Harshad Bhadeshia

List of Publications by Citations

118 papers	6,711 citations	38 h-index	80 g-index
122 ext. papers	7,303 ext. citations	3.1 avg, IF	6.54 L-index

#	Paper	IF	Citations
118	Steels for bearings. *Progress in Materials Science*, **2012**, 57, 268-435	42.2	575
117	Review: friction stir welding tools. *Science and Technology of Welding and Joining*, **2011**, 16, 325-342	3.7	484
116	Neural Networks in Materials Science.. *ISIJ International*, **1999**, 39, 966-979	1.7	450
115	The bainite transformation in a silicon steel. *Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science*, **1979**, 10, 895-907		445
114	Bainite in steels. *Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science*, **1990**, 21, 767-797		416
113	Thermodynamic analysis of isothermal transformation diagrams. *Metal Science*, **1982**, 16, 159-166		236
112	Estimation of bainite plate-thickness in low-alloy steels. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **1998**, 245, 72-79	5.3	224
111	Nanostructured bainite. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2010**, 466, 3-18	2.4	222
110	Influence of silicon on cementite precipitation in steels. *Materials Science and Technology*, **2008**, 24, 343-347	1.5	205
109	Friction stir welding of dissimilar alloys a perspective. *Science and Technology of Welding and Joining*, **2010**, 15, 266-270	3.7	202
108	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	2.3	180
107	Austenite films in bainitic microstructures. *Materials Science and Technology*, **1995**, 11, 874-882	1.5	158
106	Model for transition from upper to lower bainite. *Materials Science and Technology*, **1990**, 6, 592-603	1.5	141
105	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	2.3	98
104	A Model for the Microstructure of Some Advanced Bainitic Steels. *Materials Transactions, JIM*, **1991**, 32, 689-696		94
103	The first bulk nanostructured metal. *Science and Technology of Advanced Materials*, **2013**, 14, 014202	7.1	89
102	Performance of neural networks in materials science. *Materials Science and Technology*, **2009**, 25, 504-510	1.5	76

101	Crystallographic texture of stress-affected bainite. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2007**, 463, 2309-2328	2.4	72
100	Interphase precipitation in TiNb and TiNbMo bearing steel. *Materials Science and Technology*, **2013**, 29, 309-313	1.5	71
99	Thermal stability of retained austenite in bainitic steel: an in situ study. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2011**, 467, 3141-3156	2.4	70
98	TRIP-assisted steels: cracking of high-carbon martensite. *Materials Science and Technology*, **2006**, 22, 645-649	1.5	64
97	Mechanism of the Transition from Bainite to Acicular Ferrite. *Materials Transactions, JIM*, **1991**, 32, 679-688		62
96	Neural Networks and Information in Materials Science. *Statistical Analysis and Data Mining*, **2009**, 1, 296-305	1.4	60
95	Fe-Cr-C hardfacing alloys for high-temperature applications. *Journal of Materials Science*, **1986**, 21, 1015-1019	4.9	60
94	Effect of aluminium on hydrogen-induced fracture behaviour in austenitic FeMnC steel. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2013**, 469, 20120458	2.4	59
93	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	2.3	59
92	Diffusion of carbon in austenite. *Metal Science*, **1981**, 15, 477-480		57
91	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	2.3	55
90	Critical Assessment 13: Elimination of white etching matter in bearing steels. *Materials Science and Technology*, **2015**, 31, 1011-1015	1.5	51
89	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,	1.2	48
88	The distribution of substitutional alloying elements during the bainite transformation. *Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science*, **1990**, 21, 837-844		44
87	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	3.7	42
86	Carbon–carbon interactions in iron. *Journal of Materials Science*, **2004**, 39, 3949-3955	4.3	42
85	Stainless steel weld metal designed to mitigate residual stresses. *Science and Technology of Welding and Joining*, **2009**, 14, 559-565	3.7	41
84	The evolution of solutions: A thermodynamic analysis of mechanical alloying. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **1997**, 28, 2189-2194	2.3	41

83	Cementite. *International Materials Reviews*, **2020**, 65, 1-27	16.1	41
82	Coupled diffusional/displacive transformations: Part II. Solute trapping. *Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science*, **1990**, 21, 805-809		39
81	Non-equilibrium solidification and ferrite in TRIP steel. *Materials Science and Technology*, **2010**, 26, 817-823	1.5	38
80	Duplex Hardening of Steels for Aeroengine Bearings. *ISIJ International*, **2012**, 52, 1927-1934	1.7	37
79	Divorced pearlite in steels. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2012**, 468, 2767-2778	2.4	36
78	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	3.7	36
77	Heat transfer coefficients during quenching of steels. *Heat and Mass Transfer*, **2011**, 47, 315-321	2.2	35
76	Extraordinary ductility in Al-bearing TRIP steel. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2011**, 467, 234-243	2.4	34
75	Acicular ferrite morphologies in a medium-carbon microalloyed steel. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2001**, 32, 2187-2197	2.3	33
74	Diffusional Transformations: A Theory for the Formation of Superledges. *Physica Status Solidi A*, **1982**, 69, 745-750		32
73	A model for austenitisation of hypoeutectoid steels. *Journal of Materials Science*, **2003**, 38, 1195-1201	4.3	31
72	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	3.7	31
71	Carbon in cubic and tetragonal ferrite. *Philosophical Magazine*, **2013**, 93, 3714-3725	1.6	30
70	Bainite orientation in plastically deformed austenite. *International Journal of Materials Research*, **2009**, 100, 40-45	0.5	30
69	Topology of grain deformation. *Materials Science and Technology*, **1998**, 14, 832-834	1.5	30
68	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	2.4	29
67	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		28
66	Dry rolling/sliding wear of nanostructured pearlite. *Materials Science and Technology*, **2015**, 31, 1735-1744	1.5	27

65	The bainite transformation in chemically heterogeneous 300M high-strength steel. *Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science*, **1990**, 21, 859-875		27
64	Mixed diffusion-controlled growth of pearlite in binary steel. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2011**, 467, 508-521	2.4	26
63	Spot weldability of TRIP assisted steels with high carbon and aluminium contents. *Science and Technology of Welding and Joining*, **2012**, 17, 92-98	3.7	26
62	Strength of Ferritic Steels: Neural Networks and Genetic Programming. *Materials and Manufacturing Processes*, **2008**, 24, 10-15	4.1	26
61	Bearing steel microstructures after aircraft gas turbine engine service. *Materials Science and Technology*, **2014**, 30, 1911-1918	1.5	25
60	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	3.7	25
59	Surface Relief Due to Bainite Transformation at 473 K (200 ℃). *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2011**, 42, 3344-3348	2.3	25
58	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	2.3	23
57	Modeling M6C precipitation in niobium-alloyed ferritic stainless steel. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2002**, 33, 3339-3347	2.3	23
56	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	3.7	23
55	Macrosegregation and Microstructural Evolution in a Pressure-Vessel Steel. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2014**, 45, 2983-2997	2.3	21
54	Surface residual stresses in multipass welds produced using low transformation temperature filler alloys. *Science and Technology of Welding and Joining*, **2014**, 19, 623-630	3.7	21
53	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	3.7	21
52	Stress-affected transformation to lower bainite. *Journal of Materials Science*, **1996**, 31, 2145-2148	4.3	21
51	Diffusion-controlled growth of pearlite in ternary steels. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2011**, 467, 2948-2961	2.4	20
50	Calculation of crystallographic texture due to displacive transformations. *International Journal of Materials Research*, **2008**, 99, 342-346	0.5	20
49	Tempering of Low-Temperature Bainite. *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2017**, 48, 3410-3418	2.3	19
48	Modelling coarsening behaviour of TiC precipitates in high strength, low alloy steels. *Materials Science and Technology*, **2013**, 29, 1074-1079	1.5	19

47	Spot weldability of TRIP steel containing 0.4 wt-%C. *Science and Technology of Welding and Joining*, **2010**, 15, 619-624	3.7	19
46	Effects of weld preheat temperature and heat input on type IV failure. *Science and Technology of Welding and Joining*, **2009**, 14, 436-442	3.7	19
45	Nonuniform recrystallization in a mechanically alloyed nickel-base superalloy. *Metallurgical and Materials Transactions A - Physical Metallurgy and Materials Science*, **1993**, 24, 1049-1055		19
44	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	1.5	18
43	Influence of Deformation on Recrystallization of an Yttrium Oxide Dispersion-Strengthened Iron Alloy (PM2000). *Advanced Engineering Materials*, **2003**, 5, 232-237	3.5	18
42	An aspect of the nucleation of burst martensite. *Journal of Materials Science*, **1982**, 17, 383-386	4.3	18
41	Ausforming of medium carbon steel. *Materials Science and Technology*, **2015**, 31, 436-442	1.5	16
40	The Effect of a Two-Stage Heat-Treatment on the Microstructural and Mechanical Properties of a Maraging Steel. *Materials*, **2017**, 10,	3.5	16
39	Very Short and Very Long Heat Treatments in the Processing of Steel. *Materials and Manufacturing Processes*, **2010**, 25, 1-6	4.1	16
38	Transformation texture of allotriomorphic ferrite in steel. *Materials Science and Technology*, **2009**, 25, 892-895	1.5	15
37	The microstructure of submerged arc-weld deposits for high-strength steels. *Journal of Materials Science*, **1989**, 24, 3180-3188	4.3	14
36	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	2.3	13
35	Crystallographic texture and the austenite grain structure of low-alloy steel weld deposits. *Journal of Materials Science Letters*, **1991**, 10, 142-144		13
34	Harnessing the scientific synergy of welding and additive manufacturing. *Science and Technology of Welding and Joining*, **2019**, 24, 361-366	3.7	12
33	Analysis of toughness of welding alloys for high strength low alloy shipbuilding steels. *Science and Technology of Welding and Joining*, **2001**, 6, 368-374	3.7	12
32	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		12
31	Elucidating white-etching matter through high-strain rate tensile testing. *Materials Science and Technology*, **2017**, 33, 307-310	1.5	11
30	Spheroidisation of hypereutectoid state of nanostructured bainitic steel. *Materials Science and Technology*, **2014**, 30, 1282-1286	1.5	11

29	Toughness anisotropy in X70 and X80 linepipe steels. *Materials Science and Technology*, **2014**, 30, 439-446	1.5	10
28	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		10
27	Strength and toughness of clean nanostructured bainite. *Materials Science and Technology*, **2017**, 33, 1171-1179	1.5	8
26	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	2.3	8
25	A Commentary on: Diffusion of Carbon in Austenite with a Discontinuity in Composition *Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science*, **2010**, 41, 1605-1615	2.3	8
24	Tensile behaviour of thermally-stable nanocrystalline bainitic-steels. *Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing*, **2019**, 746, 145-153	5.3	7
23	Solution to the Bagaryatskii and Isaichev ferrite–cementite orientation relationship problem. *Materials Science and Technology*, **2018**, 34, 1666-1668	1.5	7
22	Atom probe and STEM studies of carbide precipitation in 2Cr1Mo steel. *Applied Surface Science*, **1993**, 67, 334-341	6.7	7
21	Modelling of size distribution of blocky retained austenite in Si-containing bainitic steels. *Materials Science and Technology*, **2018**, 34, 54-62	1.5	6
20	Austenite formation in 9Cr–1Mo type power plant steels. *Science and Technology of Welding and Joining*, **1997**, 2, 36-42	3.7	6
19	Effect of manganese sulphide particle shape on the pinning of grain boundary. *Materials Science and Technology*, **2017**, 33, 1013-1018	1.5	5
18	Modelling of transition from upper to lower bainite in multi-component system. *Materials Science and Technology*, **2017**, 33, 430-437	1.5	5
17	Atomic Mechanism of the Bainite Transformation. *HTM - Journal of Heat Treatment and Materials*, **2017**, 72, 340-345	0.7	5
16	Designing steel to resist hydrogen embrittlement Part 2 – precipitate characterisation. *Materials Science and Technology*, **2018**, 34, 1747-1758	1.5	4
15	Critical Assessment 34: Are (Hägg), and ? carbides transition-phases relative to cementite in steels?. *Materials Science and Technology*, **2019**, 35, 1301-1305	1.5	4
14	Comments on Determination of Ms temperature: methods, meaning and influence of slow start phenomenon by T. Sourmail and V. Smanio. *Materials Science and Technology*, **2013**, 29, 889-889	1.5	4
13	Bruscato factor in temper embrittlement of welds. *Science and Technology of Welding and Joining*, **2000**, 5, 338-340	3.7	4
12	Intermetallic-strengthened nanocrystalline bainitic steel. *Materials Science and Technology*, **2018**, 34, 1976-1979	1.5	3

11	Model for multiple stress affected martensitic transformations, microstructural entropy and consequences on scatter in properties. *Materials Science and Technology*, **2014**, 30, 160-165	1.5	3
10	Shear band structure in ballistically tested bainitic steels. *Materials Science and Technology*, **2014**, 30, 812-817	1.5	3
9	Elongation of Irradiated Steels. *Materials and Manufacturing Processes*, **2009**, 24, 130-137	4.1	3
8	First-principles calculations of elastic constants for epsilon-carbide and the consequences. *Materials Science and Technology*, **2020**, 36, 615-622	1.5	2
7	Melt-spinning and semi-solid processing of bainitic steel. *Materials Science and Technology*, **2017**, 33, 870-878	1.5	2
6	Mössbauer Analysis of Low-Temperature Bainite. *AIP Conference Proceedings*, **2005**,	0	2
5	The estimation of non-uniform elongation in low-alloy steel weld deposits. *Journal of Materials Science*, **1990**, 25, 613-618	4.3	1
4	Analysis of toughness of welding alloys for high strength low alloy shipbuilding steels		1
3	Austenite formation in 9Cr–1Mo type power plant steels		1
2	The austenite grain structure of low-alloy steel weld deposits **1986**, 21, 3947		1
1	A Commentary on: "Diffusion of Carbon in Austenite with a Discontinuity in Composition" *Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science*, **2010**, 41, 741-751	2.5	