Rachel C Thomson

List of Publications by Year
in descending order

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		236925	265206
82	1,988	25	42
papers	citations	h-index	g-index

83	83	83	1652
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Modeling solid solution strengthening in nickel alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1997, 28, 1329-1335.	2.2	261
2	Carbide precipitation in martensite during the early stages of tempering Cr- andMo-containing low alloy steels. Acta Materialia, 1998, 46, 2203-2213.	7.9	121
3	Assessment of surface hardening effects from shot peening on a Ni-based alloy using electron backscatter diffraction techniques. Acta Materialia, 2011, 59, 4825-4834.	7.9	104
4	Mechanical properties of intermetallic phases in multi-component Alâ€“Si alloys using nanoindentation. Intermetallics, 2009, 17, 634-641.	3.9	97
5	Investigation of mechanical properties of intermetallic phases in multi-component Alâ€“Si alloys using hot-stage nanoindentation. Intermetallics, 2010, 18, 499-508.	3.9	85
6	Carbide precipitation in 12Cr1MoV power plant steel. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1992, 23, 1171-1179.	1.4	64
7	The combined use of EBSD and EDX analyses for the identification of complex intermetallic phases in multicomponent Alâ€“Si piston alloys. Journal of Alloys and Compounds, 2010, 490, 293-300.	5.5	63
8	Low temperature copper solubilities in Feâ€“Cuâ€“Ni. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1998, 250, 49-54.	5.6	62
9	Modelling the coefficient of thermal expansion in Ni-based superalloys and bond coatings. Journal of Materials Science, 2016, 51, 4213-4226.	3.7	60
10	Characterization of Carbides in Steels Using Atom Probe Field-Ion Microscopy. Materials Characterization, 2000, 44, 219-233.	4.4	46
11	Study on thermal expansion of intermetallics in multicomponent Alâ€“Si alloys by high temperature X-ray diffraction. Intermetallics, 2010, 18, 1750-1757.	3.9	46
12	Effects of three-dimensional coating interfaces on thermo-mechanical stresses within plasma spray thermal barrier coatings. Materials and Design, 2017, 125, 189-204.	7.0	45
13	Changes in chemical composition of carbides in 2Â·25Crâ€“1Mo power plant steel. Materials Science and Technology, 1994, 10, 193-204.	1.6	44
14	Combined EBSD/EDS tomography in a dualâ€beam FIB/FEGâ€“SEM. Journal of Microscopy, 2009, 233, 442-450.	1.8	41
15	Microstructural characterization of autogenous laser welds on 316L stainless steel using EBSD and EDS. Journal of Microscopy, 2005, 217, 167-173.	1.8	40
16	A multicomponent diffusion model for prediction of microstructural evolution in coated Ni based superalloy systems. Materials Science and Technology, 2009, 25, 287-299.	1.6	40
17	A phase-field model for the solidification of multicomponent and multiphase alloys. Journal of Crystal Growth, 2005, 279, 163-169.	1.5	39
18	Reliability issues in Pb-free solder joint miniaturization. Journal of Electronic Materials, 2006, 35, 1761-1772.	2.2	38

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19	Effect of crack depth on fatigue crack growth rates for a Câ€“Mn pipeline steel in a sour environment. International Journal of Fatigue, 2010, 32, 288-296.	5.7	37
20	Cementite precipitation during tempering of martensite under the influence of an externally applied stress. Journal of Materials Science, 1994, 29, 6079-6084.	3.7	29
21	Modelling microstructural evolution and mechanical properties of austempered ductile iron. Materials Science and Technology, 2000, 16, 1412-1419.	1.6	28
22	Effect of NiO on the Phase Stability and Microstructure of Yttria-Stabilized Zirconia. Journal of the American Ceramic Society, 2007, 90, 918-924.	3.8	28
23	Microstructural Evolution of Boron Nitride Particles in Advanced 9Cr Power Plant Steels. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 3411-3418.	2.2	28
24	Prediction of multiwire submerged arc weld bead shape using neural network modelling. Science and Technology of Welding and Joining, 2002, 7, 265-279.	3.1	27
25	Microstructural Analysis of IN617 and IN625 Oxidised in the Presence of Steam for use in Ultra-Supercritical Power Plant. Oxidation of Metals, 2013, 79, 553-566.	2.1	27
26	Characterisation of Intermetallic Phases in Multicomponent Al-Si Casting Alloys for Engineering Applications. Materials Science Forum, 2006, 519-521, 359-364.	0.3	26
27	Hot stage nanoindentation in multi-component Alâ€“Niâ€“Si alloys: Experiment and simulation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 494, 367-379.	5.6	26
28	Modelling the high temperature behaviour of TBCs using sequentially coupled microstructuralâ€“mechanical FE analyses. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2009, 513-514, 302-310.	5.6	25
29	Modeling of Microstructural Evolution in an MCrAlY Overlay Coating on Different Superalloy Substrates. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2012, 43, 774-788.	2.2	25
30	Microstructural considerations for ultrafine lead free solder joints. Microelectronics Reliability, 2007, 47, 1997-2006.	1.7	23
31	Changes in chemical composition of carbides in 2Â·25Crâ€“1Mo power plant steel. Materials Science and Technology, 1994, 10, 205-208.	1.6	22
32	Microstructural Characterization of the Heat-Affected Zones in Grade 92 Steel Welds: Double-Pass and Multipass Welds. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 1211-1230.	2.2	20
33	Effect of rejuvenation heat treatments on gamma prime distributions in a Ni based superalloy for power plant applications. Materials Science and Technology, 2013, 29, 775-780.	1.6	19
34	Characterization of isothermally aged Grade 91 (9Crâ€“1Moâ€“Nbâ€“V) steel by electron backscatter diffraction. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 460-461, 261-267.	5.6	18
35	Microstructural Analysis of Fatigue Initiation in Al-Si Casting Alloys. Materials Science Forum, 2006, 519-521, 1083-1088.	0.3	17
36	Title is missing!. Journal of Materials Science, 2001, 36, 5603-5608.	3.7	16

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37	The effect of microstructural and geometrical features on the reliability of ultrafine flip chip microsolder joints. Journal of Electronic Materials, 2004, 33, 1227-1235.	2.2	16
38	The Influence of Thermal Cycles on the Microstructure of Grade 92 Steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 5396-5414.	2.2	16
39	Microstructural characterization of oxide scales formed on steels P91 and P92. Materials at High Temperatures, 2011, 28, 361-368.	1.0	14
40	Microstructural and Chemical Rejuvenation of a Ni-Based Superalloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2016, 47, 6330-6338.	2.2	14
41	The use of combined three-dimensional electron backscatter diffraction and energy dispersive X-ray analysis to assess the characteristics of the gamma/gamma-prime microstructure in alloy 720Liâ„¢. Ultramicroscopy, 2012, 114, 1-10.	1.9	12
42	Effect of solder bump geometry on the microstructure of Snâ€“3.5 wt% Ag on electroless nickel immersion gold during solder dipping. Journal of Materials Research, 2005, 20, 649-658.	2.6	11
43	A computational interface for thermodynamic calculations software MTDATA. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2008, 32, 129-134.	1.6	11
44	Modelling of microstructural effects in the fatigue of austempered ductile iron. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2003, 346, 273-286.	5.6	10
45	Modelling the carbide composition changes in CrMoV steel during long-term tempering. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1992, 154, 197-205.	5.6	9
46	Atom probe and STEM studies of carbide precipitation in 2Cr1Mo steel. Applied Surface Science, 1993, 67, 334-341.	6.1	9
47	Development of Near-Eutectic Al-Si Casting Alloys for Piston Applications. Materials Science Forum, 2002, 396-402, 625-630.	0.3	9
48	Effect of intermetallic particles and grain boundaries on short fatigue crack growth behaviour in a cast Alâ€“4Cuâ€“3Niâ€“0.7Si piston alloy. Fatigue and Fracture of Engineering Materials and Structures, 2017, 40, 1428-1442.	3.4	9
49	Influence of microstructure on cavitation in the heat affected zone of a Grade 92 steel weld during long-term high temperature creep. Materials Characterization, 2020, 170, 110663.	4.4	9
50	A new spallation mechanism of thermal barrier coatings and a generalized mechanical model. Composite Structures, 2019, 227, 111314.	5.8	8
51	Materials behaviour and intermetallics characteristics in the reaction between SnAgCu and Snâ€“Pb solder alloys. Journal of Materials Science, 2007, 42, 4076-4086.	3.7	7
52	Determination of mode I and II adhesion toughness of monolayer thin films by circular blister tests. Theoretical and Applied Fracture Mechanics, 2018, 94, 34-39.	4.7	7
53	A new spallation mechanism of thermal barrier coatings on aero-engine turbine blades. Theoretical and Applied Mechanics Letters, 2018, 8, 7-11.	2.8	7
54	Modelling carburisation in 9Cr-1Mo ferritic steel tube substrates in experimental CO2 atmospheres. Corrosion Science, 2020, 163, 108248.	6.6	7

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55	A Neural Network Approach to the Prediction of Submerged Arc Weld Metal Chemistry.. ISIJ International, 1999, 39, 1096-1105.	1.4	6
56	Holographic diffractive optical elements allow improvements in conduction laser welding of steels. , 2006, , .		6
57	A Survey of Fitness-for-Service Trends in Industry. Journal of Pressure Vessel Technology, Transactions of the ASME, 2011, 133, .	0.6	6
58	Effects of Solute Nb Atoms and Nb Precipitates on Isothermal Transformation Kinetics from Austenite to Ferrite. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2016, 47, 3387-3396.	2.2	6
59	Microstructural characterisation of oxide formation from MCrAlY coatings on nickel-based superalloys. Materials at High Temperatures, 2009, 26, 161-168.	1.0	5
60	An investigation on oxidation/carburisation of 9Cr-1Mo steel heat exchanger tube in an AGR environment. Materials at High Temperatures, 2018, 35, 56-65.	1.0	5
61	Spontaneous formation and morphology of telephone cord blisters in thin films: The Î© formulae. Composite Structures, 2019, 225, 111108.	5.8	5
62	Phase separation in a Niâ€“37 at.% Coâ€“5% Nb alloy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1998, 250, 104-108.	5.6	4
63	Atom probe characterisation of high temperature materials. Materials Science and Technology, 2000, 16, 1199-1206.	1.6	4
64	Finite element modelling of development of stresses in thermal barrier coatings. Energy Materials, 2009, 4, 133-140.	0.1	3
65	Microstructural analysis of steam oxidation of IN617 for use in ultra-supercritical steam plants. Materials at High Temperatures, 2012, 29, 81-88.	1.0	3
66	Swelling-induced telephone cord blisters in hydrogel films. Composite Structures, 2022, 280, 114909.	5.8	3
67	Modeling the interdependence of processing and alloy composition on the evolution of microstructure in Sn-based lead-free solders in fine pitch flip chip. IEEE Transactions on Components and Packaging Technologies, 2006, 29, 98-104.	1.3	2
68	MCrAlY creep behaviour modelling by means of finite-element unit cells and self-consistent constitutive equations. Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications, 2009, 223, 41-51.	1.1	2
69	Influence of Fatigue Loading on the Engineering Critical Assessment of Steel Catenary Risers in Sour Deepwater Oil and Gas Developments. Key Engineering Materials, 2009, 413-414, 313-325.	0.4	1
70	Modelling of microstructural evolution in multi-layered overlay coatings. Journal of Materials Science, 2017, 52, 12279-12294.	3.7	1
71	Determination of residual stress and interface adhesion toughness of thin films by blisters. Material Design and Processing Communications, 2019, 1, e60.	0.9	1
72	Short Fatigue Crack Growth Micromechanisms in a Cast Aluminium Piston Alloy. , 2012, , 485-490.		1

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73	An Atom Probe Field Ion Microscope Study of Model Ni-Al Superalloys Containing Be. European Physical Journal Special Topics, 1996, 06, C5-259-C5-264.	0.2	1
74	The Behaviour of Shallow Cracks in a Pipeline Steel Operating in a Sour Environment. , 2008, , .		1
75	An APFIM and TEM Study of Ni4Mo Precipitation In a Commercial Ni-28% Mo-1.4 % Fe-0.4% Cr Wt. % Alloy. Microscopy and Microanalysis, 1998, 4, 92-93.	0.4	0
76	Digital Field Ion Microscopy. Microscopy and Microanalysis, 1998, 4, 88-89.	0.4	0
77	A holistic approach to structural integrity of high temperature welds in power plants. , 2009, , .		0
78	The Behavior of Shallow Cracks in a Pipeline Steel Operating in a Sour Environment. Journal of Offshore Mechanics and Arctic Engineering, 2009, 131, .	1.2	0
79	Microstructural evolution in coated superalloy systems. Energy Materials, 2009, 4, 11-16.	0.1	0
80	Modelling of Nb influence on phase transformation behaviours from austenite to ferrite in low carbon steels. Modelling and Simulation in Materials Science and Engineering, 2016, 24, 035016.	2.0	0
81	Calculation of Diffusion Coefficients in Î³-Ni. Key Engineering Materials, 2019, 795, 15-21.	0.4	0
82	Characterization of Precipitates with the Atom Probe. European Physical Journal Special Topics, 1996, 06, C5-277-C5-282.	0.2	0