

John A Francis

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

76 papers	1,724 citations	23 h-index	40 g-index
93 ext. papers	1,961 ext. citations	3 avg, IF	4.8 L-index

#	Paper	IF	Citations
76	Review Type IV cracking in ferritic power plant steels. <i>Materials Science and Technology</i> , 2006 , 22, 1387-1395	13.95	244
75	Welding residual stresses in ferritic power plant steels. <i>Materials Science and Technology</i> , 2007 , 23, 1009-1020	10.20	149
74	Characterizing Phase Transformations and Their Effects on Ferritic Weld Residual Stresses with X-Rays and Neutrons. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2008 , 39, 3070-3078	2.3	98
73	Residual stress distributions in a P91 steel-pipe girth weld before and after post weld heat treatment. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2012 , 534, 663-672	5.3	94
72	Microstructure and mechanical properties of laser welded S960 high strength steel. <i>Materials and Design</i> , 2015 , 85, 534-548	8.1	75
71	A comparison of residual stresses in multi pass narrow gap laser welds and gas-tungsten arc welds in AISI 316L stainless steel. <i>International Journal of Pressure Vessels and Piping</i> , 2014 , 113, 49-59	2.4	58
70	Understanding the process parameter interactions in multiple-pass ultra-narrow-gap laser welding of thick-section stainless steels. <i>International Journal of Advanced Manufacturing Technology</i> , 2013 , 68, 1-17	3.2	56
69	On the evolution of local material properties and residual stress in a three-pass SA508 steel weld. <i>Acta Materialia</i> , 2012 , 60, 3268-3278	8.4	55
68	The Effects of Filler Metal Transformation Temperature on Residual Stresses in a High Strength Steel Weld. <i>Journal of Pressure Vessel Technology, Transactions of the ASME</i> , 2009 , 131,	1.2	48
67	Design of weld fillers for mitigation of residual stresses in ferritic and austenitic steel welds. <i>Science and Technology of Welding and Joining</i> , 2011 , 16, 279-284	3.7	40
66	Residual stresses in P91 steel electron beam welds. <i>Science and Technology of Welding and Joining</i> , 2013 , 18, 70-75	3.7	37
65	Extension of the double-ellipsoidal heat source model to narrow-groove and keyhole weld configurations. <i>Journal of Materials Processing Technology</i> , 2017 , 246, 123-135	5.3	36
64	Measured residual stress distributions for low and high heat input single weld beads deposited on to SA508 steel. <i>Materials Science and Technology</i> , 2009 , 25, 325-334	1.5	35
63	Comparison of laser welds in thick section S700 high-strength steel manufactured in flat (1G) and horizontal (2G) positions. <i>CIRP Annals - Manufacturing Technology</i> , 2015 , 64, 197-200	4.9	34
62	Arc power and efficiency in gas tungsten arc welding of aluminium. <i>Science and Technology of Welding and Joining</i> , 2005 , 10, 200-210	3.7	33
61	Residual stress measurement round robin on an electron beam welded joint between austenitic stainless steel 316L(N) and ferritic steel P91. <i>International Journal of Pressure Vessels and Piping</i> , 2017 , 154, 41-57	2.4	32
60	The role of defects in the fracture of an AlSiMg cast alloy. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2005 , 407, 322-329	5.3	32

59	Residual stresses in laser welded ASTM A387 Grade 91 steel plates. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2013 , 575, 160-168	5.3	30
58	Microstructure and mechanical characteristics of a laser welded joint in SA508 nuclear pressure vessel steel. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015 , 625, 65-80	5.3	28
57	Prediction of residual stress distributions for single weld beads deposited on to SA508 steel including phase transformation effects. <i>Materials Science and Technology</i> , 2010 , 26, 940-949	1.5	28
56	Effects of dilution on alloy content and microstructure in multi-pass steel welds. <i>Journal of Materials Processing Technology</i> , 2019 , 265, 71-86	5.3	26
55	Estimation of Type IV Cracking Tendency in Power Plant Steels. <i>ISIJ International</i> , 2004 , 44, 1966-1968	1.7	24
54	The impact of transformation plasticity on the electron beam welding of thick-section ferritic steel components. <i>Nuclear Engineering and Design</i> , 2017 , 323, 309-316	1.8	23
53	Evaluation of Errors Associated with Cutting-Induced Plasticity in Residual Stress Measurements Using the Contour Method. <i>Experimental Mechanics</i> , 2017 , 57, 719-734	2.6	22
52	Measurement and modelling of the residual stresses in autogenous and narrow gap laser welded AISI grade 316L stainless steel plates. <i>International Journal of Pressure Vessels and Piping</i> , 2016 , 147, 64-78	2.4	21
51	Effects of weld preheat temperature and heat input on type IV failure. <i>Science and Technology of Welding and Joining</i> , 2009 , 14, 436-442	3.7	19
50	An evaluation of multipass narrow gap laser welding as a candidate process for the manufacture of nuclear pressure vessels. <i>International Journal of Pressure Vessels and Piping</i> , 2017 , 157, 43-50	2.4	18
49	Residual stress distributions in arc, laser and electron-beam welds in 30 mm thick SA508 steel: A cross-process comparison. <i>International Journal of Pressure Vessels and Piping</i> , 2018 , 162, 59-70	2.4	17
48	Process-parameter interactions in ultra-narrow gap laser welding of high strength steels. <i>International Journal of Advanced Manufacturing Technology</i> , 2016 , 84, 2547-2566	3.2	17
47	Semi-analytical solutions for the transient temperature fields induced by a moving heat source in an orthogonal domain. <i>International Journal of Thermal Sciences</i> , 2018 , 123, 140-150	4.1	16
46	Characterisation and modelling of tempering during multi-pass welding. <i>Journal of Materials Processing Technology</i> , 2019 , 270, 118-131	5.3	16
45	Thermal cycle-dependent metallurgical variations and their effects on the through-thickness mechanical properties in thick section narrow-gap welds. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017 , 707, 399-411	5.3	15
44	Laser welding of high strength steels (S960 and S700) with medium thickness. <i>Journal of Laser Applications</i> , 2016 , 28, 022425	2.1	15
43	Evolution of microstructure and toughness in 2.25Cr-1Mo steel welds. <i>International Journal of Pressure Vessels and Piping</i> , 2018 , 165, 20-28	2.4	14
42	Measurement of residual stresses induced by sequential weld buttering and cladding operations involving a 2.25Cr-1Mo substrate material. <i>International Journal of Pressure Vessels and Piping</i> , 2017 , 154, 58-74	2.4	13

41	Residual stresses in arc and electron-beam welds in 130 mm thick SA508 steel: Part 2 Measurements. <i>International Journal of Pressure Vessels and Piping</i> , 2019 , 172, 379-390	2.4	13
40	A Novel Cutting Strategy for Reducing Plasticity Induced Errors in Residual Stress Measurements Made With the Contour Method 2011 ,		13
39	Transformation Temperatures and Welding Residual Stresses in Ferritic Steels 2007 , 949		13
38	Narrow gap laser welding for potential nuclear pressure vessel manufacture. <i>Journal of Laser Applications</i> , 2016 , 28, 022421	2.1	12
37	Through-Thickness Residual Stress Profiles in Austenitic Stainless Steel Welds: A Combined Experimental and Prediction Study. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2017 , 48, 6178-6191	2.3	10
36	Residual stresses in arc and electron-beam welds in 130 mm thick SA508 steel: Part 1 - Manufacture. <i>International Journal of Pressure Vessels and Piping</i> , 2019 , 172, 313-328	2.4	10
35	Residual stress distributions in laser and gas-metal-arc welded high-strength steel plates. <i>Materials Science and Technology</i> , 2016 , 32, 1449-1461	1.5	10
34	Effects of stop/start features on residual stresses in a multipass austenitic stainless steel weld. <i>International Journal of Pressure Vessels and Piping</i> , 2012 , 89, 9-18	2.4	10
33	A semi-analytical solution for the transient temperature field generated by a volumetric heat source developed for the simulation of friction stir welding. <i>International Journal of Thermal Sciences</i> , 2019 , 138, 586-595	4.1	9
32	Vacuum laser welding of SA508 steel. <i>Journal of Materials Processing Technology</i> , 2019 , 274, 116269	5.3	7
31	Phase-Field Simulation of Grain Boundary Evolution In Microstructures Containing Second-Phase Particles with Heterogeneous Thermal Properties. <i>Scientific Reports</i> , 2019 , 9, 18426	4.9	7
30	Measurement and Prediction of Phase Transformation Kinetics in a Nuclear Steel During Rapid Thermal Cycles. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2019 , 50, 1715-1731	2.3	6
29	An assessment of residual stress mitigation strategies for laser clad deposits. <i>Materials Science and Technology</i> , 2016 , 32, 1484-1494	1.5	6
28	Quantifying the metallurgical response of a nuclear steel to welding thermal cycles. <i>Materials Science and Technology</i> , 2016 , 32, 1517-1532	1.5	6
27	Prediction of steady state dilution in multipass hardfacing overlays deposited by self shielded flux cored arc welding. <i>Science and Technology of Welding and Joining</i> , 2002 , 7, 95-101	3.7	6
26	Predicting steady state dilution in multipass hardfacing overlays - geometric approach. <i>Science and Technology of Welding and Joining</i> , 2002 , 7, 331-338	3.7	6
25	Determination of residual stress at weld interruptions by neutron diffraction		6
24	Characterisation of quasi-stationary temperature fields in laser welding by infrared thermography. <i>Materialwissenschaft Und Werkstofftechnik</i> , 2017 , 48, 1283-1289	0.9	5

23	Prediction of Dilution and Its Impact on the Metallurgical and Mechanical Behavior of a Multipass Steel Weldment. <i>Journal of Pressure Vessel Technology, Transactions of the ASME</i> , 2019 , 141,	1.2	5
22	Effects of dilution on the hardness and residual stresses in multipass steel weldments. <i>International Journal of Pressure Vessels and Piping</i> , 2020 , 187, 104154	2.4	5
21	Confirmation of tensile residual stress reduction in electron beam welding using low transformation temperature materials (LTT) as localized metallurgical injections [Part 2: Residual stress measurement. <i>Materialprüfung/Materials Testing</i> , 2017 , 59, 618-624	1.9	4
20	A Review of Welding Research Within the New Nuclear Manufacturing (NNUMAN) Programme 2017 ,		3
19	Residual stress measurement in AlSi alloys. <i>Materialwissenschaft Und Werkstofftechnik</i> , 2017 , 48, 1270-1275		3
18	Overview of Welding Research Under the New Nuclear Manufacturing (NNUMAN) Programme 2014 ,		3
17	Residual Stress, Texture, and Phase Investigation of Autogenous Edge Welds Using High Energy Synchrotron Radiation. <i>Materials Science Forum</i> , 2011 , 681, 43-48	0.4	3
16	UK Research Programme on Residual Stresses: Progress to Date 2007 , 919		3
15	On the Stress Development in SA508 Autogenous Weld. <i>Materials Science Forum</i> , 2014 , 783-786, 2123-2128		2
14	Design Optimisation of a Ferritic Ring Weld Specimen Using FE Modelling 2009 ,		2
13	Modelling of Dilution Effects on Microstructure and Residual Stress in a Multi-Pass Weldment 2018 ,		2
12	Calibrating Phase Transformation and Grain Growth Models and Measuring Phase Dependent Material Properties for Use in FE Simulations of Welds 2015 ,		1
11	Development of Material Model Parameters Suitable for the Finite Element Simulation of Ferritic Welds 2012 ,		1
10	Residual Stress Measurements in Autogenous SA508 Steel Welds 2008 ,		1
9	The Prediction of Residual Stresses in an Autogenously Welded Ferritic Beams 2008 ,		1
8	In Situ Measurements for Structural Integrity: An Engineer's Perspective 2010 , 159-174		1
7	Internal stresses in a clad pressure vessel steel during post weld heat treatment and their relevance to underclad cracking. <i>International Journal of Pressure Vessels and Piping</i> , 2021 , 193, 104448	2.4	1
6	Development of microstructure and residual stress in electron beam welds in low alloy pressure vessel steels. <i>Materials and Design</i> , 2021 , 209, 109924	8.1	1

- 5 A perspective on welding technology challenges in the nuclear sector. *Science and Technology of Welding and Joining*, **2022**, 27, 309-317 3.7 ○
- 4 A fundamental analysis of factors affecting chemical homogeneity in the laser powder bed fusion process. *International Journal of Heat and Mass Transfer*, **2022**, 194, 122985 4.9 ○
- 3 Electron beam weld modelling of ferritic steel: effect of prior-austenite grain size on transformation kinetics. *Procedia Manufacturing*, **2020**, 51, 842-847 1.5
- 2 An Assessment of the Mechanisms of Transformation Plasticity in SA508 Grade 3 Steel during Simulated Welding Thermal Cycles. *Materials Science Forum*, **2014**, 777, 188-193 0.4
- 1 Modelling the effects of phase transformations on welding stress and distortion **2011**, 78-100