

Jun-Sang Park

List of Publications by Year in descending order

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papers

2,474
citations

186265

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233421

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101
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101
docs citations

101
times ranked

2100
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#	ARTICLE	IF	CITATIONS
1	4D evolution of Cr ₂₃ C ₆ precipitates in neutron-irradiated and annealed HT-UPS steel observed via synchrotron micro-computed tomography. <i>Journal of Materials Research</i> , 2022, 37, 208-224.	2.6	0
2	Developing ductile and isotropic Ti alloy with tailored composition for laser powder bed fusion. <i>Additive Manufacturing</i> , 2022, 52, 102656.	3.0	3
3	A study on texture stability and the biaxial creep behavior of as-hydrided CWSR Zircaloy-4 cladding at the effective stresses from 55MPa to 65MPa and temperatures from 300°C to 400°C. <i>Journal of Nuclear Materials</i> , 2022, 564, 153688.	2.7	5
4	Time-resolved phase and compositional homogenization of segregated uranium-niobium alloys above the monotectoid temperature. <i>Journal of Nuclear Materials</i> , 2022, 564, 153673.	2.7	2
5	<i>BraggNN</i>: fast X-ray Bragg peak analysis using deep learning. <i>IUCr</i> , 2022, 9, 104-113.	2.2	19
6	A New Residual Strain Mapping Program Using Energy Dispersive X-Ray Diffraction at the Advanced Photon Source. <i>Experimental Mechanics</i> , 2022, 62, 1363-1379.	2.0	1
7	In situ synchrotron tensile investigations on ultrasonic additive manufactured (UAM) zirconium. <i>Journal of Nuclear Materials</i> , 2022, 568, 153843.	2.7	4
8	Elucidating the temperature dependence of TRIP in Q&P steels using synchrotron X-Ray diffraction, constituent phase properties, and strain-based kinetics models. <i>Acta Materialia</i> , 2022, 237, 118126.	7.9	14
9	In situ characterization of residual stress evolution during heat treatment of SiC/SiC ceramic matrix composites using high-energy X-ray diffraction. <i>Journal of the American Ceramic Society</i> , 2021, 104, 1424-1435.	3.8	7
10	Direct observations and characterization of crack closure during microstructurally small fatigue crack growth via in-situ high-energy X-ray characterization. <i>Acta Materialia</i> , 2021, 205, 116564.	7.9	33
11	Modeling Ti-6Al-4V using crystal plasticity, calibrated with multi-scale experiments, to understand the effect of the orientation and morphology of the β and β' phases on time dependent cyclic loading. <i>Journal of the Mechanics and Physics of Solids</i> , 2021, 146, 104192.	4.8	26
12	Status and prospect of in situ and operando characterization of solid-state batteries. <i>Energy and Environmental Science</i> , 2021, 14, 4672-4711.	30.8	44
13	Evaluating the Taylor hardening model in polycrystalline Ti using high energy X-ray diffraction microscopy. <i>Scripta Materialia</i> , 2021, 195, 113743.	5.2	6
14	Microstructure-Based Estimation of Strength and Ductility Distributions for $\alpha + \eta$ Titanium Alloys. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2021, 52, 2411-2434.	2.2	9
15	In situ high-energy X-ray study of deformation mechanisms in additively manufactured 316L stainless steel. <i>Journal of Nuclear Materials</i> , 2021, 549, 152874.	2.7	10
16	AFRL Additive Manufacturing Modeling Series: Challenge 4, In Situ Mechanical Test of an IN625 Sample with Concurrent High-Energy Diffraction Microscopy Characterization. <i>Integrating Materials and Manufacturing Innovation</i> , 2021, 10, 338-347.	2.6	12
17	Synchrotron x-ray diffraction and crystal plasticity modeling study of martensitic transformation, texture development, and stress partitioning in deep-drawn TRIP steels. <i>Materialia</i> , 2021, 18, 101162.	2.7	11
18	Origins of high ductility exhibited by an extruded magnesium alloy Mg-1.8Zn-0.2Ca: Experiments and crystal plasticity modeling. <i>Journal of Materials Science and Technology</i> , 2021, 84, 27-42.	10.7	39

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19	Repeatability and sensitivity characterization of the far-field high-energy diffraction microscopy instrument at the Advanced Photon Source. <i>Journal of Synchrotron Radiation</i> , 2021, 28, 1786-1800.	2.4	6
20	Transformative high entropy alloy conquers the strength-ductility paradigm by massive interface strengthening. <i>Scripta Materialia</i> , 2021, 203, 114070.	5.2	13
21	Deep learning approaches to semantic segmentation of fatigue cracking within cyclically loaded nickel superalloy. <i>Computational Materials Science</i> , 2021, 198, 110683.	3.0	11
22	Revealing the chemical environment of Cr, Fe, and Ni in high temperature-ultrafine precipitate strengthened steel subjected to low fluence neutron irradiation. <i>Journal of Nuclear Materials</i> , 2021, 554, 153056.	2.7	1
23	AFRL Additive Manufacturing Modeling Series: Challenge 1, Characterization of Residual Strain Distribution in Additively-Manufactured Metal Parts Using Energy-Dispersive Diffraction. <i>Integrating Materials and Manufacturing Innovation</i> , 2021, 10, 525.	2.6	2
24	ICME Approach to Determining Critical Pore Size of IN718 Produced by Selective Laser Melting. <i>Jom</i> , 2020, 72, 465-474.	1.9	17
25	Highly deformable Mg-Al-Ca alloy with Al ₂ Ca precipitates. <i>Acta Materialia</i> , 2020, 200, 236-245.	7.9	81
26	High-energy synchrotron x-ray study of deformation-induced martensitic transformation in a neutron-irradiated Type 316 stainless steel. <i>Acta Materialia</i> , 2020, 200, 315-327.	7.9	18
27	Precipitate Characterization in Model Al-Zn-Mg-(Cu) Alloys Using Small-Angle X-ray Scattering. <i>Metals</i> , 2020, 10, 959.	2.3	7
28	Void coalescence and ductile failure in IN718 investigated via high-energy synchrotron X-ray tomography and diffraction. <i>Journal of the Mechanics and Physics of Solids</i> , 2020, 145, 104155.	4.8	13
29	A complete grain-level assessment of the stress-strain evolution and associated deformation response in polycrystalline alloys. <i>Acta Materialia</i> , 2020, 201, 36-54.	7.9	27
30	High-energy X-ray phase analysis of CMAS-infiltrated 7YSZ thermal barrier coatings: Effect of time and temperature. <i>Journal of Materials Research</i> , 2020, 35, 2300-2310.	2.6	6
31	Synchrotron Imaging of Pore Formation in Li Metal Solid-State Batteries Aided by Machine Learning. <i>ACS Applied Energy Materials</i> , 2020, 3, 9534-9542.	5.1	75
32	Strain rate sensitivity, microstructure variations, and stress-assisted $\beta \rightarrow \alpha'$ phase transformation investigation on the mechanical behavior of dual-phase titanium alloys. <i>Materials Characterization</i> , 2020, 166, 110410.	4.4	20
33	Effects of heat treatment and build orientation on the evolution of β and α' martensite and strength during compressive loading of additively manufactured 304L stainless steel. <i>Acta Materialia</i> , 2020, 195, 59-70.	7.9	29
34	Effect of heat treatment on the tensile behavior of selective laser melted Ti-6Al-4V by in situ X-ray characterization. <i>Acta Materialia</i> , 2020, 189, 93-104.	7.9	88
35	Tensile behavior and microstructural evolution of a Fe-25Ni-20Cr austenitic stainless steel (alloy 709) from room to elevated temperatures through in-situ synchrotron X-ray diffraction characterization and transmission electron microscopy. <i>Journal of Nuclear Materials</i> , 2020, 540, 152367.	2.7	6
36	Comparison of thermally cycled PS-PVD and EB-PVD thermal barrier coatings' depth-resolved monoclinic phase evolution via synchrotron X-ray diffraction. , 2020, , .		0

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37	In situ high energy X-ray diffraction measurement of strain and dislocation density ahead of crack tips grown in hydrogen. Acta Materialia, 2019, 180, 272-286.	7.9	33
38	A Planar Biaxial Experiment Platform for In Situ High-Energy Diffraction Studies. Experimental Mechanics, 2019, 59, 749-774.	2.0	9
39	On the measurement of dislocations and dislocation substructures using EBSD and HRSD techniques. Acta Materialia, 2019, 175, 297-313.	7.9	128
40	Phase retrieval for Bragg coherent diffraction imaging at high x-ray energies. Physical Review A, 2019, 99, .	2.5	15
41	Intermittent plasticity in individual grains: A study using high energy x-ray diffraction. Structural Dynamics, 2019, 6, 014501.	2.3	19
42	Microstructure Development of 308L Stainless Steel During Additive Manufacturing. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2019, 50, 2538-2553.	2.2	17
43	Residual Strain Analysis in Linear Friction Welds of Similar and Dissimilar Titanium Alloys Using Energy Dispersive X-ray Diffraction. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2019, 50, 704-718.	2.2	5
44	Precision lattice parameter determination from transmission diffraction of thick specimens with irregular cross sections. Journal of Applied Crystallography, 2019, 52, 40-46.	4.5	7
45	Data management and processing workflow for the Materials Physics and Engineering group beamlines at the Advanced Photon Source. Journal of Synchrotron Radiation, 2019, 26, 373-381.	2.4	5
46	Comparison of Electron-Beam Physical Vapor Deposition and Plasma-Spray Physical Vapor Deposition Thermal Barrier Coating Properties Using Synchrotron X-Ray Diffraction. , 2019, , .		2
47	Synchrotron XRD Measurements of Thermal Barrier Coating Configurations With Rare Earth Elements for Phosphor Thermometry. , 2019, , .		0
48	Determining the strengths of HCP slip systems using harmonic analyses of lattice strain distributions. Acta Materialia, 2018, 144, 92-106.	7.9	42
49	Analyzing shear band formation with high resolution X-ray diffraction. Acta Materialia, 2018, 147, 133-148.	7.9	22
50	Role of heat treatment and build orientation in the microstructure sensitive deformation characteristics of IN718 produced via SLM additive manufacturing. Additive Manufacturing, 2018, 22, 479-496.	3.0	58
51	Sparse recovery of undersampled intensity patterns for coherent diffraction imaging at high X-ray energies. Scientific Reports, 2018, 8, 4959.	3.3	24
52	Correlation of precipitate evolution with Vickers hardness in Haynes® 282® superalloy: In-situ high-energy SAXS/WAXS investigation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2018, 711, 250-258.	5.6	18
53	In situ high-energy X-ray diffraction mapping of shear band propagation in medium-Mn transformation-induced plasticity steels. Materials Research Letters, 2018, 6, 662-667.	8.7	28
54	Non-Destructive Characterization of Subsurface Residual Stress Fields and Correlation with Microstructural Conditions in a Shot-Peened Inconel Component. Experimental Mechanics, 2018, 58, 1389-1406.	2.0	2

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55	Study of slip activity in a Mg-Y alloy by in situ high energy X-ray diffraction microscopy and elastic viscoplastic self-consistent modeling. <i>Acta Materialia</i> , 2018, 155, 138-152.	7.9	90
56	High-energy x-ray diffraction microscopy study of deformation microstructures in neutron-irradiated polycrystalline Fe-9%Cr. <i>Journal of Nuclear Materials</i> , 2018, 508, 556-566.	2.7	7
57	In-situ high-energy X-ray characterization of neutron irradiated HT-UPS stainless steel under tensile deformation. <i>Acta Materialia</i> , 2018, 156, 330-341.	7.9	16
58	Microstructure Analysis of Bismuth Absorbers for Transition-Edge Sensor X-ray Microcalorimeters. <i>Journal of Low Temperature Physics</i> , 2018, 193, 225-230.	1.4	4
59	Demonstration of a chamber for strain mapping of steel specimens under mechanical load in a hydrogen environment by synchrotron radiation. <i>Review of Scientific Instruments</i> , 2018, 89, 063701.	1.3	3
60	Microstructure and Deformation Behavior of Thermally Aged Cast Austenitic Stainless Steels. <i>Minerals, Metals and Materials Series</i> , 2018, , 625-641.	0.4	1
61	Measurement of Residual Stresses in Different Thicknesses of Laser Shock Peened Aluminium Alloy Samples. , 2018, , .		4
62	In situ synchrotron investigation of grain growth behavior of nano-grained UO ₂ . <i>Scripta Materialia</i> , 2017, 131, 29-32.	5.2	16
63	A methodology to determine the elastic moduli of crystals by matching experimental and simulated lattice strain pole figures using discrete harmonics. <i>Acta Materialia</i> , 2017, 126, 469-480.	7.9	37
64	In situ high-energy X-ray diffraction study of tensile deformation of neutron-irradiated polycrystalline Fe-9%Cr alloy. <i>Acta Materialia</i> , 2017, 126, 67-76.	7.9	41
65	Influences of granular constraints and surface effects on the heterogeneity of elastic, superelastic, and plastic responses of polycrystalline shape memory alloys. <i>Journal of the Mechanics and Physics of Solids</i> , 2017, 102, 46-66.	4.8	38
66	iRadMat: A thermo-mechanical testing system for in situ high-energy X-ray characterization of radioactive specimens. <i>Review of Scientific Instruments</i> , 2017, 88, 015111.	1.3	14
67	Direct measurement of critical resolved shear stress of prismatic and basal slip in polycrystalline Ti using high energy X-ray diffraction microscopy. <i>Acta Materialia</i> , 2017, 132, 598-610.	7.9	146
68	In situ synchrotron X-ray diffraction study of hydrides in Zircaloy-4 during thermomechanical cycling. <i>Journal of Nuclear Materials</i> , 2017, 487, 247-259.	2.7	24
69	Validating a Model for Welding Induced Residual Stress Using High-Energy X-ray Diffraction. <i>Jom</i> , 2017, 69, 893-899.	1.9	10
70	Modeling slip system strength evolution in Ti-7Al informed by in-situ grain stress measurements. <i>Acta Materialia</i> , 2017, 128, 406-417.	7.9	97
71	Temperature effect of elastic anisotropy and internal strain development in advanced nanostructured alloys: An in-situ synchrotron X-ray investigation. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 692, 53-61.	5.6	7
72	Investigation of fatigue crack initiation from a non-metallic inclusion via high energy x-ray diffraction microscopy. <i>Acta Materialia</i> , 2017, 137, 71-84.	7.9	92

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73	Non-Destructive Characterization of Engineering Materials Using High-Energy X-rays at the Advanced Photon Source. <i>Synchrotron Radiation News</i> , 2017, 30, 9-16.	0.8	12
74	Bright x-rays reveal shifting deformation states and effects of the microstructure on the plastic deformation of crystalline materials. <i>Physical Review B</i> , 2017, 96, .	3.2	21
75	Eliminating the non-Gaussian spectral response of X-ray absorbers for transition-edge sensors. <i>Applied Physics Letters</i> , 2017, 111, .	3.3	33
76	Far-Field High-Energy Diffraction Microscopy: A Non-Destructive Tool for Characterizing the Microstructure and Micromechanical State of Polycrystalline Materials. <i>Microscopy Today</i> , 2017, 25, 36-45.	0.3	10
77	Non-Destructive Internal Lattice Strain Measurement Using High Energy Synchrotron Radiation. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , 2017, , 121-126.	0.5	3
78	Fiducial marker application method for position alignment of <i>in situ</i> multimodal X-ray experiments and reconstructions. <i>Journal of Applied Crystallography</i> , 2016, 49, 700-704.	4.5	26
79	Investigation of High-Energy Ion-Irradiated MA957 Using Synchrotron Radiation under In-Situ Tension. <i>Materials</i> , 2016, 9, 15.	2.9	9
80	In situ synchrotron tensile investigations on 14YWT, MA957, and 9-Cr ODS alloys. <i>Journal of Nuclear Materials</i> , 2016, 471, 289-298.	2.7	19
81	The comparison of microstructures and mechanical properties between 14Cr-Al and 14Cr-Ti ferritic ODS alloys. <i>Materials and Design</i> , 2016, 98, 61-67.	7.0	29
82	Determination of residual stress in a microtextured <i>±</i> titanium component using high-energy synchrotron X-rays. <i>Journal of Strain Analysis for Engineering Design</i> , 2016, 51, 358-374.	1.8	12
83	Characterization of neutron-irradiated HT-UPS steel by high-energy X-ray diffraction microscopy. <i>Journal of Nuclear Materials</i> , 2016, 471, 280-288.	2.7	10
84	Load-partitioning in an oxide dispersion-strengthened 310 steel at elevated temperatures. <i>Materials and Design</i> , 2016, 111, 622-630.	7.0	14
85	Study of grain-level deformation and residual stresses in Ti-7Al under combined bending and tension using high energy diffraction microscopy (HEDM). <i>International Journal of Solids and Structures</i> , 2016, 94-95, 35-49.	2.7	54
86	Effect of water on nanomechanics of bone is different between tension and compression. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2016, 57, 128-138.	3.1	44
87	High-energy synchrotron study of in-pile-irradiated ⁹⁹ Tc-Mo fuels. <i>Scripta Materialia</i> , 2016, 114, 146-150.	5.2	18
88	On the microstructure and strengthening mechanism in oxide dispersion-strengthened 316 steel: A coordinated electron microscopy, atom probe tomography and in situ synchrotron tensile investigation. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015, 639, 585-596.	5.6	48
89	High-energy synchrotron x-ray techniques for studying irradiated materials. <i>Journal of Materials Research</i> , 2015, 30, 1380-1391.	2.6	19
90	Mechanical twinning and detwinning in pure Ti during loading and unloading – An in situ high-energy X-ray diffraction microscopy study. <i>Scripta Materialia</i> , 2014, 92, 35-38.	5.2	38

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91	A computational framework for evaluating residual stress distributions from diffraction-based lattice strain data. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2013, 265, 120-135.	6.6	18
92	Quantifying Three-Dimensional Residual Stress Distributions Using Spatially-Resolved Diffraction Measurements and Finite Element Based Data Reduction. <i>Experimental Mechanics</i> , 2013, 53, 1491-1507.	2.0	23
93	A framework for generating synthetic diffraction images from deforming polycrystals using crystal-based finite element formulations. <i>Computational Materials Science</i> , 2013, 77, 456-466.	3.0	40
94	A method for measuring single-crystal elastic moduli using high-energy X-ray diffraction and a crystal-based finite element model. <i>Acta Materialia</i> , 2010, 58, 5806-5819.	7.9	34
95	Thermal and Electric Field-Dependent Evolution of Domain Structures in Polycrystalline BaTiO ₃ Using the 3D-XRD Technique. <i>Texture Stress and Microstructure</i> , 2010, 2010, 1-10.	0.3	7
96	Measuring Stress Distributions in Ti-6Al-4V Using Synchrotron X-Ray Diffraction. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2008, 39, 3120-3133.	2.2	50
97	Measuring and modeling distributions of stress state in deforming polycrystals. <i>Acta Materialia</i> , 2008, 56, 3927-3939.	7.9	53
98	Quantitative Stress Analysis of Recrystallized OFHC Cu Subject to Deformation In Situ. <i>Journal of Engineering Materials and Technology, Transactions of the ASME</i> , 2008, 130, .	1.4	13
99	A methodology for measuring in situ lattice strain of bulk polycrystalline material under cyclic load. <i>Review of Scientific Instruments</i> , 2007, 78, 023910.	1.3	13
100	Experimental measurement of lattice strain pole figures using synchrotron x rays. <i>Review of Scientific Instruments</i> , 2005, 76, 113903.	1.3	54