vibration	YES	
10	Wenbo Duan	Modelling and Simulation	YES	
Research Associate				
Completed				
1	Abbas Mohimi	High Temperature Transducers	YES	
2	Estefania Artigao	Condition Monitoring	YES	
3	Istvan Szabo	Design	YES	
4	Ignacio Carellan	Ultrasonic Guided Waves	YES	
5	Vasilis Tzitzilonis	Pattern Recognition	YES	
PhD Students				
Completed				
1	Juan Ferrando Chacon	Acoustic Emission	YES	
2	Mehmet Yucel	Ultrasonic Guided Waves	YES	
3	Maria Kogia	Electromagnetic Transducers	Tat-Hean Gan	YES
4	Mario Kostan	High Temperature Transducers	Tat-Hean Gan	YES
Master Students				

Completed				
1	Jacopo Insalaco	Metamaterial	YES	
2	Anders Skovlund Hansen and Thomas Pries Vestrup	ConditionMonitoring	YES	

5.2. Supervision of Dissertation Theses

	Title	Main Supervisor	Co-Supervisor
Department of Technology and Innovation, University of Southern Denmark, Denmark.			
Completed			
1	Development and market analysis for a discrete sex toy, 2018	YES	
2	Web placement in large blades, 2018	YES	
Department of Engineering, School of Science and Technology, University of Northampton, United Kingdom.			
Completed			
1	Damage assessment from material degradation using phased array data, 2012	YES	
2	Investigation into carbon core PCB ports, 2012	YES	
Department of Electrical and Computer Engineering, University of Patras, Greece.			
Completed			
1	Noise elimination of signal using wavelet for crack detection in plates	E Dermatas	YES
2	Analysis cross correlation, multiple filters and transformation FFT for the acoustic emission source location	E Dermatas	YES
3	Leak and crack source location in underground pipes (transport liquids) using acoustic methods	E Dermatas	YES
4	Study and manufacture system which defines the density of liquids/solid using piezoelectric sensors	E Dermatas	YES
5	Crack detection in ships (transport fuels) using acousto-ultrasonic methods	E Dermatas	YES
Department of Mechanical & Aeronautical Engineering, University of Patras, Greece.			
Completed			
1	Localization of imperfect bonding of non-crimp fabric Pi-shaped joints using ultrasonic techniques	S Pantelakis	YES
Department of Agricultural Machinery and Irrigation, Technological Education Institute, Messolonghi, Greece.			
Completed			
1	Geothermal energy and her application for the heating of greenhouse installations	YES	
2	Measurement of volume and surface of vegetation with non destructive testing methods	YES	
3	Analysis of operation of hydraulic systems of track excavator Liebherr-942	YES	
4	Planning of operation of vehicles-shop	YES	
5	Analysis of operation of olive harvester New Holland VX7090	YES	
Department of Mechanical, Technological Education Institute, Patra, Greece.			
Completed			
1	Source location and measurement of distance with the use of ultrasonic methods. Applications in the quality control	YES	
2	Source location of leak in underground pipes water with the use of non destructive methods	YES	

5.3. Chairman of PhD Thesis

Department of Technology and Innovation, University of Southern Denmark, Denmark
Sustainable Procurement in Supply Chain Focusing on Danish Context, Devika Kannan, 2019.

5.4. Examiner of PhD, Master by Research, Master, Dissertation Theses and Courses

Title	
PhD Thesis	
University of Birmingham, School of Metallurgy and Materials, United Kingdom.	
1	Damage Detection and Damage Evolution Monitoring of Composite Materials For Naval Applications Using Acoustic Emission Testing, Nikolaos Angelopoulos, 2016
Master by Research Theses	
Master by Research in University of Birmingham, School of Metallurgy and Materials, United Kingdom.	
1	An Investigation of Non-destructive Testing Techniques for Concrete Structures, Mehmet Emin Uyanik, 2019
2	Structural health condition monitoring of carbon-fibre based on materials using acoustic emission techniques, 2015
Master Theses	
Master of Science in Lift Engineering at the University of Northampton, School of Science and Technology, United Kingdom.	
1	Identification and investigation of relationships and dependencies of a composite flat belt suspension and transmission mean imposes to modern traction lift systems, 2012
Dissertation Theses	
Department of Agricultural Machinery and Irrigation, Technological Education Institute, Messolonghi, Greece.	
1	CAN BUS: The technology of Tele-diagnostics for agricultural tractor
2	Mechanical equipment of wine factory and instruments of process of vine
3	Legislation and analysis of the developments in the safety and hygiene of the workers in the Public Company of Water Supply and Sewerage in Messolonghi
4	Standards and safety of machines
5	Dynamometers of electric resistances and trials
Department of Mechanical Engineering, Technological Education Institute, Patra, Greece.	
1	Methods for non destructive inspection in mechanical installations
2	Study of heating and air conditioning on the third storey house
Courses	
Department of Technology and Innovation, University of Southern Denmark, Denmark.	
1	Robotics, 2018
2	Experimental vibration analysis, 2016, 2017
3	Professional self study, 2016

5.5. PhD Assessment Committee

Ongoing	
Department of Electrical & Computer Engineering, University of Patras, Greece.	
1	Data Mining from Big Multimedia Database, Vasilis Tzitzilonis
Department of Materials Science & Engineering, University of Ioannina, Greece.	
1	Characterization of Advanced Materials in Structures Using Non Destructive Thermography Methods, Dimitris Exarchos.

6. Teaching Experience

January 2016 – July 2019: **Associate Professor** at Department of Technology and Innovation, University of Southern Denmark (SDU), Denmark. I have been lecturing the modules:

- "Non Destructive Evaluation".

For the programme of Master of Science in Engineering (Mechanical Engineering), 2nd Semester.

- "Mechanics Dynamics and Condition Monitoring".

For the programme of Master of Science in Engineering (Mechanical Engineering), 2nd Semester.

- "RotorDynamic".

For the programme of Master of Science in Engineering (Mechanical Engineering), 3rd Semester.

- "Specialisation Project".

For the programme of Master of Science in Engineering (Mechanical Engineering), 3rd Semester.

- "Electrical Circuits and Machines".

For the programme of Bachelor of Science in Engineering (Mechanical Engineering), 3rd Semester.

- "Sensors and Electronics".

For the programme of Bachelor of Science in Engineering (Product Development and Innovation), 4th Semester.

July 2012 - February 2013: Lecturer (Assistant Professor) at the Department of Engineering, School of Science and Technology, University of Northampton, United Kingdom. I was lecturing the following modules:

- "Mechanical principle".
- "Project engineering".
- "Ultrasonic testing".
- "Vibration monitoring".
- "Advanced ultrasonic techniques".

September 2004 - February 2011: Lecturer (Assistant Professor) at University level a broad range of modules in the area of Applied Engineering in Greece.

A. Department of Agricultural Machinery and Irrigation, Technological Education Institute, Messolonghi, Greece.

- "Automatic Control Systems and Application in Agricultural Machinery", during academic years 2005-2006, 2008-2010.
- "Machine Drawing and Design", during academic years 2009-2010.
- "Work Safety – Environmental protection", during academic years 2008-2010.
- "Land Improvement Machinery", during academic years 2008-2010.
- "Ergonomics in Agricultural Machinery", during academic years 2004-2006.

B. Department of Mechanical Engineering, Technological Education Institute, Patra, Greece.

- "Quality control", during academic years 2008-2010.
- "Maintenance of machines and safety work", during academic years 2009-2010.

September 2002 – June 2006: Laboratory Teaching Assistant at Department of Electrical & Computer Engineering, University of Patras, Greece.

- "Introduction to Computers II" (computer programming), during academic years 2002-2004.
- "Pattern Recognition I", during academic years 2004-2006.

September 2003 - December 2010: Lecturer at Technological level a broad range of modules in the area of Engineering in Greece.

Institute of Vocational Training of Aigion and Patra, Greece.

- “Elements of Technical Facilities”.
- “Computer Networks I”.
- “Facilities – Kitchen Equipment”.
- “Particular Topics in Physics”.
- “Computer Use”.
- “Elements of Engineering Technology in Electrical Appliances”.
- “Hygiene and Safety”.
- “Environmental Protection – Energy Saving”.
- “Organizing, Managing and Equipping a Driving School”.
- “Environmental Protection and Energy Saving”.
- “Biomechanical Informatics”.

January 2008 - December 2008:Teaching “Computer Science” at the Private Institute of Professional Training, Korel Plus, Patra, Greece.

7. Working Experience (Consultant)

October 2010-March 2011:

Safety consultant engineer in the Health and Safety Consultancy Company Biosafety Ltd.

October 2010-January 2011:

Consultant in the program “Quality occupations in social services” for the non-governmental, non-profit organisation, Athens Network of Collaboration Experts (ANCE).

April 2010-September 2010:

Consultant, Apostolopolos Ltd “Evaluation of the existing damage in the reinforcing steel bars from old structures”.

January 2010-March 2010:

Consultant, Apostolopolos Ltd “Classification of steel bars samples from old structures because of environmental corrosion”.