Hisao Matsunaga

List of Publications by Year
in descending order

96 papers	1,849 citations	218677 26 h-index	276875 41 g-index
96 all docs	96 docs citations	96 times ranked	670 citing authors

#	Article	IF	Citations
1	Dual roles of pearlite microstructure to interfere/facilitate gaseous hydrogen-assisted fatigue crack growth in plain carbon steels. International Journal of Fatigue, 2022, 154, 106561.	5.7	20
2	Fatigue crack-growth retardation after overloading in gaseous hydrogen: Revisiting the effect of hydrogen on crack-tip plastic-zone development. Materials Letters, 2022, 308, 131115.	2.6	2
3	Effects of Ni Concentration and Aging Heat Treatment on the Hydrogen Embrittlement Behavior of Precipitation-Hardened High-Mn Austenitic Steel. Tetsu-To-Hagane/Journal of the Iron and Steel Institute of Japan, 2022, 108, 156-172.	0.4	0
4	Transition mechanism of cycle- to time-dependent acceleration of fatigue crack-growth in 0.4Â%C Cr-Mo steel in a pressurized gaseous hydrogen environment. International Journal of Fatigue, 2022, 163, 107039.	5.7	14
5	Pearlite-driven surface-cracking and associated loss of tensile ductility in plain-carbon steels under exposure to high-pressure gaseous hydrogen. International Journal of Hydrogen Energy, 2021, 46, 6945-6959.	7.1	27
6	Mechanism of hydrogen-induced hardening in pure nickel and in a copperâ€“nickel alloy analyzed by micro Vickers hardness testing. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 805, 140580.	5.6	10
7	Internal and External Hydrogen-related Loss of Ductility in a Ni-based Superalloy 718 and Its Temperature Dependence. Tetsu-To-Hagane/Journal of the Iron and Steel Institute of Japan, 2021, 107, .	0.4	1
8	Essential structure of S-N curve: Prediction of fatigue life and fatigue limit of defective materials and nature of scatter. International Journal of Fatigue, 2021, 146, 106138.	5.7	126
9	Fatigue limit of Ni-based superalloy 718 relative to the shear-mode crack-growth threshold: A quantitative evaluation considering the influence of crack-opening and -closing stresses. International Journal of Fatigue, 2021, 148, 106228.	5.7	5
10	Unforeseen, negative interaction-effect of adjacent circumferential notches on the fatigue limit of Ni-based superalloy 718. Engineering Fracture Mechanics, 2021, 257, 108015.	4.3	2
11	Fracture mechanicsâ€based criteria for fatigue fracture of rolling bearings under the influence of defects. Fatigue and Fracture of Engineering Materials and Structures, 2021, 44, 952-966.	3.4	4
12	Essential Structure of <i>S-N</i> Curve and the Essence of Scatter of Fatigue Life. Zairyo/Journal of the Society of Materials Science, Japan, 2021, 70, 881-888.	0.2	3
13	Analysis on Fatigue Life and its Scatter of Specimens Containing Small Artificial Defects with Various Sizes Based on the Essential Structure of <i>S-N</i> Curve. Zairyo/Journal of the Society of Materials Science, Japan, 2021, 70, 889-895.	0.2	2
14	Dynamic improvement of fatigue strength via local phase transformation in a circumferentially-notched austenitic stainless steel under fully-reversed loading condition. Scripta Materialia, 2020, 176, 126-130.	5.2	3
15	Hydrogen, as an alloying element, enables a greater strength-ductility balance in an Fe-Cr-Ni-based, stable austenitic stainless steel. Acta Materialia, 2020, 199, 181-192.	7.9	44
16	Inability of precipitation-hardening to improve the fatigue limit of Ni-based superalloy 718 through a perspective of shear-mode cracking threshold. Materials Letters, 2020, 277, 128377.	2.6	6
17	A mechanism behind hydrogen-assisted fatigue crack growth in ferrite-pearlite steel focusing on its behavior in gaseous environment at elevated temperature. Corrosion Science, 2020, 168, 108558.	6.6	23
18	Hydrogen-assisted fatigue crack-propagation in a Ni-based superalloy 718, revealed via crack-path crystallography and deformation microstructures. Corrosion Science, 2020, 174, 108814.	6.6	24

#	Article	IF	Citations
19	Defect tolerance and hydrogen susceptibility of the fatigue limit of an additively manufactured Ni-based superalloy 718. International Journal of Fatigue, 2020, 139, 105740.	5.7	24
20	Quantitative Characterization of the Spatial Distribution of Corrosion Pits Based on Nearest Neighbor Analysis. Corrosion, 2020, 76, 861-870.	1.1	4
21	Effect of impact velocity and impact angle on residual stress fields caused by foreign object damage. Strain, 2020, 56, e12367.	2.4	6
22	Hydrogen-assisted, intergranular, fatigue crack-growth in ferritic iron: Influences of hydrogen-gas pressure and temperature variation. International Journal of Fatigue, 2020, 140, 105806.	5.7	28
23	The influence of interacting small defects on the fatigue limits of a pure iron and a bearing steel. International Journal of Fatigue, 2020, 135, 105560.	5.7	20
24	Hydrogen distribution of hydrogen-charged nickel analyzed via hardness test and secondary ion mass spectrometry. International Journal of Hydrogen Energy, 2020, 45, 9188-9199.	7.1	5
25	Rotating Bending Fatigue Property of SCM435 during Electrochemical Hydrogen Charging. Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals, 2020, 84, 92-98.	0.4	1
26	Comparative study of hydrogen-induced intergranular fracture behavior in Ni and Cuâ€“Ni alloy at ambient and cryogenic temperatures. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 766, 138349.	5.6	30
27	Visualization of trapped hydrogen along grain boundaries and its quantitative contribution to hydrogen-induced intergranular fracture in pure nickel. Materialia, 2019, 8, 100478.	2.7	22
28	Simulation of the effect of internal pressure on the integrity of hydrogen pre-charged BCC and FCC steels in SSRT test conditions. Engineering Fracture Mechanics, 2019, 216, 106505.	4.3	5
29	Evaluation of fatigue life and fatigue limit of circumferentially-notched Type 304 stainless steel in air and hydrogen gas based on crack-growth property and cyclic stress-strain response. Engineering Fracture Mechanics, 2019, 215, 164-177.	4.3	10
30	Role of Hydrogen-Charging on Nucleation and Growth of Ductile Damage in Austenitic Stainless Steels. Materials, 2019, 12, 1426.	2.9	8
31	Hydrogen-assisted crack propagation in Î±-iron during elasto-plastic fracture toughness tests. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 756, 396-404.	5.6	19
32	Effect of defects on the fatigue limit of Niâ€based superalloy 718 with different grain sizes. Fatigue and Fracture of Engineering Materials and Structures, 2019, 42, 1203-1213.	3.4	32
33	Pronounced transition of crack initiation and propagation modes in the hydrogen-related failure of a Ni-based superalloy 718 under internal and external hydrogen conditions. Corrosion Science, 2019, 161, 108186.	6.6	45
34	Effect of defects and hydrogen on the fatigue limit of Ni-based superalloy 718. Procedia Structural Integrity, 2019, 19, 312-319.	0.8	1
35	Micro-scale frictional behavior of a bearing steel (JIS SUJ2) in cyclic sliding motion. Procedia Structural Integrity, 2019, 19, 320-327.	0.8	1
36	Hydrogen-induced ductility loss of precipitation-strengthened Fe-Ni-Cr-based superalloy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2019, 739, 335-342.	5.6	30

#	Article	IF	Citations
37	Quantitative evaluation of the flaking strength of rolling bearings with small defects as a crack problem. International Journal of Fatigue, 2019, 119, 195-203.	5.7	5
38	The Ductility Loss Mechanism of a Precipitation-hardened Iron-based Superalloy A286 with Internal Hydrogen. The Proceedings of the Materials and Mechanics Conference, 2019, 2019, OS0609.	0.0	0
39	SSRT and fatigue life properties of austenitic stainless steel weld metal 317L in high-pressure hydrogen gas. Transactions of the JSME (in Japanese), 2018, 84, 17-00437-17-00437.	0.2	1
40	Assessment of the contribution of internal pressure to the structural damage in a hydrogen-charged Type 316L austenitic stainless steel during slow strain rate tensile test. Procedia Structural Integrity, 2018, 13, 1615-1619.	0.8	1
41	Methods of Material Testing in High-Pressure Hydrogen Environment and Evaluation of Hydrogen Compatibility of Metallic Materials: Current Status in Japan. , 2018, , .		1
42	Hydrogen-Entry Properties of Torsional Prestrained Carbon Steels. Zairyo/Journal of the Society of Materials Science, Japan, 2018, 67, 723-729.	0.2	0
43	Fatigue limit of carbon and Cr Mo steels as a small fatigue crack threshold in high-pressure hydrogen gas. International Journal of Hydrogen Energy, 2018, 43, 20133-20142.	7.1	32
44	Strength properties of aluminum alloys in 115 MPa hydrogen gas. Transactions of the JSME (in) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 46	0.2	3
45	Interpretation of hydrogen-assisted fatigue crack propagation in BCC iron based on dislocation structure evolution around the crack wake. Acta Materialia, 2018, 156, 245-253.	7.9	88
46	The roles of internal and external hydrogen in the deformation and fracture processes at the fatigue crack tip zone of metastable austenitic stainless steels. Scripta Materialia, 2018, 157, 95-99.	5.2	45
47	The role of intergranular fracture on hydrogen-assisted fatigue crack propagation in pure iron at a low stress intensity range. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2018, 733, 316-328.	5.6	53
48	Peculiar temperature dependence of hydrogen-enhanced fatigue crack growth of low-carbon steel in gaseous hydrogen. Scripta Materialia, 2018, 154, 101-105.	5.2	22
49	Hydrogen diffusivity and tensile-ductility loss of solution-treated austenitic stainless steels with external and internal hydrogen. International Journal of Hydrogen Energy, 2017, 42, 13289-13299.	7.1	89
50	Hydrogen trapping and fatigue crack growth property of low-carbon steel in hydrogen-gas environment. International Journal of Fatigue, 2017, 102, 202-213.	5.7	42
51	Hydrogen-enhanced fatigue crack growth in steels and its frequency dependence. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20160412.	3.4	17
52	Material performance of age-hardened berylliumâ€"copper alloy, CDA-C17200, in a high-pressure, gaseous hydrogen environment. International Journal of Hydrogen Energy, 2017, 42, 16887-16900.	7.1	22
53	Comprehensive Understanding of Ductility Loss Mechanisms in Various Steels with External and Internal Hydrogen. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 5717-5732.	2.2	37
54	Multi-scale observation of hydrogen-induced, localized plastic deformation in fatigue-crack propagation in a pure iron. Scripta Materialia, 2017, 140, 13-17.	5.2	68

#	Article	IF	Citations
55	Fatigue Crack Threshold of Bearing Steel at a Very Low Stress Ratio. Procedia Structural Integrity, 2017, 7, 391-398.	0.8	6
56	Quantitative Evaluation of the Flaking Strength of Rolling Bearings with Small Defects. Procedia Structural Integrity, 2017, 7, 453-459.	0.8	0
57	Quantitative Evaluation of the Flaking Strength of Rolling Bearings with Small Defects. Procedia Structural Integrity, 2017, 7, 460-467.	0.8	0
58	A Case Study of a Cooling Pipe for a Pre-Cooler Used in a 70-MPa Hydrogen Station. , 2017, , .		0
59	Case study on cooling pipe of pre-cooler used for verification test of 70 MPa hydrogen station. Transactions of the JSME (in Japanese), 2017, 83, 16-00459-16-00459.	0.2	2
60	Effect of small defect on the flaking strength of rolling bearings (Part 2: Evaluation of the flaking) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 5 of the JSME (in Japanese), 2017, 83, 16-00585-16-00585.	0.2	0
61	Various strength properties of SCM435 and SNCM439 low-alloy steels in 115 MPa hydrogen gas and proposal of design guideline. Transactions of the JSME (in Japanese), 2017, 83, 17-00264-17-00264.	0.2	19
62	Excellent Resistance to Hydrogen Embrittlement of High-Strength Copper-Based Alloy. , 2017, , .		0
63	Effect of small defect on the flaking strength of rolling bearings (Part 1: FEM analyses of stress) Tj ETQq1 1 0.784314 rgBT /Overlock 10 2017, 83, 16-00584-16-00584.	0.2	0
64	Multi-scale analysis of hydrogen-enhanced fatigue crack propagation in a pure iron. The Proceedings of the Materials and Mechanics Conference, 2017, 2017, OS1806.	0.0	0
65	Effect of Test Frequency on Hydrogen-Enhanced Fatigue Crack Growth in Type 304 Stainless Steel and Ductile Cast Iron. , 2016, , .		2
66	Fatigue Life Properties and Anomalous Macroscopic Fatigue Fracture Surfaces of Low Carbon Steel JIS-SM490B in High-Pressure Hydrogen Gas Environment. , 2016, , .		0
67	Effects of hydrogen pressure, test frequency and test temperature on fatigue crack growth properties of low-carbon steel in gaseous hydrogen. Procedia Structural Integrity, 2016, 2, 525-532.	0.8	29
68	The effect of interacting small defects on the fatigue limit of a medium carbon steel. Procedia Structural Integrity, 2016, 2, 3322-3329.	0.8	3
69	Determination of hydrogen compatibility for solution-treated austenitic stainless steels based on a newly proposed nickel-equivalent equation. International Journal of Hydrogen Energy, 2016, 41, 15095-15100.	7.1	36
70	SSRT properties of austenitic stainless steel weld metals in hydrogen gas at ï¼45 Â°C and 106 MPa. Transactions of the JSME (in Japanese), 2016, 82, 16-00109-16-00109.	0.2	2
71	High-strength copper-based alloy with excellent resistance to hydrogen embrittlement. International Journal of Hydrogen Energy, 2016, 41, 15089-15094.	7.1	17
72	Criteria for determining hydrogen compatibility and the mechanisms for hydrogen-assisted, surface crack growth in austenitic stainless steels. Engineering Fracture Mechanics, 2016, 153, 103-127.	4.3	90

#	Article	IF	Citations
73	Pressure Cycle Testing of Crâ€“Mo Steel Pressure Vessels Subjected to Gaseous Hydrogen. Journal of Pressure Vessel Technology, Transactions of the ASME, 2016, 138, .	0.6	29
74	Strength Design Method of Components used in High-pressure Hydrogen gas in Consideration of Safety and Economy. Yosetsu Gakkai Shi/Journal of the Japan Welding Society, 2016, 85, 332-336.	0.1	2
75	Effect of Hydrogen on Fatigue Properties of Metals. Green Energy and Technology, 2016, , 411-425.	0.6	0
76	Proposal of Design Method Enabling Cr-Mo Steels to be Used in High-Pressure Hydrogen Gas Environment. Hyomen Kagaku, 2015, 36, 562-567.	0.0	1
77	Hydrogen-Assisted Cracking of Cr-Mo Steel in Slow Strain Rate Tensile Test With High-Pressure Gaseous Hydrogen. , 2015, , .		1
78	Slow strain rate tensile and fatigue properties of Crâ€“Mo and carbon steels in a 115ÂMPa hydrogen gas atmosphere. International Journal of Hydrogen Energy, 2015, 40, 5739-5748.	7.1	119
79	Qualification of chromiumâ€“molybdenum steel based on the safety factor multiplier method in CHMC1-2014. International Journal of Hydrogen Energy, 2015, 40, 719-728.	7.1	43
80	A practical expression for evaluating the small shear-mode fatigue crack threshold in bearing steel. Theoretical and Applied Fracture Mechanics, 2014, 73, 161-169.	4.7	29
81	Ductility Loss in Ductile Cast Iron with Internal Hydrogen. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 1315-1326.	2.2	12
82	Effect of Size and Depth of Small Defect on the Rolling Contact Fatigue Strength of Bearing Steel JIS-SUJ2. , 2014, 3, 1663-1668.		15
83	Effects of hydrogen gas pressure and test frequency on fatigue crack growth properties of low carbon steel in 0.1-90 MPa hydrogen gas. Transactions of the JSME (in Japanese), 2014, 80, SMM0254-SMM0254.	0.2	27
84	Finite element modeling of plasticity-induced crack closure due to occasional mode II loading on mode I fatigue crack growth. Engineering Fracture Mechanics, 2013, 111, 38-49.	4.3	8
85	Effect of Size and Depth of Small Defect on the Rolling Contact Fatigue Strength of a Bearing Steel SUJ2. Nihon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A, 2013, 79, 961-975.	0.2	11
86	Visualization of Hydrogen Diffusion in a Hydrogen-Enhanced Fatigue Crack Growth in Type 304 Stainless Steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2011, 42, 2696-2705.	2.2	33
87	Shear Mode Growth and Threshold of Small Fatigue Cracks in SUJ2 Bearing Steel. Zairyo/Journal of the Society of Materials Science, Japan, 2009, 58, 773-780.	0.2	16
88	OS4-6-2 Hydrogen emission and martensitic transformation in the vicinity of fatigue cracks in hydrogen-charged type 304 stainless steel. The Abstracts of ATEM International Conference on Advanced Technology in Experimental Mechanics Asian Conference on Experimental Mechanics, 2007, 2007.6, _OS4-6-2-1-_OS4-6-2-6.	0.0	0
89	Effects of Hydrogen Charge on Fatigue Strength of Stainless Steels. Nihon Kikai Gakkai Ronbunshu, A Hen/Transactions of the Japan Society of Mechanical Engineers, Part A, 2006, 72, 106-113.	0.2	7
90	The effect of hydrogen on fatigue properties of steels used for fuel cell system. International Journal of Fatigue, 2006, 28, 1509-1520.	5.7	115

#	Article	IF	Citations
91	Fatigue Strength of Ti-6Al-4V Alloys Containing Small Artificial Defects. Zairyo/Journal of the Society of Materials Science, Japan, 2003, 52, 263-269.	0.2	13
92	Effect of .DELTA. Ferrite on Fatigue Strength of SUS630 Stainless Steel.. Zairyo/Journal of the Society of Materials Science, Japan, 2002, 51, 215-220.	0.2	8
93	Effect of FOD on Fatigue Strength of Ti-6Al-4V Alloy.. Zairyo/Journal of the Society of Materials Science, Japan, 2002, 51, 1259-1266.	0.2	7
94	Effects of Small Defects on Fatigue Strength of T1-6A1-4V Alloy(Fatigue 1). Proceedings of the Asian Pacific Conference on Fracture and Strength and International Conference on Advanced Technology in Experimental Mechanics, 2001, 1.01.203, 366-371.	0.0	3
95	Fatigue. Effect of Statistical Distribution of Iron Powder Size on Fatigue Strength of Powder Metals.. Zairyo/Journal of the Society of Materials Science, Japan, 1999, 48, 1101-1106.	0.2	7
96	Microscopic Mechanism of Hydrogen Embrittlement in Fatigue and Fracture. Key Engineering Materials, 0, 592-593, 3-13.	0.4	4