Harshad Bhadeshia

List of Publications by Year
in descending order

121 papers	8,045 citations	81839 39 h-index	49868 87 g-index
122 all docs	122 docs citations	122 times ranked	4011 citing authors

#	Article	IF	Citations
1	Steels for bearings. Progress in Materials Science, 2012, 57, 268-435.	16.0	759
2	Review: Friction stir welding tools. Science and Technology of Welding and Joining, 2011, 16, 325-342.	1.5	623
3	Neural Networks in Materials Science.. ISIJ International, 1999, 39, 966-979.	0.6	546
4	The bainite transformation in a silicon steel. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1979, 10, 895-907.	1.4	488
5	Bainite in steels. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1990, 21, 767-797.	1.4	481
6	Thermodynamic analysis of isothermal transformation diagrams. Metal Science, 1982, 16, 159-166.	0.7	270
7	Estimation of bainite plate-thickness in low-alloy steels. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1998, 245, 72-79.	2.6	264
8	Influence of silicon on cementite precipitation in steels. Materials Science and Technology, 2008, 24, 343-347.	0.8	259
9	Nanostructured bainite. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2010, 466, 3-18.	1.0	247
10	Friction stir welding of dissimilar alloys â€“ a perspective. Science and Technology of Welding and Joining, 2010, 15, 266-270.	1.5	243
11	In-situ observations of lattice parameter fluctuations in austenite and transformation to bainite. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2005, 36, 3281-3289.	1.1	207
12	Austenite films in bainitic microstructures. Materials Science and Technology, 1995, 11, 874-882.	0.8	190
13	Model for transition from upper to lower bainite. Materials Science and Technology, 1990, 6, 592-603.	0.8	162
14	Characterizing Phase Transformations and Their Effects on Ferritic Weld Residual Stresses with X-Rays and Neutrons. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2008, 39, 3070-3078.	1.1	111
15	The first bulk nanostructured metal. Science and Technology of Advanced Materials, 2013, 14, 014202.	2.8	108
16	A Model for the Microstructure of Some Advanced Bainitic Steels. Materials Transactions, JIM, 1991, 32, 689-696.	0.9	107
17	Performance of neural networks in materials science. Materials Science and Technology, 2009, 25, 504-510.	0.8	99
18	Cementite. International Materials Reviews, 2020, 65, 1-27.	9.4	84

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19	Thermal stability of retained austenite in bainitic steel: anÂ in situ study. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2011, 467, 3141-3156.	1.0	81
20	Interphase precipitation in Tiâ€“Nb and Tiâ€“Nbâ€“Mo bearing steel. Materials Science and Technology, 2013, 29, 309-313.	0.8	81
21	Mechanism of the Transition from Bainite to Acicular Ferrite. Materials Transactions, JIM, 1991, 32, 679-688.	0.9	77
22	Crystallographic texture of stress-affected bainite. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2007, 463, 2309-2328.	1.0	77
23	Microstructural evolution in two variants of NF709 at 1023 and 1073 K. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2005, 36, 23-34.	1.1	71
24	Diffusion of carbon in austenite. Metal Science, 1981, 15, 477-480.	0.7	70
25	TRIP-assisted steels: cracking of high-carbon martensite. Materials Science and Technology, 2006, 22, 645-649.	0.8	70
26	Neural Networks and Information in Materials Science. Statistical Analysis and Data Mining, 2009, 1, 296-305.	1.4	68
27	Effect of aluminium on hydrogen-induced fracture behaviour in austenitic Feâ€“Mnâ€“C steel. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20120458.	1.0	66
28	White-Etching Matter in Bearing Steel. Part II: Distinguishing Cause and Effect in Bearing Steel Failure. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 4916-4931.	1.1	65
29	Critical Assessment 13: Elimination of white etching matter in bearing steels. Materials Science and Technology, 2015, 31, 1011-1015.	0.8	64
30	Fe-Cr-C hardfacing alloys for high-temperature applications. Journal of Materials Science, 1986, 21, 1015-1019.	1.7	63
31	The Effects of Filler Metal Transformation Temperature on Residual Stresses in a High Strength Steel Weld. Journal of Pressure Vessel Technology, Transactions of the ASME, 2009, 131, .	0.4	52
32	The distribution of substitutional alloying elements during the bainite transformation. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1990, 21, 837-844.	1.4	49
33	Duplex Hardening of Steels for Aeroengine Bearings. ISIJ International, 2012, 52, 1927-1934.	0.6	47
34	The evolution of solutions: A thermodynamic analysis of mechanical alloying. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 1997, 28, 2189-2194.	1.1	46
35	Carbonâ€“carbon interactions in iron. Journal of Materials Science, 2004, 39, 3949-3955.	1.7	45
36	Stainless steel weld metal designed to mitigate residual stresses. Science and Technology of Welding and Joining, 2009, 14, 559-565.	1.5	44

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37	Non-equilibrium solidification and ferrite in Î´-TRIP steel. Materials Science and Technology, 2010, 26, 817-823.	0.8	44
38	Effect of interpass temperature on residual stresses in multipass welds produced using low transformation temperature filler alloy. Science and Technology of Welding and Joining, 2014, 19, 44-51.	1.5	44
39	Coupled diffusional/displacive transformations: Part II. Solute trapping. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1990, 21, 805-809.	1.4	41
40	Topology of grain deformation. Materials Science and Technology, 1998, 14, 832-834.	0.8	40
41	Divorced pearlite in steels. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 2767-2778.	1.0	40
42	Acicular ferrite morphologies in a medium-carbon microalloyed steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2001, 32, 2187-2197.	1.1	39
43	Heat transfer coefficients during quenching of steels. Heat and Mass Transfer, 2011, 47, 315-321.	1.2	39
44	Estimation of mechanical properties of ferritic steel welds. Part 1: Yield and tensile strength. Science and Technology of Welding and Joining, 2000, 5, 135-147.	1.5	38
45	Extraordinary ductility in Al-bearing Î´-TRIP steel. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2011, 467, 234-243.	1.0	38
46	Diffusional Transformations: A Theory for the Formation of Superledges. Physica Status Solidi A, 1982, 69, 745-750.	1.7	37
47	A model for austenitisation of hypoeutectoid steels. Journal of Materials Science, 2003, 38, 1195-1201.	1.7	37
48	Bearing steel microstructures after aircraft gas turbine engine service. Materials Science and Technology, 2014, 30, 1911-1918.	0.8	36
49	The bainite transformation in chemically heterogeneous 300M high-strength steel. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1990, 21, 859-875.	1.4	35
50	Neural network analysis of strength and ductility of welding alloys for high strength low alloy shipbuilding steels. Science and Technology of Welding and Joining, 2001, 6, 116-124.	1.5	34
51	Spot weldability of TRIP assisted steels with high carbon and aluminium contents. Science and Technology of Welding and Joining, 2012, 17, 92-98.	1.5	33
52	Carbon in cubic and tetragonal ferrite. Philosophical Magazine, 2013, 93, 3714-3725.	0.7	33
53	Bainite orientation in plastically deformed austenite. International Journal of Materials Research, 2009, 100, 40-45.	0.1	32
54	Tool durability maps for friction stir welding of an aluminium alloy. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2012, 468, 3552-3570.	1.0	32

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55	Crystallographic texture in mechanically alloyed oxide dispersion-strengthened MA956 and MA957 steels. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1993, 24, 773-779.	1.4	31
56	Strength of Ferritic Steels: Neural Networks and Genetic Programming. Materials and Manufacturing Processes, 2008, 24, 10-15.	2.7	30
57	Mixed diffusion-controlled growth of pearlite in binary steel. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2011, 467, 508-521.	1.0	30
58	Macrosegregation and Microstructural Evolution in a Pressure-Vessel Steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 2983-2997.	1.1	29
59	Dry rolling/sliding wear of nanostructured pearlite. Materials Science and Technology, 2015, 31, 1735-1744.	0.8	29
60	Surface Relief Due to Bainite Transformation at 473ÂK (200ÂÂ°C). Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2011, 42, 3344-3348.	1.1	28
61	Tempering of Low-Temperature Bainite. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 3410-3418.	1.1	28
62	In situ synchrotron X-ray study of bainite transformation kinetics in a low-carbon Si-containing steel. Materials Science and Technology, 2017, 33, 2147-2156.	0.8	28
63	Effects of weld preheat temperature and heat input on type IV failure. Science and Technology of Welding and Joining, 2009, 14, 436-442.	1.5	27
64	Modeling M6C precipitation in niobium-alloyed ferritic stainless steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2002, 33, 3339-3347.	1.1	26
65	Estimation of mechanical properties of ferritic steel welds. Part 2: Elongation and Charpy toughness. Science and Technology of Welding and Joining, 2000, 5, 149-160.	1.5	25
66	Calculation of crystallographic texture due to displacive transformations. International Journal of Materials Research, 2008, 99, 342-346.	0.1	25
67	Induction welding and heat treatment of steel pipes: Evolution of crystallographic texture detrimental to toughness. Science and Technology of Welding and Joining, 2010, 15, 137-141.	1.5	25
68	White-Etching Matter in Bearing Steel. Part I: Controlled Cracking of 52100 Steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 4907-4915.	1.1	25
69	Effects of dilution and baseplate strength on stress distributions in multipass welds deposited using low transformation temperature filler alloys. Science and Technology of Welding and Joining, 2014, 19, 461-467.	1.5	25
70	Diffusion-controlled growth of pearlite in ternary steels. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2011, 467, 2948-2961.	1.0	24
71	The Effect of a Two-Stage Heat-Treatment on the Microstructural and Mechanical Properties of a Maraging Steel. Materials, 2017, 10, 1346.	1.3	24
72	Surface residual stresses in multipass welds produced using low transformation temperature filler alloys. Science and Technology of Welding and Joining, 2014, 19, 623-630.	1.5	23

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73	Stress-affected transformation to lower bainite. Journal of Materials Science, 1996, 31, 2145-2148.	1.7	22
74	Very Short and Very Long Heat Treatments in the Processing of Steel. Materials and Manufacturing Processes, 2010, 25, 1-6.	2.7	22
75	Modelling coarsening behaviour of TiC precipitates in high strength, low alloy steels. Materials Science and Technology, 2013, 29, 1074-1079.	0.8	22
76	Harnessing the scientific synergy of welding and additive manufacturing. Science and Technology of Welding and Joining, 2019, 24, 361-366.	1.5	22
77	An aspect of the nucleation of burst martensite. Journal of Materials Science, 1982, 17, 383-386.	1.7	21
78	Nonuniform recrystallization in a mechanically alloyed nickel-base superalloy. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1993, 24, 1049-1055.	1.4	21
79	Spot weldability of Î´-TRIP steel containing 0Â·4 wt-%C. Science and Technology of Welding and Joining, 2010, 15, 619-624.	1.5	21
80	Influence of Deformation on Recrystallization of an Yttrium Oxide Dispersion-Strengthened Iron Alloy (PM2000). Advanced Engineering Materials, 2003, 5, 232-237.	1.6	19
81	Crystallographic texture and the austenite grain structure of low-alloy steel weld deposits. Journal of Materials Science Letters, 1991, 10, 142-144.	0.5	18
82	Transformation texture of allotriomorphic ferrite in steel. Materials Science and Technology, 2009, 25, 892-895.	0.8	18
83	Ausforming of medium carbon steel. Materials Science and Technology, 2015, 31, 436-442.	0.8	17
84	The nonunjform distribution of inclusions in low-alloy steel weld deposits. Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science, 1988, 19, 669-674.	1.4	15
85	The microstructure of submerged arc-weld deposits for high-strength steels. Journal of Materials Science, 1989, 24, 3180-3188.	1.7	15
86	Analysis of toughness of welding alloys for high strength low alloy shipbuilding steels. Science and Technology of Welding and Joining, 2001, 6, 368-374.	1.5	15
87	Strength and toughness of clean nanostructured bainite. Materials Science and Technology, 2017, 33, 1171-1179.	0.8	15
88	Cracks in Martensite Plates as Hydrogen Traps in a Bearing Steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2015, 46, 665-673.	1.1	14
89	Elucidating white-etching matter through high-strain rate tensile testing. Materials Science and Technology, 2017, 33, 307-310.	0.8	14
90	Tensile behaviour of thermally-stable nanocrystalline bainitic-steels. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 746, 145-153.	2.6	13

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91	A Commentary on: â€œDiffusion of Carbon in Austenite with a Discontinuity in Compositionâ€• Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2010, 41, 1605-1615.	1.1	12
92	Spheroidisation of hypereutectoid state of nanostructured bainitic steel. Materials Science and Technology, 2014, 30, 1282-1286.	0.8	12
93	Toughness anisotropy in X70 and X80 linepipe steels. Materials Science and Technology, 2014, 30, 439-446.	0.8	12
94	Solution to the Bagaryatskii and Isaichev ferriteâ€“cementite orientation relationship problem. Materials Science and Technology, 2018, 34, 1666-1668.	0.8	12
95	The influence of alloying elements on the formation of allotriomorphic ferrite in low-alloy steel weld deposits. Journal of Materials Science Letters, 1985, 4, 305-308.	0.5	10
96	Mechanism and Kinetics of Solid-State Transformation in High-Temperature Processed Linepipe Steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2013, 44, 5468-5477.	1.1	10
97	Effect of manganese sulphide particle shape on the pinning of grain boundary. Materials Science and Technology, 2017, 33, 1013-1018.	0.8	10
98	Atom probe and STEM studies of carbide precipitation in 2Cr1Mo steel. Applied Surface Science, 1993, 67, 334-341.	3.1	9
99	Atomic Mechanism of the Bainite Transformation. HTM - Journal of Heat Treatment and Materials, 2017, 72, 340-345.	0.1	9
100	Modelling of transition from upper to lower bainite in multi-component system. Materials Science and Technology, 2017, 33, 430-437.	0.8	8
101	Designing steel to resist hydrogen embrittlement Part 2 â€“ precipitate characterisation. Materials Science and Technology, 2018, 34, 1747-1758.	0.8	8
102	Critical Assessment 34: Are Ï‡ (HÃgg), Î· and Ïµ carbides transition-phases relative to cementite in steels?. Materials Science and Technology, 2019, 35, 1301-1305.	0.8	8
103	Recent developments in bearing steels. Materials Science and Technology, 2016, 32, 1059-1061.	0.8	7
104	Modelling of size distribution of blocky retained austenite in Si-containing bainitic steels. Materials Science and Technology, 2018, 34, 54-62.	0.8	7
105	Austenite formation in 9Crâ€“1Mo type power plant steels. Science and Technology of Welding and Joining, 1997, 2, 36-42.	1.5	6
106	Bruscato factor in temper embrittlement of welds. Science and Technology of Welding and Joining, 2000, 5, 338-340.	1.5	5
107	Intermetallic-strengthened nanocrystalline bainitic steel. Materials Science and Technology, 2018, 34, 1976-1979.	0.8	5
108	Comments on â€˜Determination of M_s temperature: methods, meaning and influence of â€˜slow startâ€™ phenomenonâ€™ by T. Sourmail and V. Smanio. Materials Science and Technology, 2013, 29, 889-889.	0.8	4

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109	Model for multiple stress affected martensitic transformations, microstructural entropy and consequences on scatter in properties. Materials Science and Technology, 2014, 30, 160-165.	0.8	4
110	Elongation of Irradiated Steels. Materials and Manufacturing Processes, 2009, 24, 130-137.	2.7	3
111	Shear band structure in ballistically tested bainitic steels. Materials Science and Technology, 2014, 30, 812-817.	0.8	3
112	First-principles calculations of elastic constants for epsilon-carbide and the consequences. Materials Science and Technology, 2020, 36, 615-622.	0.8	3
113	The estimation of non-uniform elongation in low-alloy steel weld deposits. Journal of Materials Science, 1990, 25, 613-618.	1.7	2
114	Mol̂ssbauer Analysis of Low-Temperature Bainite. AIP Conference Proceedings, 2005, , .	0.3	2
115	Guest Editorial: Personal perspective on microstructure of steels: 25th anniversary of MST and collection of papers in honour of Sir Robert Honeycombe. Materials Science and Technology, 2010, 26, 379-385.	0.8	2
116	Melt-spinning and semi-solid processing of bainitic steel. Materials Science and Technology, 2017, 33, 870-878.	0.8	2
117	Analysis of toughness of welding alloys for high strength low alloy shipbuilding steels. Science and Technology of Welding and Joining, 2001, 6, 368-374.	1.5	2
118	The austenite grain structure of low-alloy steel weld deposits. Journal of Materials Science, 1986, 21, 3947-3951.	1.7	1
119	Austenite formation in 9Crâ€“1Mo type power plant steels. Science and Technology of Welding and Joining, 1997, 2, 36-42.	1.5	1
120	A Commentary on: â€œDiffusion of Carbon in Austenite with a Discontinuity in Compositionâ€• Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2010, 41, 741-751.	1.0	0
121	1000 gems: Celebration of STWJ. Science and Technology of Welding and Joining, 2011, 16, 285-287.	1.5	0