Ragnvald H Mathiesen

List of Publications by Year
in descending order

98 papers	3,463 citations	147726 31 h-index	143943 57 g-index
99 all docs	99 docs citations	99 times ranked	1987 citing authors

#	Article	IF	Citations
1	In situ observations of dendritic fragmentation due to local solute-enrichment during directional solidification of an aluminum alloy. Acta Materialia, 2007, 55, 4287-4292.	3.8	240
2	Microstructure evolution and mechanical behavior of a binary Alâ€“7Mg alloy processed by equal-channel angular pressing. Acta Materialia, 2015, 84, 42-54.	3.8	220
3	Time Resolved X-Ray Imaging of Dendritic Growth in Binary Alloys. Physical Review Letters, 1999, 83, 5062-5065.	2.9	219
4	A synchrotron X-ray radiography study of dendrite fragmentation induced by a pulsed electromagnetic field in an Alâ€“15Cu alloy. Acta Materialia, 2014, 70, 228-239.	3.8	174
5	Crystal fragmentation and columnar-to-equiaxed transitions in Al-Cu studied by synchrotron X-ray video microscopy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2006, 37, 2515-2524.	1.1	170
6	Revealing internal flow behaviour in arc welding and additive manufacturing of metals. Nature Communications, 2018, 9, 5414.	5.8	158
7	Time-resolved x-ray imaging of aluminum alloy solidification processes. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2002, 33, 613-623.	1.0	142
8	X-ray radiography observations of columnar dendritic growth and constitutional undercooling in an Alâ€“30wt%Cu alloy. Acta Materialia, 2005, 53, 947-956.	3.8	140
9	The real-time, high-resolution x-ray video microscopy of solidification in aluminum alloys. Jom, 2007, 59, 20-26.	0.9	123
10	Intergranular Corrosion of Copper-Containing AA6xxx AlMgSi Aluminum Alloys. Journal of the Electrochemical Society, 2008, 155, C550.	1.3	102
11	Heterogeneous nucleation and grain growth of inoculated aluminium alloys: An integrated study by in-situ X-radiography and numerical modelling. Acta Materialia, 2017, 140, 224-239.	3.8	102
12	The charge density of urea from synchrotron diffraction data. Acta Crystallographica Section A: Foundations and Advances, 2004, 60, 371-381.	0.3	87
13	Revealing the heterogeneous nucleation behavior of equiaxed grains of inoculated Al alloys during directional solidification. Acta Materialia, 2018, 149, 312-325.	3.8	87
14	On the interest of synchrotron X-ray imaging for the study of solidification in metallic alloys. Comptes Rendus Physique, 2012, 13, 237-245.	0.3	68
15	In-situ study of morphology and growth of primary Î±-Al(FeMnCr)Si intermetallics in an Al-Si alloy. Acta Materialia, 2017, 130, 1-9.	3.8	61
16	Achieve high ductility and strength in an Alâ€“Mg alloy by severe plastic deformation combined with inter-pass annealing. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2014, 598, 141-146.	2.6	60
17	Equiaxed dendritic solidification and grain refiner potency characterised through in situ X-radiography. Acta Materialia, 2015, 95, 83-89.	3.8	58
18	InÂSitu X-Ray Video Microscopy as a Tool in Solidification Science. Jom, 2012, 64, 76-82.	0.9	56

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19	L2 droplet interaction with Î±-Al during solidification of hypermonotectic Alâ€“8 wt.% Bi alloys. Acta Materialia, 2009, 57, 2887-2895.	3.8	54
20	Combined in situ X-ray radiographic observations and post-solidification metallographic characterisation of eutectic transformations in Alâ€“Cu alloy systems. Acta Materialia, 2013, 61, 4559-4571.	3.8	54
21	XRMON-GF: A novel facility for solidification of metallic alloys with in situ and time-resolved X-ray radiographic characterization in microgravity conditions. Journal of Crystal Growth, 2013, 374, 23-30.	0.7	50
22	Retrieval of three-dimensional spatial information from fast in situ two-dimensional synchrotron radiography of solidification microstructure evolution. Acta Materialia, 2014, 81, 241-247.	3.8	49
23	High ductility bulk nanostructured Alâ€“Mg binary alloy processed by equal channel angular pressing and inter-pass annealing. Scripta Materialia, 2015, 105, 22-25.	2.6	47
24	X-Ray Videomicroscopy Studies of Eutectic Al-Si Solidification in Al-Si-Cu. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2011, 42, 170-180.	1.1	42
25	In situ investigation of spinodal decomposition in hypermonotectic Alâ€“Bi and Alâ€“Biâ€“Zn alloys. New Journal of Physics, 2008, 10, 053001.	1.2	40
26	Compact x-ray microradiograph for in situ imaging of solidification processes: Bringing in situ x-ray micro-imaging from the synchrotron to the laboratory. Review of Scientific Instruments, 2011, 82, 105108.	0.6	39
27	Prominent role of multi-scale microstructural heterogeneities on superplastic deformation of a high solid solution Alâ€“7Mg alloy. International Journal of Plasticity, 2021, 146, 103108.	4.1	38
28	Î±-Mg primary phase formation and dendritic morphology transition in solidification of a Mg-Nd-Gd-Zn-Zr casting alloy. Acta Materialia, 2016, 116, 177-187.	3.8	36
29	Zernike phase contrast in high-energy x-ray transmission microscopy based on refractive optics. Ultramicroscopy, 2018, 184, 267-273.	0.8	35
30	XRMON-SOL: Isothermal equiaxed solidification of a grain refined Alâ€“20wt%Cu alloy. Journal of Crystal Growth, 2016, 440, 38-46.	0.7	34
31	Direct observation of spatially isothermal equiaxed solidification of an Alâ€“Cu alloy in microgravity on board the MASER 13 sounding rocket. Journal of Crystal Growth, 2016, 454, 96-104.	0.7	33
32	In-situ X-ray radiography of primary Fe-rich intermetallic compound formation. Acta Materialia, 2020, 196, 759-769.	3.8	32
33	Physical estimation of triplet phases from two new proteins. Acta Crystallographica Section D: Biological Crystallography, 2002, 58, 1780-1786.	2.5	30
34	Annealing response of binary Alâ€“7Mg alloy deformed by equal channel angular pressing. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 586, 374-381.	2.6	28
35	Mesoscopic Simulation of Dendritic Growth Observed in X-ray Video Microscopy During Directional Solidification of Alâ€“Cu Alloys. ISIJ International, 2010, 50, 1886-1894.	0.6	27
36	Dispersion of soft Bi particles and grain refinement of matrix in an Alâ€“Bi alloy by equal channel angular pressing. Journal of Alloys and Compounds, 2014, 605, 131-136.	2.8	26

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37	Microstructure, hardness evolution and thermal stability of binary Al-7Mg alloy processed by ECAP with intermediate annealing. Transactions of Nonferrous Metals Society of China, 2014, 24, 2301-2306.	1.7	26
38	Time-resolved X-ray diffraction studies of solidification microstructure evolution in welding. Acta Materialia, 2014, 68, 159-168.	3.8	24
39	XRMON-GF Experiments Devoted to the in Situ X-ray Radiographic Observation of Growth Process in Microgravity Conditions. Microgravity Science and Technology, 2014, 26, 37-50.	0.7	24
40	In situ hard X-ray transmission microscopy for material science. Journal of Materials Science, 2017, 52, 3497-3507.	1.7	24
41	Microstructural studies of self-supported (1.5â€“10 Î¼m) Pd/23Âwt%Ag hydrogen separation membranes subjected to different heat treatments. Journal of Materials Science, 2009, 44, 4429-4442.	1.7	23
42	In situ X-ray ptychography imaging of high-temperature CO2 acceptor particle agglomerates. Applied Physics Letters, 2014, 104, 241909.	1.5	23
43	Nature of Segregated Lead on Electrochemically Active AlPb Model Alloy. Journal of the Electrochemical Society, 2007, 154, C28.	1.3	21
44	Characterization of Motion of Dendrite Fragment by X-Ray Radiography on Earth and under Microgravity Environment. Materials Science Forum, 0, 790-791, 311-316.	0.3	21
45	Angle calculations for a six-circle Îº diffractometer. Journal of Applied Crystallography, 1999, 32, 943-950.	1.9	19
46	Analysis of an Equiaxed Dendrite Growth Model with Comparisons to In-Situ Results of Equiaxed Dendritic Growth in an Al-Ge Alloy. Materials Science Forum, 2010, 654-656, 1359-1362.	0.3	18
47	Investigation of gravity effects on solidification of binary alloys within situX-ray radiography on earth and in microgravity environment. Journal of Physics: Conference Series, 2011, 327, 012012.	0.3	17
48	Revealing the nucleation kinetics of primary Si particles in hypereutectic Alâ€“Si alloys under the influence of P inoculation. Journal of Materials Science, 2020, 55, 15621-15635.	1.7	17
49	Soft particles assisted grain refinement and strengthening of an Al-Bi-Zn alloy subjected to ECAP. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2017, 703, 304-313.	2.6	15
50	Growth kinetics of primary Si particles in hypereutectic Al-Si alloys under the influence of P inoculation: Experiments and modelling. Journal of Alloys and Compounds, 2021, 854, 155323.	2.8	15
51	In-situ observation of transient columnar dendrite growth in the presence of thermo-solutal convection. IOP Conference Series: Materials Science and Engineering, 2012, 33, 012033.	0.3	14
52	Correcting lateral chromatic aberrations in non-monochromatic X-ray microscopy. Applied Physics Letters, 2016, 109, 054103.	1.5	13
53	In-situ X-radiographic study of nucleation and growth behaviour of primary silicon particles during solidification of a hypereutectic Al-Si alloy. Journal of Alloys and Compounds, 2020, 832, 154948.	2.8	13
54	Achieving dispersed fine soft Bi particles and grain refinement in a hypermonotectic Alâ€“Bi alloy by severe plastic deformation and annealing. Scripta Materialia, 2018, 155, 124-128.	2.6	12

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55	Rochelle salt â€“ a structural reinvestigation with improved tools. I. The high-temperature paraelectric phase at 308â€…K. IUCrJ, 2015, 2, 19-28.	1.0	11
56	Non-steady 3D dendrite tip growth under diffusive and weakly convective conditions. Materialia, 2019, 5, 100215.	1.3	10
57	Metallurgical investigation of metal dusting corrosion in plant-exposed nickel-based alloy 602CA. Corrosion Engineering Science and Technology, 2005, 40, 239-243.	0.7	9
58	The evolution and oxidation of carbides in an Alloy 601 exposed to long term high temperature corrosion conditions. Corrosion Science, 2010, 52, 4001-4010.	3.0	9
59	In situX-ray observations of gas porosity interactions with dendritic microstructures during solidification of Al-based alloys. IOP Conference Series: Materials Science and Engineering, 2016, 117, 012067.	0.3	9
60	The Use of In Situ X-ray Imaging Methods in the Research and Development of Magnesium-Based Grain-Refined and Nanocomposite Materials. Jom, 2016, 68, 3042-3050.	0.9	9
61	Time resolved X-ray imaging of eutectic cellular patterns evolving during solidification of ternary Alâ€“Cuâ€“Ag alloys. International Journal of Materials Research, 2010, 101, 1484-1488.	0.1	8
62	Liquid decomposition, droplet coagulation and droplet-interface interactions in hypermonotectic Al-Bi alloys. Transactions of the Indian Institute of Metals, 2009, 62, 437-442.	0.7	7
63	Overview of In Situ X-Ray Studies of Light Alloy Solidification in Microgravity. Minerals, Metals and Materials Series, 2017, , 581-590.	0.3	7
64	Investigation of `glitches' in the energy spectrum induced by single-crystal diamond compound X-ray refractive lenses. Journal of Synchrotron Radiation, 2019, 26, 109-118.	1.0	7
65	Elastic strain and texture evolution during tensile testing of peak-hardened Alâ€“Mgâ€“Si-profiles. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 479, 313-323.	2.6	6
66	Imaging microstructural dynamics and strain fields in electro-active materials in situ with dark field x-ray microscopy. Review of Scientific Instruments, 2020, 91, 065103.	0.6	6
67	Three-beam resonant X-ray diffraction in germanium â€“ Laue transmission cases. Acta Crystallographica Section A: Foundations and Advances, 2005, 61, 460-470.	0.3	5
68	X-Ray Monitoring of Solidification Phenomena in Al-Cu Alloys. Materials Science Forum, 2006, 508, 69-74.	0.3	5
69	Surface Characterization of Heat Treated AlPbCu Model Alloys. Journal of the Electrochemical Society, 2011, 158, C178.	1.3	5
70	A Synchrotron X-Ray Radiography Investigation of Induced Dendrite Fragmentation in Al-15wt%Cu. Materials Science Forum, 0, 765, 210-214.	0.3	5
71	Hard X-ray In-situ Full-field Microscopy for Material Science Applications.. Microscopy and Microanalysis, 2018, 24, 552-553.	0.2	5
72	In-situ evidence for impurity-induced formation of eutectic colonies in an interdendritic liquid. Materials Letters, 2021, 292, 129637.	1.3	5

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73	Application of Known X-ray Phases in the Crystallographic Study of a Small Protein. Acta Crystallographica Section D: Biological Crystallography, 1996, 52, 893-900.	2.5	3
74	Three-beam interference measurements with a six-circle Îº diffractometer. Journal of Applied Crystallography, 2000, 33, 49-51.	1.9	3
75	Impact of buoyancy on the growth of equiaxed grains in Alâ€“Cu. International Journal of Cast Metals Research, 2009, 22, 51-53.	0.5	3
76	Influence of Mg Content, Grain Size and Strain Rate on Mechanical Properties and DSA Behavior of Al-Mg Alloys Processed by ECAP and Annealing. Materials Science Forum, 0, 794-796, 870-875.	0.3	3
77	Numerical modelling and in-situ radiographic study of the grain nucleation and growth of inoculated aluminum alloys. IOP Conference Series: Materials Science and Engineering, 2015, 84, 012090.	0.3	3
78	Investigation of glitches induced by single-crystal diamond compound refractive lenses based on crystal orientation. AIP Conference Proceedings, 2019, , .	0.3	3
79	Experimental investigation of Gaussian random phase screen model for x-ray diffusers. Optics Express, 2019, 27, 20311.	1.7	3
80	Materials solidification physics in space. Europhysics News, 2008, 39, 22-24.	0.1	2
81	X-Ray Video Microscopy Studies of Irregular Eutectic Solidification Microstructures in Alâ€“Siâ€“Cu Alloys. ISIJ International, 2010, 50, 1936-1940.	0.6	2
82	<i>In Situ</i> Investigation of Liquid-Liquid Phase Separation in Hypermonotectic Alloys. Materials Science Forum, 0, 649, 149-158.	0.3	2
83	xd_red-1.0: synchrotron and in-house X-ray diffraction data reduction and analysis program. Journal of Applied Crystallography, 2001, 34, 785-785.	1.9	1
84	Influence of dendrite arrangement on coarsening during solidification of high-solute Al alloys. International Journal of Cast Metals Research, 2009, 22, 271-274.	0.5	1
85	Nebula: reconstruction and visualization of scattering data in reciprocal space. Journal of Applied Crystallography, 2015, 48, 604-607.	1.9	1
86	The Behavior of Liquid Alloys Visualized by X-Rays. Materials Science Forum, 0, 884, 18-25.	0.3	1
87	Analytical transmission cross-coefficients for pink beam X-ray microscopy based on compound refractive lenses. Ultramicroscopy, 2018, 184, 1-7.	0.8	1
88	Three-dimensional study of nodule clustering and heterogeneous strain localization for tailored material properties in ductile iron. IOP Conference Series: Materials Science and Engineering, 2019, 529, 012078.	0.3	1
89	X-Ray Imaging of Solidification Processes and Microstructure Evolution. , 2008, , 357-361.		1
90	X-Ray Monitoring of Solidification Phenomena in Al-Cu Alloys. Materials Science Forum, 0, , 69-74.	0.3	1

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91	Application of Known Triplet Phases in the Crystallographic Study of Bovine Pancreatic Trypsin Inhibitor. I: Studies at 1.55 and 1.75 Ã... Resolution. Acta Crystallographica Section D: Biological Crystallography, 1997, 53, 262-268.	2.5	0
92	Application of known triplet phases in the crystallographic study. of bovine pancreatic trypsin inhibitor I. Studies at 1.55 and 1.75 Ã... resolution. Erratum. Acta Crystallographica Section D: Biological Crystallography, 1997, 53, 626-626.	2.5	0
93	Application of Known Triplet Phases in the Crystallographic Study of Bovine Pancreatic Trypsin Inhibitor. II: Study at 2.0 Ã... Resolution. Acta Crystallographica Section D: Biological Crystallography, 1998, 54, 237-242.	2.5	0
94	Ultra-fast in-situ X-ray studies of evolving columnar dendrites in solidifying steel weld pools. IOP Conference Series: Materials Science and Engineering, 2015, 84, 012029.	0.3	0
95	Revealing the Heterogeneous Nucleation and Growth Behaviour of Grains in Inoculated Aluminium Alloys During Solidification. Minerals, Metals and Materials Series, 2019, , 1665-1675.	0.3	0
96	The Influence of Cu on Eutectic Nucleation and Morphology in Hypoeutectic Al-Si Alloys. , 2012, , 1475-1482.		0
97	In-Situ X-Ray Radiographic Observations of Eutectic Transformations in Al-Cu Alloys. , 2013, , 3409-3416.		0
98	Morphological Transition of Î±-Mg Dendrites During Near-Isothermal Solidification of a Mgâ€“Ndâ€“Gdâ€“Znâ€“Zr Casting Alloy. Minerals, Metals and Materials Series, 2017, , 591-596.	0.3	0