

# Seok Su Sohn

## List of Publications by Year in descending order

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114  
papers

4,655  
citations

109264

35  
h-index

114418

63  
g-index

116  
all docs

116  
docs citations

116  
times ranked

2698  
citing authors

#	ARTICLE	IF	CITATIONS
1	Understanding the physical metallurgy of the CoCrFeMnNi high-entropy alloy: an atomistic simulation study. <i>Npj Computational Materials</i> , 2018, 4, .	3.5	501
2	Ultrastrong Medium-Entropy Single-Phase Alloys Designed via Severe Lattice Distortion. <i>Advanced Materials</i> , 2019, 31, e1807142.	11.1	301
3	Cryogenic strength improvement by utilizing room-temperature deformation twinning in a partially recrystallized VCrMnFeCoNi high-entropy alloy. <i>Nature Communications</i> , 2017, 8, 15719.	5.8	278
4	Effects of Mn and Al contents on cryogenic-temperature tensile and Charpy impact properties in four austenitic high-Mn steels. <i>Acta Materialia</i> , 2015, 100, 39-52.	3.8	194
5	Exceptional phase-transformation strengthening of ferrous medium-entropy alloys at cryogenic temperatures. <i>Acta Materialia</i> , 2018, 161, 388-399.	3.8	174
6	Novel ferrite-austenite duplex lightweight steel with 77% ductility by transformation induced plasticity and twinning induced plasticity mechanisms. <i>Acta Materialia</i> , 2014, 78, 181-189.	3.8	140
7	Novel ultra-high-strength (ferrite + austenite) duplex lightweight steels achieved by fine dislocation substructures (Taylor lattices), grain refinement, and partial recrystallization. <i>Acta Materialia</i> , 2015, 96, 301-310.	3.8	135
8	A strong and ductile medium-entropy alloy resists hydrogen embrittlement and corrosion. <i>Nature Communications</i> , 2020, 11, 3081.	5.8	116
9	Novel medium-Mn (austenite+martensite) duplex hot-rolled steel achieving 1.6 GPa strength with 20 % ductility by Mn-segregation-induced TRIP mechanism. <i>Acta Materialia</i> , 2018, 147, 247-260.	3.8	114
10	Novel ultra-high-strength Cu-containing medium-Mn duplex lightweight steels. <i>Acta Materialia</i> , 2017, 135, 215-225.	3.8	100
11	Ultrastrong duplex high-entropy alloy with 2 GPa cryogenic strength enabled by an accelerated martensitic transformation. <i>Scripta Materialia</i> , 2019, 171, 67-72.	2.6	76
12	FCC to BCC transformation-induced plasticity based on thermodynamic phase stability in novel V10Cr10Fe45Co <sub>x</sub> Ni35 <sup>x</sup> medium-entropy alloys. <i>Scientific Reports</i> , 2019, 9, 2948.	1.6	71
13	Shear band-driven precipitate dispersion for ultrastrong ductile medium-entropy alloys. <i>Nature Communications</i> , 2021, 12, 4703.	5.8	70
14	Effects of martensite-austenite constituent on crack initiation and propagation in inter-critical heat-affected zone of high-strength low-alloy (HSLA) steel. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 715, 332-339.	2.6	67
15	Effects of Mn Addition on Tensile and Charpy Impact Properties in Austenitic Fe-Mn-C-Al-Based Steels for Cryogenic Applications. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2014, 45, 5419-5430.	1.1	59
16	Quasi-static and dynamic deformation mechanisms interpreted by microstructural evolution in TWinning Induced Plasticity (TWIP) steel. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 684, 54-63.	2.6	59
17	Cryogenic-temperature fracture toughness analysis of non-equi-atomic V10Cr10Fe45Co20Ni15 high-entropy alloy. <i>Journal of Alloys and Compounds</i> , 2019, 809, 151864.	2.8	57
18	High-rate superplasticity in an equiatomic medium-entropy VCoNi alloy enabled through dynamic recrystallization of a duplex microstructure of ordered phases. <i>Acta Materialia</i> , 2020, 194, 106-117.	3.8	57

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19	Microstructural evolution of liquid metal embrittlement in resistance-spot-welded galvanized TWIP steel sheets. <i>Materials Characterization</i> , 2019, 147, 233-241.	1.9	54
20	Effects of Ni and Mn addition on critical crack tip opening displacement (CTOD) of weld-simulated heat-affected zones of three high-strength low-alloy (HSLA) steels. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 697, 55-65.	2.6	52
21	Cu addition effects on TRIP to TWIP transition and tensile property improvement of ultra-high-strength austenitic high-Mn steels. <i>Acta Materialia</i> , 2019, 166, 246-260.	3.8	50
22	Role of brittle sigma phase in cryogenic-temperature-strength improvement of non-equi-atomic Fe-rich VCrMnFeCoNi high entropy alloys. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 724, 403-410.	2.6	49
23	Novel 1.5 GPa-strength with 50%-ductility by transformation-induced plasticity of non-recrystallized austenite in duplex steels. <i>Scientific Reports</i> , 2017, 7, 1255.	1.6	48
24	Reversible dislocation movement, martensitic transformation and nano-twinning during elastic cyclic loading of a metastable high entropy alloy. <i>Acta Materialia</i> , 2020, 185, 474-492.	3.8	48
25	Effects of deformation-induced BCC martensitic transformation and twinning on impact toughness and dynamic tensile response in metastable VCrFeCoNi high entropy alloy. <i>Journal of Alloys and Compounds</i> , 2019, 785, 1056-1067.	2.8	46
26	Effects of solid solution and grain-boundary segregation of Mo on hydrogen embrittlement in 32MnB5 hot-stamping steels. <i>Acta Materialia</i> , 2021, 207, 116661.	3.8	44
27	Effects of microstructure and yield ratio on strain hardening and Bauschinger effect in two API X80 linepipe steels. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2012, 551, 192-199.	2.6	43
28	Effects of Nb and Mo alloying on resistance to hydrogen embrittlement in 1.9 GPa-grade hot-stamping steels. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 789, 139656.	2.6	43
29	Effect of Austenite Stability on Microstructural Evolution and Tensile Properties in Intercritically Annealed Medium-Mn Lightweight Steels. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2016, 47, 2674-2685.	1.1	41
30	Effects of transformation-induced plasticity (TRIP) on tensile property improvement of Fe <sub>45</sub> Co <sub>30</sub> Cr <sub>10</sub> V <sub>10</sub> Ni <sub>5-x</sub> Mn <sub>x</sub> high-entropy alloys. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 772, 138809.	2.6	41
31	Analysis of damage-tolerance of TRIP-assisted V <sub>10</sub> Cr <sub>10</sub> Fe <sub>45</sub> Co <sub>30</sub> Ni <sub>5</sub> high-entropy alloy at room and cryogenic temperatures. <i>Journal of Alloys and Compounds</i> , 2020, 844, 156090.	2.8	41
32	Interpretation of cryogenic-temperature Charpy fracture initiation and propagation energies by microstructural evolution occurring during dynamic compressive test of austenitic Fe-(0.4,1.0)C-18Mn steels. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015, 641, 340-347.	2.6	40
33	Dynamic compressive deformation behavior of SiC-particulate-reinforced A356 Al alloy matrix composites fabricated by liquid pressing process. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 680, 368-377.	2.6	40
34	Effects of Cu addition on resistance to hydrogen embrittlement in 1 GPa-grade duplex lightweight steels. <i>Acta Materialia</i> , 2020, 196, 370-383.	3.8	39
35	Key factors of stretch-flangeability of sheet materials. <i>Journal of Materials Science</i> , 2017, 52, 7808-7823.	1.7	38
36	Ultra-strong and strain-hardenable ultrafine-grained medium-entropy alloy via enhanced grain-boundary strengthening. <i>Materials Research Letters</i> , 2021, 9, 315-321.	4.1	38



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55	Effects of Al-Si coating structures on bendability and resistance to hydrogen embrittlement in 1.5-GPa-grade hot-press-forming steel. <i>Acta Materialia</i> , 2022, 225, 117561.	3.8	25
56	Effects of microstructure and pre-strain on Bauschinger effect in API X70 and X80 linepipe steels. <i>Metals and Materials International</i> , 2013, 19, 423-431.	1.8	24
57	Microstructural Developments and Tensile Properties of Lean Fe-Mn-Al-C Lightweight Steels. <i>Jom</i> , 2014, 66, 1857-1867.	0.9	24
58	Ultra-high strength and excellent ductility in multi-layer steel sheet of austenitic hadfield and martensitic hot-press-forming steels. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019, 759, 320-328.	2.6	24
59	Effects of Al addition on tensile properties of partially recrystallized austenitic TRIP/TWIP steels. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 806, 140823.	2.6	24
60	Tensile properties of cold-rolled TWIP-cored three-layer steel sheets. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 686, 160-167.	2.6	23
61	Effects of untransformed ferrite on Charpy impact toughness in 1.8-GPa-grade hot-press-forming steel sheets. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 707, 65-72.	2.6	23
62	Effect of tempering conditions on adiabatic shear banding during dynamic compression and ballistic impact tests of ultra-high-strength armor steel. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 792, 139818.	2.6	23
63	Effects of microstructure and pipe forming strain on yield strength before and after spiral pipe forming of API X70 and X80 linepipe steel sheets. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2013, 573, 18-26.	2.6	22
64	Effects of Oxides on Tensile and Charpy Impact Properties and Fracture Toughness in Heat Affected Zones of Oxide-Containing API X80 Linepipe Steels. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2014, 45, 3036-3050.	1.1	22
65	Austenite reversion through subzero transformation and tempering of a boron-doped strong and ductile medium-Mn lightweight steel. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 802, 140619.	2.6	22
66	Achievement of high yield strength and strain hardening rate by forming fine ferrite and dislocation substructures in duplex lightweight steel. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 704, 287-291.	2.6	21
67	Improvement of tensile properties in (austenite+ferrite+ $\hat{\text{I}}^{\text{c}}$ -carbide) triplex hot-rolled lightweight steels. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 730, 177-186.	2.6	21
68	Effects of Annealing Treatment Prior to Cold Rolling on the Edge Cracking Phenomenon of Ferritic Lightweight Steel. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2014, 45, 3844-3856.	1.1	20
69	Effects of deformation-induced martensitic transformation on cryogenic fracture toughness for metastable Si8V2Fe45Cr10Mn5Co30 high-entropy alloy. <i>Acta Materialia</i> , 2022, 225, 117568.	3.8	20
70	Effects of Annealing Treatment Prior to Cold Rolling on Delayed Fracture Properties in Ferrite-Austenite Duplex Lightweight Steels. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2016, 47, 706-717.	1.1	18
71	Characterization of twin-like structure in a ferrite-based lightweight steel. <i>Metals and Materials International</i> , 2016, 22, 810-816.	1.8	17
72	Role of retained austenite on adiabatic shear band formation during high strain rate loading in high-strength bainitic steels. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 778, 139118.	2.6	17

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73	Effects of local-brittle-zone (LBZ) microstructures on crack initiation and propagation in three Mo-added high-strength low-alloy (HSLA) steels. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019, 760, 125-133.	2.6	16
74	Effect of Mn Addition on Microstructural Modification and Cracking Behavior of Ferritic Light-Weight Steels. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2014, 45, 5469-5485.	1.1	15
75	Dynamic tensile behavior of twinning-induced plasticity/low-carbon (TWIP/LC) steel clad sheets bonded by hot rolling. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 700, 387-396.	2.6	15
76	Correlation of dynamic compressive properties, adiabatic shear banding, and ballistic performance of high-strength 2139 and 7056 aluminum alloys. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 804, 140757.	2.6	15
77	The microstructure evolution and room temperature deformation behavior of ferrite-based lightweight steel. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016, 665, 10-16.	2.6	14
78	Body-centered-cubic martensite and the role on room-temperature tensile properties in Si-added SiVCrMnFeCo high-entropy alloys. <i>Journal of Materials Science and Technology</i> , 2021, 76, 222-230.	5.6	14
79	Effects of Nb or (Nb+Mo) alloying on Charpy impact, bending, and delayed fracture properties in 1.9-GPa-grade press hardening steels. <i>Materials Characterization</i> , 2021, 176, 111133.	1.9	13
80	On the fatigue and dwell-fatigue behavior of a low-density steel and the correlated microstructure origin of damage mechanism. <i>Journal of Materials Research and Technology</i> , 2021, 15, 6136-6154.	2.6	13
81	Novel twin-roll-cast Ti/Al clad sheets with excellent tensile properties. <i>Scientific Reports</i> , 2017, 7, 8110.	1.6	12
82	Interpretation of dynamic tensile behavior by austenite stability in ferrite-austenite duplex lightweight steels. <i>Scientific Reports</i> , 2017, 7, 15726.	1.6	12
83	Exceptional combination of ultra-high strength and excellent ductility by inevitably generated Mn-segregation in austenitic steel. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2018, 737, 69-76.	2.6	12
84	Enhancement of ballistic performance enabled by transformation-induced plasticity in high-strength bainitic steel. <i>Journal of Materials Science and Technology</i> , 2021, 84, 219-229.	5.6	12
85	Computational design of V-CoCrFeMnNi high-entropy alloys: An atomistic simulation study. <i>Calphad: Computer Coupling of Phase Diagrams and Thermochemistry</i> , 2021, 74, 102317.	0.7	12
86	Effects of Cr and Nb addition on high-temperature tensile properties in austenitic cast steels used for turbo-charger application. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016, 677, 316-324.	2.6	11
87	Study of Bauschinger effect of acicular ferrite and polygonal ferrite through ex-situ interrupted bending tests in API X80 linepipe steels. <i>Scientific Reports</i> , 2018, 8, 15598.	1.6	11
88	Analysis and estimation of the yield strength of API X70 and X80 linepipe steels by double-cycle simulation tests. <i>Metals and Materials International</i> , 2013, 19, 377-388.	1.8	10
89	Adiabatic shear banding and cracking phenomena occurring during cold-forging simulation tests of plain carbon steel wire rods by using a split Hopkinson's pressure bar. <i>Metals and Materials International</i> , 2015, 21, 991-999.	1.8	10
90	Three-Ply Al/Mg/Al Clad Sheets Fabricated by Twin-Roll Casting and Post-treatments (Homogenization,) <i>Materials Science</i> , 2017, 48, 57-62.	1.1	10

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91	Suppression of adiabatic shear band formation by martensitic transformation of retained austenite during split Hopkinson pressure bar test for a high-strength bainitic steel. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 814, 141127.	2.6	10
92	Effects of Cu addition on formability and surface delamination phenomenon in high-strength high-Mn steels. <i>Journal of Materials Science and Technology</i> , 2020, 43, 44-51.	5.6	9
93	Overcoming strength-ductility trade-off via subzero martensitic transformation in medium-Mn lightweight steel. <i>Scripta Materialia</i> , 2022, 210, 114477.	2.6	9
94	Effect of Strain-Induced Age Hardening on Yield Strength Improvement in Ferrite-Austenite Duplex Lightweight Steels. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2016, 47, 5372-5382.	1.1	8
95	Dynamic strain aging and twin formation during warm deformation of a novel medium-entropy lightweight steel. <i>Journal of Materials Research and Technology</i> , 2022, 17, 1628-1641.	2.6	8
96	Ultrasonic nanocrystal surface modification for strength improvement and suppression of hydrogen permeation in multi-layered steel. <i>Journal of Alloys and Compounds</i> , 2021, 885, 160975.	2.8	7
97	Effects of granular bainite and polygonal ferrite on yield point phenomenon in API X65 line-pipe steels. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2022, 840, 143006.	2.6	7
98	Dynamic tensile deformation behavior of Zr-based amorphous alloy matrix composites reinforced with tungsten or tantalum fibers. <i>Metals and Materials International</i> , 2016, 22, 707-713.	1.8	6
99	Simulation of Pipe-Manufacturing Processes Using Sheet Bending-Flattening. <i>Experimental Mechanics</i> , 2018, 58, 909-918.	1.1	6
100	Analysis and estimation of yield strength of API X80 linepipe steel pipe by low-cycle fatigue tests. <i>Metals and Materials International</i> , 2012, 18, 597-606.	1.8	5
101	Effects of temperature and loading rate on phase stability and deformation mechanism in metastable V10Cr10Co30FexNi50-x high entropy alloys. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 804, 140766.	2.6	5
102	Excellent strength-ductility combination of multi-layered sheets composed of high-strength V10Cr10Fe50Co30 high entropy alloy and 304 austenitic stainless steel. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 823, 141727.	2.6	5
103	Effects of Mn Segregations on Intergranular Fracture in a Medium-Mn Low-Density Steel. <i>Steel Research International</i> , 2023, 94, .	1.0	5
104	In Situ fracture observation and fracture toughness analysis of pearlitic graphite cast irons with different nodularity. <i>Metals and Materials International</i> , 2013, 19, 673-682.	1.8	4
105	Interpretation of high-temperature tensile properties by thermodynamically calculated equilibrium phase diagrams of heat-resistant austenitic cast steels. <i>Metals and Materials International</i> , 2017, 23, 43-53.	1.8	4
106	Strength-ductility enhancement in multi-layered sheet with high-entropy alloy and high-Mn twinning-induced plasticity steel. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 822, 141670.	2.6	4
107	Effects of granular bainite and polygonal ferrite on yield strength anisotropy in API X65 linepipe steel. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2022, 843, 143151.	2.6	4
108	Effects of Cr Reduction on High-Temperature Strength of High-Ni Austenitic Cast Steels Used for High-Performance Turbo-chargers. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2018, 49, 4604-4614.	1.1	3

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109	Effects of V or Cu Addition on High-Temperature Tensile Properties of High-Ni-Containing Austenitic Cast Steels Used for High-Performance Turbo-Charger Housings. <i>Metals and Materials International</i> , 2019, 25, 285-294.	1.8	3
110	Effects of finish rolling temperature and yield ratio on variations in yield strength after pipe-forming of API-X65 line-pipe steels. <i>Scientific Reports</i> , 2020, 10, 14742.	1.6	3
111	Strong resistance to hydrogen embrittlement via surface shielding in multi-layered austenite/martensite steel sheets. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2021, 800, 140319.	2.6	3
112	Interpretation of surficial shear crack propagation mechanisms in bending for Zn or AlSi coated hot press forming steels. <i>Scientific Reports</i> , 2021, 11, 11428.	1.6	2
113	Effect of Intercritical Heat Treatment on J-R Fracture Resistance of SA508 Gr.1A Low-Alloy Steels. <i>Metals and Materials International</i> , 0, , .	1.8	2
114	Enhancement of ballistic performance enabled by boron-doping in subzero-treated (ferrite+austenite+martensite) triplex lightweight steel. <i>Materials Characterization</i> , 2022, 190, 112021.	1.9	2