Vijay K Vasudevan

List of Publications by Year
in descending order

73 papers	2,633 citations	186209 28 h-index	189801 50 g-index
76 all docs	76 docs citations	76 times ranked	1600 citing authors

#	Article	IF	Citations
1	Gradient nanostructure and residual stresses induced by Ultrasonic Nano-crystal Surface Modification in 304 austenitic stainless steel for high strength and high ductility. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2014, 613, 274-288.	2.6	258
2	Microstructure of Long-Term Aged IN617 Ni-Base Superalloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2008, 39, 2569-2585.	1.1	165
3	Comparison of mechanisms of advanced mechanical surface treatments in nickel-based superalloy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 576, 346-355.	2.6	119
4	Characteristics of surface layers formed on inconel 718 by laser shock peening with and without a protective coating. Journal of Materials Processing Technology, 2015, 225, 463-472.	3.1	111
5	Effect of laser shock peening on residual stress, microstructure and fatigue behavior of ATI 718Plus alloy. International Journal of Fatigue, 2017, 102, 121-134.	2.8	109
6	Laser shock peening without coating induced residual stress distribution, wettability characteristics and enhanced pitting corrosion resistance of austenitic stainless steel. Applied Surface Science, 2018, 428, 17-30.	3.1	104
7	The effects of ultrasonic nanocrystal surface modification on the fatigue performance of 3D-printed Ti64. International Journal of Fatigue, 2017, 103, 136-146.	2.8	102
8	The geometry and nature of pinning points of Â½ âŸ¨110] unit dislocations in binary TiAl alloys. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1997, 76, 965-993.	0.7	98
9	A finite element study of thermal relaxation of residual stress in laser shock peened IN718 superalloy. International Journal of Impact Engineering, 2011, 38, 590-596.	2.4	85
10	Effect of Ultrasonic Nanocrystal Surface Modification on residual stress, microstructure and fatigue behavior of ATI 718Plus alloy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2018, 711, 364-377.	2.6	82
11	Thermal relaxation of residual stress in laser shock peened Tiâ€“6Alâ€“4V alloy. Surface and Coatings Technology, 2012, 206, 4619-4627.	2.2	77
12	Simulation-based optimization of laser shock peening process for improved bending fatigue life of Tiâ€“6Alâ€“2Snâ€“4Zrâ€“2Mo alloy. Surface and Coatings Technology, 2013, 232, 464-474.	2.2	72
13	Bulk mixed Moâ€“Vâ€“Teâ€“O catalysts for propane oxidation to acrylic acid. Applied Catalysis A: General, 2004, 274, 123-132.	2.2	67
14	Effect of laser shock peening on elevated temperature residual stress, microstructure and fatigue behavior of ATI 718Plus alloy. International Journal of Fatigue, 2017, 104, 366-378.	2.8	66
15	Static and in-situ high-resolution transmission electron microscopy investigations of the atomic structure and dynamics of massive transformation interfaces in a Ti-Al alloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2002, 33, 2391-2411.	1.1	64
16	Effects of laser shock peening on SCC behavior of Alloy 600 in tetrathionate solution. Corrosion Science, 2015, 90, 434-444.	3.0	62
17	Iterative thermomechanical processing of alloy 600 for improved resistance to corrosion and stress corrosion cracking. Acta Materialia, 2016, 113, 180-193.	3.8	61
18	Surface amorphization of NiTi alloy induced by Ultrasonic Nanocrystal Surface Modification for improved mechanical properties. Journal of the Mechanical Behavior of Biomedical Materials, 2016, 53, 455-462.	1.5	60

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19	Surface grain boundary engineering of Alloy 600 for improved resistance to stress corrosion cracking. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2015, 648, 280-288.	2.6	59
20	Effect of chromium addition on the ordering behaviour of Niâ€“Mo alloy: experimental results vs. electronic structure calculations. Acta Materialia, 2002, 50, 3301-3315.	3.8	51
21	Roles of Surface Te, Nb, and Sb Oxides in Propane Oxidation to Acrylic Acid over Bulk Orthorhombic Moâ^'Vâ^'O Phase. Journal of Physical Chemistry B, 2005, 109, 24046-24055.	1.2	48
22	Mechanical properties and strengthening of a Niî—¸25Moî—¸8Cr alloy containing Ni2(Mo,Cr) precipitates. Acta Materialia, 1996, 44, 4865-4880.	3.8	47
23	Effects of ultrasonic nanocrystal surface modification on the surface integrity, microstructure, and wear resistance of 300M martensitic ultra-high strength steel. Journal of Materials Processing Technology, 2020, 285, 116767.	3.1	42
24	Residual stress, phase, microstructure and mechanical property studies of ultrafine bainitic steel through laser shock peening. Optics and Laser Technology, 2019, 115, 447-458.	2.2	41
25	Phase equilibria and solid state transformations in Nb-rich Nbâ€“Tiâ€“Al intermetallic alloys. Intermetallics, 2000, 8, 1257-1268.	1.8	37
26	Effect of ultrasonic nanocrystal surface modification on elevated temperature residual stress, microstructure, and fatigue behavior of ATI 718Plus alloy. International Journal of Fatigue, 2018, 110, 186-196.	2.8	37
27	Localized plastic deformation and hardening in laser shock peened Inconel alloy 718SPF. Materials Characterization, 2018, 142, 15-26.	1.9	36
28	Model bulk Moâ€“Vâ€“Teâ€“O catalysts for selective oxidation of propane to acrylic acid. Catalysis Communications, 2003, 4, 537-542.	1.6	31
29	Examination of solidification pathways and the liquidus surface in the Nb-Ti-Al system. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2000, 31, 1305-1321.	1.0	30
30	Enhanced surface and mechanical properties of bioinspired nanolaminate graphene-aluminum alloy nanocomposites through laser shock processing for engineering applications. Materials Today Communications, 2018, 16, 81-89.	0.9	26
31	Experimental and Finite Element Simulation Study of Thermal Relaxation of Residual Stresses in Laser Shock Peened IN718 SPF Superalloy. Experimental Mechanics, 2014, 54, 1597-1611.	1.1	25
32	Effect of temperature on microstructure and residual stresses induced by surface treatments in Inconel 718 SPF. Surface and Coatings Technology, 2018, 344, 93-101.	2.2	25
33	Effects of Ultrasonic Nanocrystal Surface Modification on the Residual Stress, Microstructure, and Corrosion Resistance of 304 Stainless Steel Welds. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 972-978.	1.1	23
34	High spatial resolution, high energy synchrotron x-ray diffraction characterization of residual strains and stresses in laser shock peened Inconel 718SPF alloy. Journal of Applied Physics, 2012, 111, .	1.1	22
35	Hierarchical structures on nickel-titanium fabricated by ultrasonic nanocrystal surface modification. Materials Science and Engineering C, 2018, 93, 12-20.	3.8	20
36	A multi-temporal scale approach to high cycle fatigue simulation. Computational Mechanics, 2014, 53, 387-400.	2.2	16

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37	Effect of thermo-mechanical processing on sensitization and corrosion in alloy 600 studied by SEM- and TEM-Based diffraction and orientation imaging techniques. Journal of Nuclear Materials, 2018, 505, 276-288.	1.3	16
38	The microstructures of rapidly solidified and heat-treated Alî—¸8Feî—¸2Moî—¸Si alloys. Materials Science and Engineering, 1988, 98, 131-136.	0.1	15
39	Deformation-induced pseudo-twinning and a new superstructure in Ni2Mo precipitates contained in a Ni-25Mo-8Cr alloy. Acta Materialia, 1996, 44, 3575-3583.	3.8	15
40	On the comparison of graded microstructures developed through High Reduction (per pass) Cold Rolling (HRCR) and Ultrasonic Nanocrystal Surface Modification (UNSM) in nickel-base Alloy 602CA. Materials Characterization, 2019, 153, 328-338.	1.9	15
41	Identification of precipitates in rapidly solidified and heat-treated Al-8Fe-2Mo-Si alloys. Scripta Metallurgica, 1987, 21, 1105-1110.	1.2	14
42	Microstructural characterization of multicomponent Nb-Ti-Si-Cr-Al-X alloys. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2006, 37, 2669-2682.	1.1	13
43	The Î±â†'Î³ Transformation During Continuous Cooling in Ti-48 At% Al Alloys. Materials Research Society Symposia Proceedings, 1992, 288, 223.	0.1	12
44	Laser shock peening modified surface texturing, microstructure and mechanical properties of graphene dispersion strengthened aluminium nanocomposites. Surfaces and Interfaces, 2019, 14, 127-137.	1.5	12
45	Accelerated multiscale spaceâ€“time finite element simulation and application to high cycle fatigue life prediction. Computational Mechanics, 2016, 58, 329-349.	2.2	11
46	Deformation Mechanisms in TiAl-Based Alloys Containing Low Oxygen. Materials Research Society Symposia Proceedings, 1990, 213, 375.	0.1	10
47	Crystallographic analysis and observations of true twinning modes in the Ni2Mo superlattice phase contained in a Ni-25Mo-8Cr alloy. Acta Materialia, 1997, 45, 3203-3222.	3.8	10
48	Microstructural effects on the tensile properties and deformation behavior of a Ti-48Al gamma titanium aluminide. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2003, 34, 2113-2127.	1.1	10
49	Effects of corrosion-inhibiting surface treatments on irradiated microstructure development in Ni-base alloy 718. Journal of Nuclear Materials, 2018, 512, 276-287.	1.3	10
50	Remarkable near-surface microstructure of nanoparticles and oxide film in laser shock peened Al-Zn-Mg-Cu alloy. Scripta Materialia, 2021, 202, 114012.	2.6	10
51	The mechanisms of plastic deformation of rapidly solidified Al3Ti and Al67Ni8Ti25 intermetallic compounds.. Materials Research Society Symposia Proceedings, 1988, 133, 705.	0.1	7
52	Geometrical and structural characteristics of stacking fault-antiphase-boundary interactions in the massive Î³mphase in a quenched Ti-46.5 at.% Al alloy. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 2000, 80, 185-199.	0.7	7
53	Tribological performance of 52,100 steel subjected to boron-doped DLC coating and ultrasonic nanocrystal surface modification. Wear, 2020, 458-459, 203398.	1.5	7
54	Short-Range to Long-Range Ordering Reactions in a Ni-25Mo-8Cr Alloy. Materials Research Society Symposia Proceedings, 1990, 213, 187.	0.1	6

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55	Factors influencing the deformation mechanisms in the intermetallic compounds Al₃Ti and Al₃V. Philosophical Magazine Letters, 1990, 62, 143-151.	0.5	6
56	Site occupancy preferences in the B2 ordered phase in Nbâ€“rich Nbâ€“Tiâ€“Al alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2002, 329-331, 461-467.	2.6	6
57	Simulation-based prediction of cyclic failure in rubbery materials using nonlinear space-time finite element method coupled with continuum damage mechanics. Finite Elements in Analysis and Design, 2018, 138, 21-30.	1.7	6
58	Synthesis of TiO₂ Nanoparticles Using Chemical Vapor Condensation. Materials Research Society Symposia Proceedings, 2005, 879, 1.	0.1	5
59	A computational study on the microstructural evolution in near-surface copper grain boundary structures due to femtosecond laser processing. Computational Mechanics, 2018, 61, 105-117.	2.2	5
60	Tensile Properties and Fracture Behavior of ATI 718Plus Alloy at Room and Elevated Temperatures. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2021, 52, 3553-3569.	1.1	4
61	A Review of Lowâ€Plasticity Burnishing and Its Applications. Advanced Engineering Materials, 2022, 24, .	1.6	4
62	Effect of Cooling Rate on Decomposition of the Î± Phase in Ti-(43-50) At.% Al ALLOYS:. Materials Research Society Symposia Proceedings, 1992, 288, 229.	0.1	3
63	Mechanical Properties and Dislocation Structures in TiAl Alloys with Varying Aluminum Contents. Materials Research Society Symposia Proceedings, 1992, 288, 737.	0.1	3
64	Deformation Behavior and Dislocation Mechanisms in Tial Alloys. Materials Research Society Symposia Proceedings, 1994, 364, 647.	0.1	3
65	Formation mechanism of Ni3Mo at low temperatures in ternary Ni, Moâ€”Cr alloys. Philosophical Magazine Letters, 1989, 60, 269-275.	0.5	2
66	Tensile, Creep Properties and Microstructural Correlations in an Extruded Ti-48Al Alloy. Materials Research Society Symposia Proceedings, 1992, 288, 787.	0.1	2
67	Cyclic Strain Resistance, Stress Response, Fatigue Life, and Fracture Behavior of High Strength Low Alloy Steel 300ÂM. Journal of Materials Engineering and Performance, 2014, 23, 1799-1814.	1.2	1
68	Fatigue Performance Improvement of 7075-T651 Aluminum Alloy by Ultrasonic Nanocrystal Surface Modification. Journal of Materials Engineering and Performance, 0, , 1.	1.2	1
69	Formation of the Laves Phase in Nb-Ti-Cr-Si-X-Based Alloys. Transactions of the Indian Institute of Metals, 2022, 75, 931.	0.7	1
70	Analysis of Weak-Beam Contrast from SESF/SISF Fault Pairs Associated with Â½ <112] Superdislocations in TiAl. Materials Research Society Symposia Proceedings, 1998, 552, 1.	0.1	0
71	Reversible Hydrogen Absorption/Desorption and Related Lattice Deformation of Ti3Al Based Alloys in the Ti-Al-Nb System. Materials Research Society Symposia Proceedings, 2002, 753, 1.	0.1	0
72	Effects of Ultrasonic Nano-Crystal Surface Modification on the Microstructure and Properties of 304 Austenitic Stainless Steel. , 2014, , .		0

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73	The Microstructures of Rapidly Solidified and Heat-Treated Alâ€“8Feâ€“2Moâ€“Si Alloys. , 1988, , 131-136.		0