Hitoshi Soyama

List of Publications by Year
in descending order

127	3,157	117453	182168
papers	citations	34 h-index	51 g-index

130	130	130	1229
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Comparison between the improvements made to the fatigue strength of stainless steel by cavitation peening, water jet peening, shot peening and laser peening. Journal of Materials Processing Technology, 2019, 269, 65-78.	3.1	127
2	Cavitation shotless peening for improvement of fatigue strength of carbonized steel. International Journal of Fatigue, 2003, 25, 1217-1222.	2.8	121
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	Improvement of Fatigue Strength of Aluminum Alloy by Cavitation Shotless Peening. Journal of Engineering Materials and Technology, Transactions of the ASME, 2002, 124, 135-139.	0.8	104
5	Effect of nozzle geometry on a standard cavitation erosion test using a cavitating jet. Wear, 2013, 297, 895-902.	1.5	78
6	Hydrodynamic Cavitation Reactor for Efficient Pretreatment of Lignocellulosic Biomass. Industrial & Engineering Chemistry Research, 2016, 55, 1866-1871.	1.8	76
7	Introduction of compressive residual stress into stainless steel by employing a cavitating jet in air. Surface and Coatings Technology, 2011, 205, 3167-3174.	2.2	75
8	Peening by the use of cavitation impacts for the improvement of fatigue strength. Journal of Materials Science Letters, 2001, 20, 1263-1265.	0.5	74
9	High-speed observation of ultrahigh-speed submerged water jets. Experimental Thermal and Fluid Science, 1996, 12, 411-416.	1.5	73
10	Use of Cavitating Jet for Introducing Compressive Residual Stress. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2000, 122, 83-89.	1.3	73
11	Pitting damage by pressure waves in a mercury target. Journal of Nuclear Materials, 2005, 343, 70-80.	1.3	72
12	Effect of compressive residual stress introduced by cavitation peening and shot peening on the improvement of fatigue strength of stainless steel. Journal of Materials Processing Technology, 2021, 288, 116877.	3.1	70
13	A New Calibration Method for Dynamically Loaded Transducers and Its Application to Cavitation Impact Measurement. Journal of Fluids Engineering, Transactions of the ASME, 1998, 120, 712-718.	0.8	69
14	Suppression of hydrogen-assisted fatigue crack growth in austenitic stainless steel by cavitation peening. International Journal of Hydrogen Energy, 2012, 37, 5268-5276.	3.8	69
15	Introduction of Compressive Residual Stress Using a Cavitating Jet in Air. Journal of Engineering Materials and Technology, Transactions of the ASME, 2004, 126, 123-128.	0.8	65
16	Cavitation Peening: A Review. Metals, 2020, 10, 270.	1.0	60
17	Enhancing the Aggressive Intensity of a Cavitating Jet by Means of the Nozzle Outlet Geometry. Journal of Fluids Engineering, Transactions of the ASME, 2011, 133, .	0.8	59
18	Comparison between cavitation peening and shot peening for extending the fatigue life of a duralumin plate with a hole. Journal of Materials Processing Technology, 2016, 227, 80-87.	3.1	56

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19	Numerical simulation of the effects of residual stress on the concentration of hydrogen around a crack tip. Surface and Coatings Technology, 2012, 206, 2892-2898.	2.2	55
20	Enhancing the aggressive intensity of hydrodynamic cavitation through a Venturi tube by increasing the pressure in the region where the bubbles collapse. AIP Advances, 2016, 6, .	0.6	54
21	High-Speed Observation of a Cavitating Jet in Air. Journal of Fluids Engineering, Transactions of the ASME, 2005, 127, 1095-1101.	0.8	53
22	High-Speed Observations of the Cavitation Cloud around a High-Speed Submerged Water Jet.. JSME International Journal Series B, 1995, 38, 245-251.	0.3	50
23	Suitable Region of High-Speed Submerged Water Jets for Cutting and Peening.. JSME International Journal Series B, 1995, 38, 31-38.	0.3	49
24	Fatigue strength improvement of gears using cavitation shotless peening. Tribology Letters, 2005, 18, 181-184.	1.2	45
25	Use of an Abrasive Water Cavitating Jet and Peening Process to Improve the Fatigue Strength of Titanium Alloy 6Al-4V Manufactured by the Electron Beam Powder Bed Melting (EBPB) Additive Manufacturing Method. Jom, 2019, 71, 4311-4318.	0.9	44
26	Compressive Residual Stress into Titanium Alloy Using Cavitation Shotless Peening Method. Tribology Letters, 2004, 17, 501-504.	1.2	43
27	Improvement of fatigue strength by using cavitating jets in air and water. Journal of Materials Science, 2007, 42, 6638-6641.	1.7	43
28	The use of various peening methods to improve the fatigue strength of titanium alloy Ti6Al4V manufactured by electron beam melting. AIMS Materials Science, 2018, 5, 1000-1015.	0.7	43
29	Cavitating Jet: A Review. Applied Sciences (Switzerland), 2020, 10, 7280.	1.3	41
30	Effect of Various Peening Methods on the Fatigue Properties of Titanium Alloy Ti6Al4V Manufactured by Direct Metal Laser Sintering and Electron Beam Melting. Materials, 2020, 13, 2216.	1.3	40
31	Sustainable surface modification using cavitation impact for enhancing fatigue strength demonstrated by a power circulating-type gear tester. International Journal of Sustainable Engineering, 2010, 3, 25-32.	1.9	39
32	Two-step method to evaluate equibiaxial residual stress of metal surface based on micro-indentation tests. Materials & Design, 2011, 32, 3240-3247.	5.1	39
33	Improving the fatigue strength of the elements of a steel belt for CVT by cavitation shotless peening. Journal of Materials Science, 2008, 43, 5028-5030.	1.7	37
34	Mechanical Surface Treatments of AISI 304 Stainless Steel: Effects on Surface Microrelief, Residual Stress, and Microstructure. Journal of Materials Engineering and Performance, 2019, 28, 5307-5322.	1.2	37
35	Depth-profiling of residual stress and microstructure for austenitic stainless steel surface treated by cavitation, shot and laser peening. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2021, 813, 141037.	2.6	36
36	The Fundamental Threshold Levelâ€”a New Parameter for Predicting Cavitation Erosion Resistance. Journal of Testing and Evaluation, 2002, 30, 421-431.	0.4	34

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37	Luminescence intensity of vortex cavitation in a Venturi tube changing with cavitation number. Ultrasonics Sonochemistry, 2021, 71, 105389.	3.8	33
38	Similarity Law on Shedding Frequency of Cavitation Cloud Induced by a Cavitating Jet. Journal of Fluid Science and Technology, 2012, 7, 405-420.	0.2	32
39	Development of peening technique using recirculating shot accelerated by water jet. Materials Science and Technology, 2012, 28, 234-239.	0.8	32
40	Electricity Generation from Rice Bran by a Microbial Fuel Cell and the Influence of Hydrodynamic Cavitation Pretreatment. ACS Omega, 2018, 3, 15267-15271.	1.6	32
41	Increase in the local yield stress near surface of austenitic stainless steel due to invasion by hydrogen. International Journal of Hydrogen Energy, 2014, 39, 6095-6103.	3.8	31
42	Improvement in Fatigue Strength of Silicon Manganese Steel SUP7 by Using a Cavitating Jet.. JSME International Journal Series A-Solid Mechanics and Material Engineering, 2000, 43, 173-178.	0.4	30
43	Enhancing the aggressive intensity of a cavitating jet by introducing a cavitator and a guide pipe. Journal of Fluid Science and Technology, 2014, 9, JFST0001-JFST0001.	0.2	30
44	Effect of the impact energy of various peening techniques on the induced plastic deformation region. Journal of Materials Processing Technology, 2012, 212, 1998-2006.	3.1	29
45	Enhancing the Aggressive Strength of a Cavitating Jet and Its Practical Application. Journal of Fluid Science and Technology, 2011, 6, 510-521.	0.2	27
46	Evaluation of the enhanced cavitation impact energy using a PVDF transducer with an acrylic resin backing. Measurement: Journal of the International Measurement Confederation, 2011, 44, 1279-1283.	2.5	26
47	Relieving micro-strain by introducing macro-strain in a polycrystalline metal surface by cavitation shotless peening. Materials Letters, 2008, 62, 3564-3566.	1.3	25
48	Estimation of Incubation Time of Cavitation Erosion for Various Cavitating Conditions. Tribology Letters, 2004, 17, 27-30.	1.2	24
49	Optimization of cavitation peening parameters for fatigue performance of carburized steel using Taguchi methods. Journal of Materials Processing Technology, 2006, 178, 234-240.	3.1	20
50	Surface mechanics design of metallic materials on mechanical surface treatments. Mechanical Engineering Reviews, 2015, 2, 14-00192-14-00192.	4.7	20
51	Estimation of aggressive intensity of a cavitating jet with multiple experimental methods. Wear, 2018, 394-395, 176-186.	1.5	20
52	Comparison between Shot Peening, Cavitation Peening, and Laser Peening by Observation of Crack Initiation and Crack Growth in Stainless Steel. Metals, 2020, 10, 63.	1.0	20
53	Improvement of the corrosion resistance of a carbon steel surface by a cavitating jet. Journal of Materials Science Letters, 1999, 18, 1953-1955.	0.5	19
54	Growth and proliferation of bone marrow mesenchymal stem cells affected by type I collagen, fibronectin and bFGF. Materials Science and Engineering C, 2008, 28, 1467-1471.	3.8	19

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55	Using an indentation test to evaluate the effect of cavitation peening on the invasion of the surface of austenitic stainless steel by hydrogen. Surface and Coatings Technology, 2012, 206, 3747-3750.	2.2	19
56	Using cavitation peening to enhance the fatigue strength of duralumin plate containing a hole with rounded edges. Surface and Coatings Technology, 2016, 307, 200-205.	2.2	18
57	Fretting Fatigue Behavior of Cavitation Shotless Peened Tiâ€“6Alâ€“4V. Tribology Letters, 2009, 36, 89-94.	1.2	17
58	A biological switch at the ocean surface as a cause of laminations in a Precambrian iron formation. Earth and Planetary Science Letters, 2016, 446, 27-36.	1.8	17
59	Cavitation Shotless Peening for Surface Modification of Alloy Tool Steel. JSME International Journal Series A-Solid Mechanics and Material Engineering, 2003, 46, 398-402.	0.4	16
60	Evaluation of the surface of alloy tool steel treated by cavitation shotless peening using an eddy current method. Surface and Coatings Technology, 2009, 203, 2254-2259.	2.2	16
61	Laser Cavitation Peening and Its Application for Improving the Fatigue Strength of Welded Parts. Metals, 2021, 11, 531.	1.0	16
62	Contactless measurement of electrical conductivity of Si wafers independent of wafer thickness. Applied Physics Letters, 2005, 87, 162102.	1.5	14
63	Development of a nanostructural microwave probe based on GaAs. Microsystem Technologies, 2008, 14, 1021-1025.	1.2	14
64	Suppression of fatigue crack propagation with hydrogen embrittlement in stainless steel by cavitation peening. Strength, Fracture and Complexity, 2011, 7, 79-85.	0.2	14
65	Estimation of pitting damage induced by cavitation impacts. Journal of Nuclear Materials, 2005, 343, 116-122.	1.3	13
66	A microwave probe nanostructure for atomic force microscopy. Microsystem Technologies, 2009, 15, 1195-1199.	1.2	13
67	Estimation of the depth of surface modification layer induced by cavitation peening. Journal of Materials Processing Technology, 2012, 212, 1716-1722.	3.1	13
68	Evaluation of the effectiveness of back-side damage gettering in silicon introduced by a cavitating jet. Applied Physics Letters, 2004, 85, 3935-3937.	1.5	12
69	The effect of scanning pitch of nozzle for a cavitating jet during overlapping peening treatment. Surface and Coatings Technology, 2012, 206, 4756-4762.	2.2	12
70	Analysis of the formation of plastic deformation layer on the surface of polycrystalline metals subjected to a micro-size high-rate shot impact. International Journal of Mechanical Sciences, 2013, 75, 316-323.	3.6	12
71	Effect of Cavitation Peening on Fatigue Properties in Friction Stir Welded Aluminum Alloy AA5754. Metals, 2021, 11, 59.	1.0	12
72	Useful Correlations for Cavitating Water Jet.. Review of High Pressure Science and Technology/Koatsuryoku No Kagaku To Gijutsu, 1998, 7, 1456-1458.	0.1	11

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73	Fabrication of the Tip of GaAs Microwave Probe by Wet Etching. , 2005, , 1919.		11
74	Improvement of the Fatigue Strength of Stainless Steel SUS316L by a Cavitating Jet with an Associated Water Jet in Water. ISIJ International, 2008, 48, 1577-1581.	0.6	11
75	Evaluation of Equibiaxial Compressive Stress Introduced into Austenitic Stainless Steel Using an Eddy Current Method. Journal of Nondestructive Evaluation, 2012, 31, 99-107.	1.1	11
76	Optimization of Residual Stress Measurement Conditions for a 2D Method Using X-ray Diffraction and Its Application for Stainless Steel Treated by Laser Cavitation Peening. Materials, 2021, 14, 2772.	1.3	11
77	Technique for partially strengthening electrical steel sheet of IPM motor using cavitation peening. Materials Science and Technology, 2011, 27, 1422-1426.	0.8	10
78	Removal of Oral Biofilm on an Implant Fixture by a Cavitating Jet. Implant Dentistry, 2017, 26, 904-910.	1.7	10
79	Corrosion Behavior of Pressure Vessel Steel Exposed to Residual Bubbles After Cavitation Bubble Collapse. Corrosion, 2011, 67, 025001-1-025001-8.	0.5	9
80	Effect of heat treatment on the cavitation erosion resistance of stainless steel. Materials and Corrosion - Werkstoffe Und Korrosion, 2018, 69, 536-544.	0.8	9
81	Effect of an Extract from Evening-Primrose Seeds on Postprandial Blood Glucose Level and Its Active Components. Journal of the Japanese Society for Food Science and Technology, 2003, 50, 180-187.	0.1	8
82	Estimation of cavitation intensity from the time taken for bubbles to develop. Tribology Letters, 2006, 23, 23-26.	1.2	8
83	Enhancing the durability of spinal implant fixture applications made of Ti-6Al-4V ELI by means of cavitation peening. International Journal of Fatigue, 2016, 92, 360-367.	2.8	8
84	Surface integrity of heat treatable magnesium alloy AZ80A after cavitation peening. Journal of Materials Research and Technology, 2022, 17, 2098-2107.	2.6	8
85	Oxidation-Induced Stacking Faults Introduced by Using a Cavitating Jet for Gettering in Silicon. Electrochemical and Solid-State Letters, 1999, 3, 93.	2.2	7
86	Fatigue Strength of Steel Rollers and Gears Treated by Cavitation Peening with Short Processing Time (A Case of Processing Time of 1 min and 5 min). Journal of Advanced Mechanical Design, Systems and Manufacturing, 2012, 6, 33-43.	0.3	7
87	Back Side Damage Gettering of Cu Using a Cavitating Jet. Electrochemical and Solid-State Letters, 2004, 7, G51.	2.2	6
88	Fabrication of a GaAs Microwave Probe Used for Atomic Force Microscope. , 2007, , .		6
89	Experimental verification of the hydrogen concentration around a crack tip using spot X-ray diffraction. International Journal of Hydrogen Energy, 2016, 41, 23188-23195.	3.8	6
90	Recrystallization-etch observation of plastic deformation caused by cavitation shotless peening. Journal of Materials Science Letters, 2003, 22, 115-117.	0.5	5

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91	A Study on Peening by Submerged Ultra-High-Speed Water-Jets. Fluid Mechanics and Its Applications, 1992, , 413-424.	0.1	5
92	Fracture Mechanics. Improvement of Residual Stress in Stainless Steel by Cavitating Jet.. Zairyo/Journal of the Society of Materials Science, Japan, 1998, 47, 808-812.	0.1	5
93	Improvement of Fatigue Strength of Stainless Steel by Using a Cavitating Jet with an Associated Water Jet in Water. Key Engineering Materials, 2007, 353-358, 162-165.	0.4	4
94	Using an eddy current method with inverse analysis to determine the thickness of the layer modified by cavitation peening at the surface of type 316 L austenitic stainless steel. NDT and E International, 2012, 46, 94-99.	1.7	4
95	Surface mechanics design by cavitation peening. Journal of Engineering, 2015, 2015, 110-114.	0.6	4
96	Effect of Mechanical Properties on Fatigue Life Enhancement of Additive Manufactured Titanium Alloy Treated by Various Peening Methods. Lecture Notes in Mechanical Engineering, 2020, , 88-96.	0.3	4
97	Mechanical Surface Treatment of Duralumin Plate by Bubble Induced by Pulse Laser. Journal of Physics: Conference Series, 2015, 656, 012108.	0.3	3
98	Effect of Cavitation Number on the Improvement of Fatigue Strength of Carburized Steel Using Cavitation Shotless Peening. Key Engineering Materials, 2004, 261-263, 1245-1250.	0.4	2
99	Effect of Indentation Load on Vickers Hardness of Austenitic Stainless Steel After Hydrogen Charging. , 2014, , .		2
100	Preventing hydrogen embrittlement in stainless steel by means of compressive stress induced by cavitation peening. Journal of Engineering, 2015, 2015, 106-109.	0.6	2
101	Suppression of Fatigue Crack Propagation of Duralumin by Cavitation Peening. Journal of Engineering, 2015, 2015, 126-128.	0.6	2
102	Improvement of Fatigue Strength of Additive Manufactured Metals by Solid-Liquid-Gas Interfacial Phenomena Induced by Pulse Laser. IOP Conference Series: Materials Science and Engineering, 2019, 611, 012002.	0.3	2
103	Enhancement of an aggressive intensity of a cavitating jet by water flow holes near nozzle outlet. Transactions of the JSME (in Japanese), 2019, 85, 19-00280-19-00280.	0.1	2
104	Introduction of Compressive Residual Stress into Titanium Alloy Ti6Al4V by Cavitaion Shotless Peening. Zairyo/Journal of the Society of Materials Science, Japan, 2004, 53, 836-840.	0.1	2
105	Quantitative Evaluation of Closed Cracks on the Surface of Stainless Steel by Microwaves. Zairyo/Journal of the Society of Materials Science, Japan, 2004, 53, 900-905.	0.1	2
106	High-Speed Stereo-Observations of Violent Vibrations Associated with Three Types of Cavitation.. JSME International Journal Series B, 1995, 38, 66-72.	0.3	1
107	Jet Structure Analyses on High-Speed Submerged Water Jets through Cavitation Noises.. JSME International Journal Series B, 1996, 39, 568-574.	0.3	1
108	Surface Modification of Materials by Using a Cavitating Jet. Zairyo To Kankyo/ Corrosion Engineering, 2000, 49, 332-336.	0.0	1

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109	Microdefects induced by cavitation for gettering in silicon wafer. Journal of Materials Science, 2006, 41, 5380-5382.	1.7	1
110	Suppression of Fatigue Crack Growth in Austenite Stainless Steel by Cavitation Peening. Key Engineering Materials, 0, 452-453, 641-644.	0.4	1
111	Luminescent Spots Induced by a Cavitating Jet. , 2011, , .		1
112	Title is missing!. Zairyo/Journal of the Society of Materials Science, Japan, 2004, 53, 826-832.	0.1	1
113	Fundamentals and Applications of Cavitation Peening Comparing with Shot Peening and Laser Peening. Lecture Notes in Mechanical Engineering, 2020, , 76-87.	0.3	1
114	Marked Change in Subcavitation-Cascade Performance Resulting from a Very Slight Modification in Leading Edges.. JSME International Journal Series B, 1993, 36, 524-531.	0.3	0
115	Base-Vented Performance Simulation for Supercavitating Hydrofoils with Pseudo-Kirchhoff Noses Operating within the Subcavitating Region.. JSME International Journal Series B, 1995, 38, 258-264.	0.3	0
116	Evaluation of the Damage for Gettering in Silicon Wafer Introduced by a Cavitating Jet. Key Engineering Materials, 2004, 261-263, 1403-1408.	0.4	0
117	Gettering of Cu in Silicon Wafer by Using Cavitation Impacts. Key Engineering Materials, 2004, 261-263, 1409-1414.	0.4	0
118	Contactless measurement of conductivity of silicon wafers by millimeter waves. , 0, , .		0
119	Characterization of Defects for Effective Gettering in Silicon Wafer and Polysilicon Thin Films. , 2006, , 963.		0
120	Quantitative Evaluation of Cracks under Water by Microwaves. Key Engineering Materials, 2007, 353-358, 2361-2365.	0.4	0
121	Molecular beam epitaxial growth and characterization of defects induced by cavitation impacts on polysilicon thin films. Journal of Physics: Conference Series, 2007, 61, 750-754.	0.3	0
122	INTRODUCTION OF MACRO-STRAIN WITH RELEASING MICRO-STRAIN BY CAVITATION SHOTLESS PEENING. International Journal of Modern Physics B, 2008, 22, 1680-1685.	1.0	0
123	A nanostructual microwave probe used for atomic force microscope. , 2008, , .		0
124	Effect of Hydrogen on the Micro- and Macro-Strain near the Surface of Austenitic Stainless Steel. Advanced Materials Research, 0, 936, 1298-1302.	0.3	0
125	Effect of load current density during the production of Cu2O/Cu solar cells by anodic oxidation on film quality and output power. Solid-State Electronics, 2014, 91, 130-136.	0.8	0
126	Cavitation shotless peening effects on fatigue crack growth behaviour under bending loads. Material Design and Processing Communications, 2019, , e88.	0.5	0

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127	Effect of Bubble Radius on Ability of Submerged Laser Peening. Lecture Notes in Mechanical Engineering, 2020, , 283-291.	0.3	0