

Curriculum Vitae

Professor Achilles Vairis

Academic Qualifications

December 1997	<u>Doctor of Philosophy</u> Department of Mechanical Engineering University of Bristol, Bristol, England
July 1988	<u>Master of Engineering</u> Department of Mechanical Engineering University of Bristol, Bristol, England

Employment History

2/2020 to present	<u>Editor-in-Chief</u> of Welding International published by Taylor & Francis
9/2022 to present	<u>Professor,</u> Department of Mechanical Engineering, University of West Attica, Greece Duties: teaching, research
5/2019 – 7/2022	<u>Professor,</u> Department of Mechanical Engineering, Hellenic Mediterranean University, Greece Duties: teaching, research
8/2018 - 8/2019	<u>Research Professor,</u> Department of Mechanical Engineering, State University of New York, Korea Duties: research
8/2016 – 8/2018	<u>Professor,</u> Department of Mechanical Engineering, State University of New York, Korea Duties: teaching, research, administration
9/2016 – 8/2018	<u>Adjunct Professor,</u> School of Materials Science and Engineering, Northwestern Polytechnical University, Xi'an, China Duties: teaching, research
7/2014 - 5/2019	<u>Professor,</u> Department of Mechanical Engineering, Technological Education Institute of Crete Duties: teaching, research, administration, human resources management
10/2008 – 7/2014	<u>Associate Professor,</u> Department of Mechanical Engineering, Technological Education Institute of Crete Duties: teaching, research, administration, human resources management
6/2003 – 10/2008	<u>Assistant Professor,</u> Department of Mechanical Engineering,

5/2000 – 6/2003	Technological Education Institute of Crete Duties: teaching, research, human resources management <u>Mechanical engineer</u> Mint, Bank of Greece Duties: maintenance, printing machine repair, training, QA system
8/1998 – 12/1999	<u>Research fellow</u> National Technical University of Athens Duties: teaching, research
11/1999 – 5/2000	<u>Teaching fellow</u> Department of Energy Technology, Technological Education Institute of Athens Duties: teaching
9/1998 – 8/2000	<u>Visiting Lecturer</u> Military School of Aircraft Engineers, Attica Duties: teaching
9/1998 – 6/1999	<u>Research fellow</u> Physical Chemistry Institute, National Centre for Scientific Research “Demokritos”, Athens Duties: research
9/1998 – 6/1999	<u>Lecturer</u> Technical Training School of Army Officers, Athens Duties: teaching
2/1993 – 1/1995	<u>Research Fellow</u> Advanced Manufacturing and Automation Research Center, University of Bristol, England Duties: research
9/1992 – 1/1993	<u>Mechanical engineer</u> Industrial Property Organisation (Greek Patent Office), Athens Duties: patent classification
3/1991 – 9/1992	<u>Mechanical engineer</u> Toyota Hellas SA, Athens Duties: QA, guarantee manager, training, marketing
7/1990 – 3/1991	<u>Mechanical engineer</u> Intrasoft S.A., Athens Duties: industrial automation systems development
6/1987 – 8/1987	<u>Sponsored mechanical engineering student</u>
6/1986 – 9/1986	Procter & Gamble Ltd. (U.K.), Newcastle Upon Tyne, England Duties: production database development, automation system development, workshop training

Publications

Journal Publications

1. Vairis, A., "Investigation of frictional behaviour of various materials under sliding conditions", *European Journal of Mechanics A - Solids*, 1997, vol.16, no.6, pp.929-945. (IF: 2.931) (Q1)
2. Vairis, A., Frost, M., "High frequency linear friction welding of a titanium alloy", *Wear*, 1998 vol.217, no.1, pp.117-131. DOI: 10.1016/S0043-1648(98)00145-8 (IF: 2.950) (Q1)
3. Vairis, A., Frost, M., "On the extrusion stage of linear friction welding of Ti 6Al 4V", *Materials Science and Engineering A*, 1999, vol.271, pp.477-484. DOI: 10.1016/S0921-5093(99)00449-9 (IF: 3.414) (Q1)
4. Vairis, A., Frost, M., "Modelling the linear friction welding of titanium blocks", *Materials Science and Engineering A*, 2000, vol.292, no.1, pp.8-17. DOI: 10.1016/S0921-5093(00)01036-4 (IF: 3.414) (Q1)
5. Vairis, A., Frost, M., "Design and commissioning of a friction welding machine", *Journal of Materials and Manufacturing Processes*, 2006, vol.21, no.8, pp. 766-773. DOI: 10.1080/03602550600728356 (IF: 2.274) (Q1)
6. Vairis, A., Christakis, N., "The development of a continuum framework for friction welding processes with the aid of micro-mechanical parameterisations", *International Journal of Modelling, Identification and Control*, 2007, vol.2, no.4. pp.347-356. DOI: 10.1504/IJMID.2007.016417 (IF: 1.229) (Q3)
7. Christakis, N., Vairis, A., "An Analytical Description of the Frictional Behaviour of a Titanium Alloy", *Research Letters in Materials Science*, vol.2007, article ID 92170. (IF: 1.399) (Q2)
8. Vernardou, D., Kenanakis, G., Vlachou, K., Koudoumas, E., Kiriakidis, G., Vairis, A., Katsarakis, N., "Influence of Solution Concentration and Temperature on the Aqueous Chemical Growth of Zinc Oxide Structures", *Physica Status Solidi A*, 2008, vol.5, no.10, pp.3348–3352. DOI: 10.1002/pssc.200778879 (IF: 3.721) (Q2)
9. Vairis, A., "Superplasticity Effects and Strain Rate Dependency in a Material Joining Process", *Journal of Engineering Science and Technology Review*, 2008, vol.1, pp.28-32. DOI: 10.25103/jestr.021.19 (Q3)
10. Vairis, A., Petousis, M., "Designing experiments to study welding processes: using the Taguchi method", *Journal of Engineering Science and Technology Review*, 2009, vol.2, no.1, pp.99-103. (Q3)
11. Petousis, M., Vairis, A., Kandyla, B., Stefanoudakis, G., Vidakis, N., "A study on a reconstructed anterior cruciate ligament", *Advanced Materials Research*, 2012, vol.433-440, pp.763-769. DOI: 10.4028/www.scientific.net/AMR.433-440.763
12. Li, W.Y., Shi, S.X., Wang, F.F., Ma, T.J., Li, J.L., Gao, D.L., Vairis, A., "Heat Reflux in Flash and Its Effect on Joint Temperature History during Linear Friction Welding of Steel", *International Journal of Thermal Sciences*, 2013, vol.67, pp.192-199. DOI: 10.1016/j.ijthermalsci.2012.12.004 (IF: 3.488) (Q1)
13. Yamileva, A.M. Medvedev, A.Yu. Nasibullayev, I.Sh., Selivanov, A.S., Gazizov, R.K , Vairis, A., "A two-parameter 2D-model of the elastic stage of linear friction welding using ANSYS Mechanical finite element analysis programme", *Journal of Engineering Science and Technology Review*, 2012, vol.5, no.3, pp.6-9. DOI: 10.25103/jestr.053.02 (Q3)
14. Vairis, A., "Mathematical modelling of the linear friction welding process", *Journal of Engineering Science and Technology Review*, 2012, vol.5, no.3, pp.25-31. DOI: 10.25103/jestr.053.04 (Q3)

15. Medvedev, A., Vairis, A., Nikiforov, R., Supov., A., "Energy balance of the linear friction welding process", *Journal of Engineering Science and Technology Review*, 2012, vol.5, no.3, pp.20-24. (Q3)
16. Yamileva, A.M., Medvedev, A.Yu, Nasibullayev, I. Sh. Alexandrov, I.V., Vairis, A., «Construction of two-dimensional model of a linear friction welding process including forging stage», *Vestnik USATU*. Ufa, Russia, 2012. vol.16, No 7 (52). pp.117-121. (In Russian).
17. Chukalova, A.O., Yamileva, A.M., Nasibullayev, I.Sh., Vairis, A., "The influence of the material parameters varying on dynamics of linear friction welding process", *Vestnik USATU*. Ufa, Russia, 2012. vol.16, No 7 (52). pp.128-132. (In Russian)
18. Favvas, E., Stefanopoulos, K., Vairis, A., Nolan, J., Joensen, K., Mitropoulos, A., "In situ SAXS investigation of dibromomethane adsorption in ordered mesoporous silica", *Adsorption*, 2013, vol.19, no.2-4, pp 331-338. DOI: 10.1007/s10450-012-9455-6 (IF: 1.731) (Q2)
19. Fang, F., Li, W.Y., Li, J.L., Vairis, A., "Process parameter analysis of inertia friction welding nickel-based superalloy", *International Journal of Advanced Manufacturing Technology*, 2014, vol.71, pp.1090-1919. DOI: 10.1007/s00170-013-5569-6 (IF: 2.496) (Q1)
20. Vairis, A., Petousis, M., Vidakis, N., Stefanoudakis, G., Kandyla, B., "Finite element modelling of a novel anterior cruciate ligament repairing device", *Journal of Engineering Science and Technology Review*, 2013, vol.6, no.1, pp.1-6. DOI: 10.25103/jestr.061.01 (Q3)
21. Li, W.Y., Wang, F.F., Shi, S.X., Ma, T.J, Li, J.L., Vairis, A., "3D Finite Element An alysis of the Effect of Process Parameters on Linear Friction Welding of Mild Steel", *Journal of Materials Engineering and Performance*, 2014, vol.23, no.11, pp.4010-4018. DOI:10.1007/s11665-014-1197-z (IF: 1.476) (Q2)
22. Vairis, A., Petousis, M., Vidakis, N., Kandyla, B., Tsainis, A.M., "Evaluation of a PCL deficient human knee joint finite element model", *QScience Connect*, 2014, issue 2014.
23. Buffa, G., Cammalleri, M., Campanella, D., Fratini, L., Vairis, A., "Effective Linear Friction Welding Machine Redesign through Process Analysis", *Key Engineering Materials*, 2014, vol. 622-623, pp.484-491. DOI: 10.4028/www.scientific.net/KEM.622-623.484 (Q3)
24. Li, W.Y., Vairis, A., Ward, R.M., "Advances in friction welding", *Advances in Materials Science and Engineering*, 2014, vol.2014, art.no.204515. DOI: 10.1155/2014/204515 (IF: 1.399) (Q2)
25. Li, W.Y., Guo, J., Yang, X., Ma, T., Vairis, A., "The effect of micro-swinging on joint formation in linear friction welding", *Journal of Engineering Science and Technology Review*, 2014, vol.7, no.5, pp.55-58. DOI: 10.25103/jestr.075.15 (Q3)
26. Atroshenko, A., Vairis, A., Bichkov, V., Nikiforov, P., "ANSYS simulation of residual strains in butt-welded joints", *Journal of Engineering Science and Technology Review*, 2014, vol.7, no.5, pp.9-11. DOI: 10.25103/jestr.075.03 (Q3)
27. Khalikova, G.R., Bikmeyer, A.T., Gazizov, R.K., Vairis, A., "A 2D Computer Model of Cutting of the A2024 Aluminum Alloy", *Journal of Engineering Science and Technology Review*, 2014, vol.7, no.5, pp.24-28. DOI: 10.25103/jestr.075.07 (Q3)
28. Li, Y., Guo, J., Ma, T., Vairis, A., "Numerical Modeling of Linear Friction Welding: A literature review", *China Welding*, 2014, vol.23, no.4.
29. Vairis, A., Stefanoudakis, G., Petousis, M., Vidakis, N., Tsainis, A.M., Kandyla, B., "Evaluation of an Intact, an ACL-Deficient and a Reconstructed Human Knee Joint Finite Element Model", *Computer Methods in Biomechanics and Biomedical Engineering*, 2016, vol.19, no.3, pp.263-270. DOI: 10.1080/10255842.2015.1015526 (IF: 1.610) (Q3)
30. Zhang, Z., Li; W., Li; J., Chao; Y.J., Vairis, A., "Microstructure and anisotropic mechanical behavior of friction stir welded AA2024 alloy sheets", *Materials Characterization*, 2015, vol.107, pp.112-118. DOI: 10.1016/j.matchar.2015.06.039 (IF: 2.892) (Q1)

31. Li, W., Vairis, A., Preuss, M., Ma, T., "Linear and Rotary Friction Welding review", *International Materials Reviews*, 2015, vol.61, no.2, pp.71-100. DOI: 10.1080/09506608.2015.1109214 (IF: 7.48) (Q1) **REVIEW PAPER**
32. Alexopoulos, A., Favvas, E.P., Vairis, A., Mitropoulos, A.Ch., "MWCNTs/resin nanocomposites: structural, thermal, mechanical and dielectric investigation", *Journal of Engineering Science and Technology Review*, 2015, vol.8, no.4, pp.7-14. DOI: 10.25103/jestr.084.02 (Q3)
33. Nikiforov, R., Medvedev, A., Tarasenko, E., Vairis, A., "Numerical simulation of residual stresses in linear friction welded joints", *Journal of Engineering Science and Technology Review*, 2015, vol.8, no.6, pp.49-53. DOI: 10.25103/jestr.086.13 (Q3)
34. Yamileva, A., Gazizov, R.K., Vairis, A., "Computer modelling of the effect of clamping in linear friction welding", *Journal of Engineering Science and Technology Review*, 2015, vol.8, no.6, pp.65-68. DOI: 10.25103/jestr.086.17 (Q3)
35. Bikmeyer, A.T., Gazizov, R.K., Yamileva, A., Vairis, A., Zheleznov, F.O., "On the visualization of joint formation during linear friction welding", *Journal of Engineering Science and Technology Review*, 2015, vol.8, no.6, pp.69-72. DOI: 10.25103/jestr.086.18 (Q3)
36. Vairis, A., Petousis, M., Vidakis, N., Savvakis, K., "On the Strain Rate Sensitivity of Abs and Abs Plus Fused Deposition Modelling Parts", *Journal of Materials Engineering and Performance*, 2016, DOI:10.1007/s11665-016-2198-x. (IF: 1.476) (Q2)
37. Vidakis, N., Vairis, A., Diouf, D., Petousis, M., Savvakis, K., Tsainis, A.M., "Effect of the tool rotational speed on the mechanical properties of thin AA1050 friction stir welded sheets", *Journal of Engineering Science and Technology Review*, 2016, vol.9, no.3, pp.123-129. DOI: 10.25103/jestr.093.18 (Q3)
38. Vidakis, N., Vairis, A., Petousis, M., Savvakis, K., Kechagias, J., "Fused Deposition Modelling Parts Tensile Strength Characterisation", *Academic Journal of Manufacturing Engineering*, 2016, vol.14, no.2, pp.87-94. (Q2)
39. Vairis, A., Papazafeiropoulos, G., Tsainis, A.M., "A Comparison Between Friction Stir Welding, Linear Friction Welding and Rotary Friction Welding", *Advances in Manufacturing*, 2016, vol.4, no.4 pp.296-304. DOI: 10.1007/s40436-016-0163-4 (IF: 1.603) (Q1)
40. Fu, Y., Li, W., Yang, X., Ma, T., Vairis, A., "The effects of forging pressure and temperature field on residual stresses in linear friction welded Ti6Al4V joints", *Advances in Manufacturing*, 2016, vol.4, no.4 pp.314-321. DOI:10.1007/s40436-016-0161-6 (IF: 1.603) (Q1)
41. Wang, X.Y., Li, W., Ma, T., Vairis, A., "Characterisation studies of linear friction welded titanium joints", *Materials and Design*, 2017, vol.116, pp.115-126. DOI: 10.1016/j.matdes.2016.12.005 (IF: 4.364) (Q1)
42. Ma, T.J., Li, Y.G., Li, W.Y., Zhang, Y., Shi, D.G., Vairis, A., "Studies of the interfacial structure of a linear friction welded Fe/Ni joint: First principles calculation and TEM validation", *Materials Characterization*, 2017, vol.129, pp.60-66. DOI: 10.1016/j.matchar.2017.04.008 (IF: 2.892) (Q1)
43. Vidakis, N., Petousis, M., Vairis, A., Savvakis, K., Maniadi, A., "On the compressive behavior of an FDM Steward Platform part", *Journal of Computational Design and Engineering*, 2017, vol.4, no.4, pp. 339-346. DOI: 10.1016/j.jcde.2017.06.001 (IF: 1.775) (Q1)
44. Niu, P., Li, W.Y., Yang, X., Vairis, A., "Effects of microstructural asymmetries across friction-stir-welded AA2024 joints on mechanical properties", *Science and Technology of Welding and Joining*, 2017, DOI:10.1080/13621718.2017.1328765. (IF: 2.050) (Q1)
45. Li, W.Y., Li, N., Yang, X.W., Feng, Y., Vairis, A., "Impact of cold spraying on microstructure and mechanical properties of optimized friction stir welded AA2024-T3 joint", *Materials Science and Engineering A*, 2017, vol.702, pp. 73-80. DOI: 10.1016/j.msea.2017.07.003. (IF: 3.414) (Q1)

46. Li, W.Y., Chu, Q., Yang, X.W., Shen, J.J., Vairis, A., Wang, W.B., "Microstructure and morphology evolution of probeless friction stir spot welded joints of aluminum alloy", *Journal of Materials Processing Technology*, 2018, vol.252, pp. 69-80, DOI: 10.1016/j.jmst.2018.03.009. (IF:3.647) (Q1)
47. McAndrew, A., Colegrove, P.A., Buhr, C., Flipo, B., Vairis, A., "A Literature Review of Ti-6Al-4V Linear Friction Welding", *Progress in Materials Science*, 2018, vol.92, pp.225-257, DOI: 10.1016/j.pmatsci.2017.10.003. (IF: 31.140) (Q1) **REVIEW PAPER.**
48. Li, N., Li, W.Y., Yang, X.W., Feng, Y., Vairis, A., "An investigation into the mechanism for enhanced mechanical properties in friction stir welded AA2024-T3 joints coated with cold spraying", *Applied Surface Science*, 2018, vol.439, pp.623-631, DOI: 10.1016/j.apsusc.2018.01.049. (IF: 3.387) (Q1)
49. Chu, Q., Li, W.Y., Yang, X.W., Shen, J.J., Vairis, A., Feng, W.Y., Wang, W.B., "Microstructure and mechanical optimization of probeless friction stir spot welded joint of an Al-Li alloy", *Journal of Materials Science and Technology*, 2018, vol.34, no.10, pp.1739-1746. DOI: 10.1016/j.jmst.2018.03.009 (IF:2.764) (Q1)
50. Ma, TJ, Tang, LF, Li, WY, Zhang, Y, Xiao, Y, Vairis, A, "Linear friction welding of a solid-solution strengthened Ni-based superalloy: Microstructure evolution and mechanical properties studies", *Journal of Manufacturing Processes*, vol.34, pp.442-450. DOI: 10.1016/j.jmapro.2018.06.011 (IF: 3.462) (Q1)
51. Yang, K., Li, W., Yang, X., Xu, Y., Vairis, A., "Effect of heat treatment on the inherent anisotropy of cold sprayed copper deposits", *Surface & Coatings Technology*, vol.350, pp.519-530. DOI: 10.1016/j.surfcoat.2018.07.046 (IF:2.906) (Q1)
52. Chu, Q., Yang, X.W., Li, W.Y., Zhang, Y., Lu, T., Vairis, A., Wang, W.B., "On visualizing material flow and precipitate evolution during probeless friction stir spot welding of an Al-Li alloy", *Materials Characterization*, 2018, vol.144, pp. 336-344. DOI: 10.1016/j.matchar.2018.07.026 (IF:2.892) (Q1)
53. Su, Y., Li, W.Y., Wang, X., Ma, T., Yang, X., Vairis, A., "On microstructure and property differences in a linear friction welded near-alpha titanium alloy joint", *Journal of Manufacturing Processes*, 2018, vol.36, pp.255-263. DOI: 10.1016/j.jmapro.2018.10.017 (IF: 3.462) (Q1)
54. Chu, Q., Yang, X.Y., Li, W.Y., Wang, Vairis, A., Wang, WB., "Numerical analysis of material flow in the probeless friction stir spot welding based on Coupled Eulerian-Lagrangian approach", *Journal of Manufacturing Processes*, 2018, vol.36, pp.181-187. DOI: 10.1016/j.jmapro.2018.10.013 (IF: 3.462) (Q1)
55. Wang, X., Li, W.Y., Ma, T., Yang, X., Vairis, A., "Microstructural evolution and mechanical properties of a linear friction welded two-phase Ti-6.5 Al-3.5 Mo-1.5 Zr-0.3 Si titanium alloy joint", *Materials Science and Engineering A*, 2018, vol.743, pp.12-23, DOI: 10.1016/j.msea.2018.11.059. (IF:3.414) (Q1)
56. Chu, Q., Li, WY., Hou, HL., Yang, XY., Vairis, A., Wang, C., Wang, W.B. "On the double-side probeless friction stir spot welding of AA2198 Al-Li alloy", *Journal of Materials Science and Technology*, 2018, vol.35, no.5, pp.784-789. DOI: 10.1016/j.jmst.2018.10.027 (IF: 2.764) (Q1)
57. Chu, Q., Yang, X.W., Li, W.Y., Lu, T., Zhang, Y., Vairis, A., "Impact of surface state in probeless friction stir spot welding of an Al-Li alloy", *Science and Technology of Welding and Joining*, vol.24, no.3, pp.200-208, 2019, DOI:10.1080/13621718.2018.1517966. (IF: 2.050) (Q1)
58. Li, N., Li, W.Y., Yang, XW., Xu, Y., Vairis, A., "Corrosion characteristics and wear performance of cold sprayed coatings of reinforced Al deposited onto friction stir welded AA2024-T3 joints", *Surface & Coatings Technology*, vol.349, pp.1069-1076. DOI: 10.1016/j.surfcoat.2018.06.058. (IF: 2.906) (Q1)

59. Niu, P.L., Li, W.Y., Vairis, A., Chen, D.L., "Cyclic deformation behavior of friction-stir-welded dissimilar AA5083-to-AA2024 joints: Effect of microstructure and loading history", *Materials Science & Engineering A*, vol.744, pp.145-153. DOI: 10.1016/j.msea.2018.12.014 (IF: 3.414) (Q1)
60. Su, Y., Li, W.Y., Wang, X., Ma, T.J., Yang, X., Vairis, A., "Linear friction welding of titanium alloys: state-of-the-art and perspectives", *Materials China*, vol.36, no.11, pp.852-859. DOI: 10.7502/j.issn.1674-3962.2017.11.06 **REVIEW PAPER**
61. Patel, V., Li, W.Y., Wang, G., Wang, F., Vairis, A., Niu, P., "Friction Stir Welding of Dissimilar Aluminum Alloy Combinations: State-of-the-Art", *Metals*, vol.9, no.3, art.270, 2019, DOI: 10.3390/met9030270. (IF: 2.259) (Q2) **REVIEW PAPER**
62. Su, Y., Li, W.Y., Wang, X., Ma, T.J., Li, Y., Liu, Y., Vairis, A., "On the Process Variables and Weld Quality of a Linear Friction Welded Dissimilar Joint between S31042 and S34700 Austenitic Steels", *Advanced Engineering Materials*, 2019, vol.21, no.7, art.no.1801354, DOI: 10.1002/adem.201801354. (IF: 2.906) (Q1)
63. Patel, V., Li, W.Y., Vairis, A., Badheka, V., "Recent Development in Friction Stir Processing as a Solid-State Grain Refinement Technique: Microstructural Evolution and Property Enhancement", *Critical Reviews in Solid State and Materials Sciences*, 2019, vol.44, no.5, pp. 378-426, DOI: 10.1080/10408436.2018.1490251. (IF: 3.462) (Q1)
64. Wang, X., Li, W.Y., Ma, T., Yang, X., Vairis, A., "Effect of welding parameters on the microstructure and mechanical properties of linear friction welded Ti-6.5Al-3.5Mo-1.5Zr-0.3Si joints", *Journal of Manufacturing Processes*, 2019, vol.46, pp.100-108, DOI:10.1016/j.jmapro.2019.08.031. (IF: 3.462) (Q1)
65. Su, Y., Li, W.Y., Patel, V., Vairis, A., Wang, X., "Formability of an AA5083 aluminum alloy T-joint using SSFSW on both corners", *Materials and Manufacturing Processes*, 2019, vol.34, no.15, pp.1737-1744. DOI: 10.1080/10426914.2019.1669799 (IF: 3.350) (Q1)
66. Vidakis, N., Petousis, M., Vairis, A., Savvakis, K., Maniadi, A., "A parametric determination of bending and Charpy's impact strength of ABS and ABS-plus fused deposition modeling specimens", *Progress in Additive Manufacturing*, 2019, vol.4, no.3, pp.323-330. DOI:10.1007/s40964-019-00092-8 (IF: 2.591) (Q1)
67. Wen, Q., Li, W.Y., Patel, V., Gao, Y., Vairis, A., "Investigation on the Effects of Welding Speed on Bobbin Tool Friction Stir Welding of 2219 Aluminum Alloy", *Metals and Materials International*, 2020, vol.26, no.12, pp.1830-1840. DOI:10.1007/s12540-019-00450-9. (IF: 1.647) (Q1)
68. Brown, S., Vairis, A., Petousis, M., Masoumifar, A., "Common problems with the conventional design of crutches: proposing a safer design and discussing the potential impact", *Technology in Society*, 2020, vol.60, art.101215. DOI: 10.1016/j.techsoc.2019.101215 (IF:1.67) (Q2)
69. Wang, X., Li, W.Y., Qing, Y., Yang, X., Ma, T., Vairis, A., "Linear Friction Welding of a Beta Titanium Alloy: Experimental Investigations on Microstructure Evolution and Mechanical Properties", *Science and Technology of Welding and Joining*, 2020, vol.25, no.8, pp. 625-636. DOI:10.1080/13621718.2020.1823636 (IF: 2.050) (Q1)
70. Su, Y., Li, W.Y., Liu, X., Gao, F., Vairis, A., "Strengthening mechanism of friction stir welded alpha titanium alloy specially designed T-joints", *Journal of Manufacturing Processes*, 2020, vol.55, pp.1-12. DOI: 10.1016/j.jmapro.2020.03.032 (IF:4.086) (Q1)
71. Vidakis, N., Petousis, M., Maniadi, A., Koudoumas, E., Vairis, A., Kechagias, J., "Sustainable Additive Manufacturing: Mechanical Response of Acrylonitrile-Butadiene-Styrene over Multiple Recycling Processes", *Sustainability*, 2020, vol.12, no.9, pp.3568. DOI: 10.3390/su12093568 (IF: 2.592) (Q2)

72. Sapalidis, A., Karantzis, P., Vairis, A., Nitodas, S., Barbe, S., Favvas, E., "A Study of the Reinforcement Effect of MWCNTs onto Polyimide Flat Sheet Membranes", *Polymers*, 2020, vol.12, no.6, pp.1381. DOI: 10.3390/polym12061381. (IF:3.426) (Q1)
73. Wang, X., Li, W.Y., Ma, T., Yang, X., Vairis, A., Tao, J., "Microstructural heredity and its effect on mechanical properties of linear friction welded Ti-6.5 Al-3.5 Mo-1.5 Zr-0.3 Si alloy joints", *Materials Characterization*, 2020, vol.168, 110540. DOI: 10.1016/j.matchar.2020.110540. (IF:3.526) (Q1)
74. Wu, D., Li, W.Y., Gao, Y.J., Yang, J., Su, Y., Wen, Q., Vairis, A., "Effect of an improved pin design on weld formability and mechanical properties of adjustable-gap bobbin-tool friction stir welded Al-Cu aluminum alloy joints", *Journal of Manufacturing Processes*, 2020, vol.58, pp.1182-1188. DOI: 10.1016/j.jmapro.2020.09.015 (IF:4.086) (Q1)
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67. Bikmeyer, A., Vairis, A., Li, W.Y., “Study of the interfacial temperature development for various friction welding processes”, IIW 2022 International Conference on Welding and Joining, 17-22 July 2022, Tokyo, Japan.

Books

1. Li, W., Yang, X., Vairis, A., “Solid State Welding”, Science Press, 2017, China (in English)

Book chapter

1. Wang, X., Li, W.Y., Ma, T., Vairis, A., (2019) ‘Linear friction welding’, in Vora, J., Badheka, V., (eds.)” Advances in welding technologies for process development”. New York, CRC Press,

Impact

- Prof. Vairis's works have 2696 citations.
- Google scholar: <https://scholar.google.gr/citations?user=w5Yq4eAAAAAJ&hl=en>
- h-index = 23
- i-10 index = 53
- ORCID: 0000-0001-6359-799X
- Named in the **top 2% of scientists** worldwide as measured by the impact of their research publications, both for **2020** and for the **whole career** (<https://doi.org/10.1371/journal.pbio.3000384>). The scientists were identified in a worldwide database of top scientists, published by Stanford University, classified into 22 scientific fields and 176 subfields.

Patents

- Mitropoulos, A., Vairis, A., Stefanopoulos, K., "Mercury porosimeter accessory ", Greek Patent 1003538, 1 March 2001
- Vairis, A., Kalivianakis, A., Timmons, W., Pateromichelakis, N., "Device for assessing dance exercise", Greek Patent 20090100586, 26 October 2009
- Vairis, A., "Friction welding process control", 201600931, 11 April 2016
- Vidakis, N., Vairis, A., Lontos, A., Gramatikakis, I., Petousis, M., Maniadi, A., Arapis, E., "Smart percussion tool", Greek Patent 1009101, 11 April 2016

Research Experience

2020 – 2022	<u>Co Principal Investigator</u> “Redesigning Mobility Aid to Function in Challenging Environments and Limited-Resource Settings” Awarding body: Grand Challenges Canada, Canada
2015	<u>Researcher</u> “Elaboration and industrial development of high-precision shaping coordinated technologies and superficial hardening of responsible details from Al-alloys with heightened constructional energy efficiency” Awarding body: Ufa State Aviation Technical University, Russian Federation
2012 – 2015	<u>Leading scientist</u> “NANO-strength Development of carbon fibre nano-composites for high strength applications” Archimedes III research project, Awarding body: General Secretariat of Research and Technology, Greece
2012 – 2015	<u>Researcher</u> “NANO-SKAI carbon fibre nano-composites for gas separation and hydrogen production uses” Archimedes III research project, Awarding body: General Secretariat of Research and Technology, Greece
2012 – 2015	<u>Researcher</u> “NANO-capillary” Thales research project Awarding body: General Secretariat of Research and Technology, Greece
2011 – 2012	<u>Researcher</u> “Creation of technologies and industrial production of knots and vanes gas turbine engine with alleviated high-impact construction for new generation engines” Awarding body: Ufa State Aviation Technical University, Russian Federation
2008 - 2010	<u>Researcher</u> “REG CON - Support action for innovation driven clusters in construction. Regional approaches, multi-stakeholder engagement and cross regional co-operation” Awarding body: European Union FP7-REGIONS-2007
2004 – 2006	Leading scientist “ZnO coatings to use in sensors for oxidizing gases” Archimedes II research project Awarding body: General Secretariat of Research and Technology, Greece
1999	<u>Researcher</u> “Thermal sprayed coatings to reduce wear in engineering components in Greek industry. Alternative techniques”

EKVAN industrial research project
Awarding body: General Secretariat of Research and Technology, Greece

1998 – 1999 Research fellow
“ROBOWELDER - EE 552”
PAVE project of industrial research
Awarding body: General Secretariat of Research and Technology, Greece

1993 - 1995 Research fellow
“High frequency linear friction welding investigation”
Awarding body: Human Capital Mobility Programme, University of Bristol,
England

Research Interests

I am currently pursuing research in the following areas:

- Linear friction welding
- Frictional behaviour
- Numerical modelling of complex systems
- Analytical modelling
- Joining processes
- Manufacturing processes
- Machine design
- Biomechanical engineering
- Assistive Technologies

I have pursued research in the following areas:

- Coatings / Thin Films
- Environmental studies
- Business development

Professional Activities

Journals

- **Editor-in-Chief** of ***Welding International*** published by Taylor & Francis. (ISSN: 0950-7116)
- Member of the editorial board of the *Journal of Engineering Science and Technology Review*. (ISSN:1791-2377)
- Member of the editorial board of *Applied Engineering Letters*. (ISSN: 2466-4677)
- Guest editor of the *Journal of Engineering Science and Technology Review* for the special issue for the conference proceedings of the “Simulation of manufacturing technologies - 2014” which took place in Ufa 23-25 June 2014.
- Guest editor for the *Advances in Materials Science and Engineering* journal for the special issue “Advances in Friction Welding” (October 2013-March 2014).
- Guest editor of the *Journal of Engineering Science and Technology Review* for the special issue for the conference proceedings of the “Simulation of manufacturing technologies - 2012” which took place in Ufa 10-13 April 2012.
- Reviewer of International Journals
 - *Acta Materialia* (IF: 5.058)
 - *Advanced Engineering Materials* (IF:2.319)
 - *Advances in Manufacturing*
 - *Advances in Materials Science and Engineering* (IF: 0.897)
 - *CIRP Journal of Manufacturing Science and Technology* (IF: 1.732)
 - *Computational Materials Science* (IF: 1.574)
 - *Construction and Building Materials* (IF:3.169)
 - *DYNA*
 - *International Journal of Advanced Manufacturing Technology* (IF: 1.779)
 - *International Journal of Computer Assisted Radiology and Surgery* (IF:2.155)
 - *International Journal of Material Forming* (1.750)
 - *International Journal of Modelling, Identification and Control*
 - *International Journal of Thermal Sciences* (IF:2.769)
 - *Journal of Adhesion Science and Technology* (IF:1.153)
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 - *Qscience Connect*
 - *Steel Research International* (IF: 1.021)

- *Surface and Coatings Technology* (IF: 2.139)
- *The Journal of Manufacturing Processes* (IF:1.771)
- *The Knee* (IF: 1.446)
- *Welding in the World* (IF: 1.278)

Organization of International Conferences

- Member of the Scientific Committee of the “10th International Scientific Conference IRMES 2022 - “Machine design in the context of Industry 4.0 – Intelligent products””, Belgrade, Serbia, 26 May 2022.
- Member of the International Scientific Committee of “17th International Conference on Sheet Metal – SheMet 2017”, Palermo, Italy, 10-12 April 2017.
- Member of the Organising Committee of “Simulation of manufacturing technologies - 2015”, Ufa, Russian Federation, 22-23 September 2015.
- Member of the Organising Committee of “Simulation of manufacturing technologies - 2014”, Ufa, Russian Federation, 23-25 June 2014.
- Member of the Organising Committee of “Simulation of manufacturing technologies - 2012”, Ufa, Russian Federation, 10-13 April 2012.
- Member of the scientific committee of “2nd International Conference on Experiments / Process / System / Modelling / Simulation & Optimization”, Athens, 4-7 July 2007.
- Chairman of the Session "Static and dynamic Behaviour of Structures" of the “2nd International Conference “From Scientific Computing to Computational Engineering”, Athens, 5-8 July 2006.
- Member of the Organising Committee for the 2006 IASME/WSEAS Conference Water Resources, Hydraulics and Hydrology, Chalkis, 8-10 May 2006.

Professional Qualifications

- Member of the Technical Chamber of Greece (Greek equivalent to CEng status)
- Member of the Greek Society of Mechanical and Electrical Engineers