

# Ragnvald H Mathiesen

## List of Publications by Citations

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95  
papers

2,752  
citations

29  
h-index

51  
g-index

99  
ext. papers

3,159  
ext. citations

3.6  
avg, IF

5.1  
L-index

#	Paper	IF	Citations
95	In situ observations of dendritic fragmentation due to local solute-enrichment during directional solidification of an aluminum alloy. <i>Acta Materialia</i> , <b>2007</b> , 55, 4287-4292	8.4	203
94	Time Resolved X-Ray Imaging of Dendritic Growth in Binary Alloys. <i>Physical Review Letters</i> , <b>1999</b> , 83, 5062-5065	7.4	179
93	Crystal fragmentation and columnar-to-equiaxed transitions in Al-Cu studied by synchrotron X-ray video microscopy. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , <b>2006</b> , 37, 2515-2524	2.3	150
92	Microstructure evolution and mechanical behavior of a binary Al/Mg alloy processed by equal-channel angular pressing. <i>Acta Materialia</i> , <b>2015</b> , 84, 42-54	8.4	148
91	A synchrotron X-ray radiography study of dendrite fragmentation induced by a pulsed electromagnetic field in an Al/5Cu alloy. <i>Acta Materialia</i> , <b>2014</b> , 70, 228-239	8.4	137
90	Time-resolved x-ray imaging of aluminum alloy solidification processes. <i>Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science</i> , <b>2002</b> , 33, 613-623	2.5	134
89	X-ray radiography observations of columnar dendritic growth and constitutional undercooling in an Al/0wt%Cu alloy. <i>Acta Materialia</i> , <b>2005</b> , 53, 947-956	8.4	130
88	The real-time, high-resolution x-ray video microscopy of solidification in aluminum alloys. <i>Jom</i> , <b>2007</b> , 59, 20-26	2.1	114
87	Revealing internal flow behaviour in arc welding and additive manufacturing of metals. <i>Nature Communications</i> , <b>2018</b> , 9, 5414	17.4	93
86	Intergranular Corrosion of Copper-Containing AA6xxx AlMgSi Aluminum Alloys. <i>Journal of the Electrochemical Society</i> , <b>2008</b> , 155, C550	3.9	82
85	Heterogeneous nucleation and grain growth of inoculated aluminium alloys: An integrated study by in-situ X-radiography and numerical modelling. <i>Acta Materialia</i> , <b>2017</b> , 140, 224-239	8.4	76
84	The charge density of urea from synchrotron diffraction data. <i>Acta Crystallographica Section A: Foundations and Advances</i> , <b>2004</b> , 60, 371-81		69
83	On the interest of synchrotron X-ray imaging for the study of solidification in metallic alloys. <i>Comptes Rendus Physique</i> , <b>2012</b> , 13, 237-245	1.4	60
82	Revealing the heterogeneous nucleation behavior of equiaxed grains of inoculated Al alloys during directional solidification. <i>Acta Materialia</i> , <b>2018</b> , 149, 312-325	8.4	59
81	In Situ X-Ray Video Microscopy as a Tool in Solidification Science. <i>Jom</i> , <b>2012</b> , 64, 76-82	2.1	50
80	L2 droplet interaction with Al during solidification of hypermonotectic Al/Bi alloys. <i>Acta Materialia</i> , <b>2009</b> , 57, 2887-2895	8.4	50
79	Equiaxed dendritic solidification and grain refiner potency characterised through in situ X-radiography. <i>Acta Materialia</i> , <b>2015</b> , 95, 83-89	8.4	49

78	XRMON-GF: A novel facility for solidification of metallic alloys with in situ and time-resolved X-ray radiographic characterization in microgravity conditions. <i>Journal of Crystal Growth</i> , <b>2013</b> , 374, 23-30	1.6	45
77	Combined in situ X-ray radiographic observations and post-solidification metallographic characterisation of eutectic transformations in AlCu alloy systems. <i>Acta Materialia</i> , <b>2013</b> , 61, 4559-4571	8.4	45
76	In-situ study of morphology and growth of primary $\beta$ -Al(FeMnCr)Si intermetallics in an Al-Si alloy. <i>Acta Materialia</i> , <b>2017</b> , 130, 1-9	8.4	43
75	High ductility bulk nanostructured AlMg binary alloy processed by equal channel angular pressing and inter-pass annealing. <i>Scripta Materialia</i> , <b>2015</b> , 105, 22-25	5.6	42
74	Achieve high ductility and strength in an AlMg alloy by severe plastic deformation combined with inter-pass annealing. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , <b>2014</b> , 598, 141-146	5.3	40
73	X-Ray Videomicroscopy Studies of Eutectic Al-Si Solidification in Al-Si-Cu. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , <b>2011</b> , 42, 170-180	2.3	40
72	Retrieval of three-dimensional spatial information from fast in situ two-dimensional synchrotron radiography of solidification microstructure evolution. <i>Acta Materialia</i> , <b>2014</b> , 81, 241-247	8.4	39
71	In situ investigation of spinodal decomposition in hypermonotectic AlBi and AlBiZn alloys. <i>New Journal of Physics</i> , <b>2008</b> , 10, 053001	2.9	35
70	$\beta$ Mg primary phase formation and dendritic morphology transition in solidification of a Mg-Nd-Gd-Zn-Zr casting alloy. <i>Acta Materialia</i> , <b>2016</b> , 116, 177-187	8.4	33
69	Compact x-ray microradiograph for in situ imaging of solidification processes: bringing in situ x-ray micro-imaging from the synchrotron to the laboratory. <i>Review of Scientific Instruments</i> , <b>2011</b> , 82, 105108	1.7	33
68	XRMON-SOL: Isothermal equiaxed solidification of a grain refined Al <sub>70</sub> wt%Cu alloy. <i>Journal of Crystal Growth</i> , <b>2016</b> , 440, 38-46	1.6	30
67	Zernike phase contrast in high-energy x-ray transmission microscopy based on refractive optics. <i>Ultramicroscopy</i> , <b>2018</b> , 184, 267-273	3.1	29
66	Mesoscopic Simulation of Dendritic Growth Observed in X-ray Video Microscopy During Directional Solidification of AlCu Alloys. <i>ISIJ International</i> , <b>2010</b> , 50, 1886-1894	1.7	24
65	Dispersion of soft Bi particles and grain refinement of matrix in an AlBi alloy by equal channel angular pressing. <i>Journal of Alloys and Compounds</i> , <b>2014</b> , 605, 131-136	5.7	23
64	Annealing response of binary AlMg alloy deformed by equal channel angular pressing. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , <b>2013</b> , 586, 374-381	5.3	23
63	Microstructure, hardness evolution and thermal stability of binary Al-7Mg alloy processed by ECAP with intermediate annealing. <i>Transactions of Nonferrous Metals Society of China</i> , <b>2014</b> , 24, 2301-2306	3.3	22
62	In situ hard X-ray transmission microscopy for material science. <i>Journal of Materials Science</i> , <b>2017</b> , 52, 3497-3507	4.3	21
61	XRMON-GF Experiments Devoted to the in Situ X-ray Radiographic Observation of Growth Process in Microgravity Conditions. <i>Microgravity Science and Technology</i> , <b>2014</b> , 26, 37-50	1.6	21

60	Microstructural studies of self-supported (1.5 $\mu$ m) Pd/23 wt%Ag hydrogen separation membranes subjected to different heat treatments. <i>Journal of Materials Science</i> , <b>2009</b> , 44, 4429-4442	4.3	21
59	In situ X-ray ptychography imaging of high-temperature CO <sub>2</sub> acceptor particle agglomerates. <i>Applied Physics Letters</i> , <b>2014</b> , 104, 241909	3.4	20
58	Nature of Segregated Lead on Electrochemically Active AlPb Model Alloy. <i>Journal of the Electrochemical Society</i> , <b>2007</b> , 154, C28	3.9	20
57	Direct observation of spatially isothermal equiaxed solidification of an AlCu alloy in microgravity on board the MASER 13 sounding rocket. <i>Journal of Crystal Growth</i> , <b>2016</b> , 454, 96-104	1.6	20
56	In-situ X-ray radiography of primary Fe-rich intermetallic compound formation. <i>Acta Materialia</i> , <b>2020</b> , 196, 759-769	8.4	17
55	Time-resolved X-ray diffraction studies of solidification microstructure evolution in welding. <i>Acta Materialia</i> , <b>2014</b> , 68, 159-168	8.4	17
54	Analysis of an Equiaxed Dendrite Growth Model with Comparisons to In-Situ Results of Equiaxed Dendritic Growth in an Al-Ge Alloy. <i>Materials Science Forum</i> , <b>2010</b> , 654-656, 1359-1362	0.4	17
53	Characterization of Motion of Dendrite Fragment by X-Ray Radiography on Earth and under Microgravity Environment. <i>Materials Science Forum</i> , <b>2014</b> , 790-791, 311-316	0.4	15
52	In-situ observation of transient columnar dendrite growth in the presence of thermo-solutal convection. <i>IOP Conference Series: Materials Science and Engineering</i> , <b>2012</b> , 33, 012033	0.4	14
51	Investigation of gravity effects on solidification of binary alloys within situ X-ray radiography on earth and in microgravity environment. <i>Journal of Physics: Conference Series</i> , <b>2011</b> , 327, 012012	0.3	13
50	Soft particles assisted grain refinement and strengthening of an Al-Bi-Zn alloy subjected to ECAP. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , <b>2017</b> , 703, 304-313	5.3	12
49	Correcting lateral chromatic aberrations in non-monochromatic X-ray microscopy. <i>Applied Physics Letters</i> , <b>2016</b> , 109, 054103	3.4	12
48	Angle calculations for a six-circle diffractometer. <i>Journal of Applied Crystallography</i> , <b>1999</b> , 32, 943-950	3.8	11
47	Revealing the nucleation kinetics of primary Si particles in hypereutectic AlBi alloys under the influence of P inoculation. <i>Journal of Materials Science</i> , <b>2020</b> , 55, 15621-15635	4.3	11
46	Rochelle salt - a structural reinvestigation with improved tools. I. The high-temperature para-electric phase at 308 K. <i>IUCrJ</i> , <b>2015</b> , 2, 19-28	4.7	10
45	Metallurgical investigation of metal dusting corrosion in plant-exposed nickel-based alloy 602CA. <i>Corrosion Engineering Science and Technology</i> , <b>2005</b> , 40, 239-243	1.7	9
44	Growth kinetics of primary Si particles in hypereutectic Al-Si alloys under the influence of P inoculation: Experiments and modelling. <i>Journal of Alloys and Compounds</i> , <b>2021</b> , 854, 155323	5.7	9
43	Time resolved X-ray imaging of eutectic cellular patterns evolving during solidification of ternary AlCuAg alloys. <i>International Journal of Materials Research</i> , <b>2010</b> , 101, 1484-1488	0.5	8

42	The evolution and oxidation of carbides in an Alloy 601 exposed to long term high temperature corrosion conditions. <i>Corrosion Science</i> , <b>2010</b> , 52, 4001-4010	6.8	8
41	In situ X-ray observations of gas porosity interactions with dendritic microstructures during solidification of Al-based alloys. <i>IOP Conference Series: Materials Science and Engineering</i> , <b>2016</b> , 117, 012067	0.4	8
40	Prominent role of multi-scale microstructural heterogeneities on superplastic deformation of a high solid solution Al-Mg alloy. <i>International Journal of Plasticity</i> , <b>2021</b> , 146, 103108	7.6	8
39	Non-steady 3D dendrite tip growth under diffusive and weakly convective conditions. <i>Materialia</i> , <b>2019</b> , 5, 100215	3.2	7
38	The Use of In Situ X-ray Imaging Methods in the Research and Development of Magnesium-Based Grain-Refined and Nanocomposite Materials. <i>Jom</i> , <b>2016</b> , 68, 3042-3050	2.1	6
37	Elastic strain and texture evolution during tensile testing of peak-hardened Al-Mg-Bi-profiles. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , <b>2008</b> , 479, 313-323	5.3	6
36	In-situ X-radiographic study of nucleation and growth behaviour of primary silicon particles during solidification of a hypereutectic Al-Si alloy. <i>Journal of Alloys and Compounds</i> , <b>2020</b> , 832, 154948	5.7	6
35	Achieving dispersed fine soft Bi particles and grain refinement in a hypermonotectic Al-Bi alloy by severe plastic deformation and annealing. <i>Scripta Materialia</i> , <b>2018</b> , 155, 124-128	5.6	6
34	Physical estimation of triplet phases from two new proteins. <i>Acta Crystallographica Section D: Biological Crystallography</i> , <b>2002</b> , 58, 1780-6		5
33	Three-beam resonant X-ray diffraction in germanium - Laue transmission cases. <i>Acta Crystallographica Section A: Foundations and Advances</i> , <b>2005</b> , 61, 460-70		5
32	Investigation of glitches in the energy spectrum induced by single-crystal diamond compound X-ray refractive lenses. <i>Journal of Synchrotron Radiation</i> , <b>2019</b> , 26, 109-118	2.4	5
31	Overview of In Situ X-Ray Studies of Light Alloy Solidification in Microgravity. <i>Minerals, Metals and Materials Series</i> , <b>2017</b> , 581-590	0.3	4
30	Hard X-ray In-situ Full-field Microscopy for Material Science Applications.. <i>Microscopy and Microanalysis</i> , <b>2018</b> , 24, 552-553	0.5	4
29	A Synchrotron X-Ray Radiography Investigation of Induced Dendrite Fragmentation in Al-15wt%Cu. <i>Materials Science Forum</i> , <b>2013</b> , 765, 210-214	0.4	4
28	Liquid decomposition, droplet coagulation and droplet-interface interactions in hypermonotectic Al-Bi alloys. <i>Transactions of the Indian Institute of Metals</i> , <b>2009</b> , 62, 437-442	1.2	4
27	X-Ray Monitoring of Solidification Phenomena in Al-Cu Alloys. <i>Materials Science Forum</i> , <b>2006</b> , 508, 69-74	0.4	4
26	Imaging microstructural dynamics and strain fields in electro-active materials in situ with dark field x-ray microscopy. <i>Review of Scientific Instruments</i> , <b>2020</b> , 91, 065103	1.7	3
25	Numerical modelling and in-situ radiographic study of the grain nucleation and growth of inoculated aluminum alloys. <i>IOP Conference Series: Materials Science and Engineering</i> , <b>2015</b> , 84, 012090	0.4	3

24	Influence of Mg Content, Grain Size and Strain Rate on Mechanical Properties and DSA Behavior of Al-Mg Alloys Processed by ECAP and Annealing. <i>Materials Science Forum</i> , <b>2014</b> , 794-796, 870-875	0.4	3
23	Impact of buoyancy on the growth of equiaxed grains in AlCu. <i>International Journal of Cast Metals Research</i> , <b>2009</b> , 22, 51-53	1	3
22	Surface Characterization of Heat Treated AlPbCu Model Alloys. <i>Journal of the Electrochemical Society</i> , <b>2011</b> , 158, C178	3.9	3
21	Application of known X-ray phases in the crystallographic study of a small protein. <i>Acta Crystallographica Section D: Biological Crystallography</i> , <b>1996</b> , 52, 893-900		3
20	Investigation of glitches induced by single-crystal diamond compound refractive lenses based on crystal orientation <b>2019</b> ,		3
19	Materials solidification physics in space. <i>Europhysics News</i> , <b>2008</b> , 39, 22-24	0.2	2
18	Experimental investigation of Gaussian random phase screen model for x-ray diffusers. <i>Optics Express</i> , <b>2019</b> , 27, 20311-20322	3.3	2
17	In-situ evidence for impurity-induced formation of eutectic colonies in an interdendritic liquid. <i>Materials Letters</i> , <b>2021</b> , 292, 129637	3.3	2
16	The Behavior of Liquid Alloys Visualized by X-Rays. <i>Materials Science Forum</i> , <b>2017</b> , 884, 18-25	0.4	1
15	: reconstruction and visualization of scattering data in reciprocal space. <i>Journal of Applied Crystallography</i> , <b>2015</b> , 48, 604-607	3.8	1
14	Analytical transmission cross-coefficients for pink beam X-ray microscopy based on compound refractive lenses. <i>Ultramicroscopy</i> , <b>2018</b> , 184, 1-7	3.1	1
13	In Situ Investigation of Liquid-Liquid Phase Separation in Hypermonotectic Alloys. <i>Materials Science Forum</i> , <b>2010</b> , 649, 149-158	0.4	1
12	Influence of dendrite arrangement on coarsening during solidification of high-solute Al alloys. <i>International Journal of Cast Metals Research</i> , <b>2009</b> , 22, 271-274	1	1
11	X-Ray Video Microscopy Studies of Irregular Eutectic Solidification Microstructures in AlSiCu Alloys. <i>ISIJ International</i> , <b>2010</b> , 50, 1936-1940	1.7	1
10	X-Ray Imaging of Solidification Processes and Microstructure Evolution <b>2008</b> , 357-361		1
9	Revealing the Heterogeneous Nucleation and Growth Behaviour of Grains in Inoculated Aluminium Alloys During Solidification. <i>Minerals, Metals and Materials Series</i> , <b>2019</b> , 1665-1675	0.3	
8	Ultra-fast in-situ X-ray studies of evolving columnar dendrites in solidifying steel weld pools. <i>IOP Conference Series: Materials Science and Engineering</i> , <b>2015</b> , 84, 012029	0.4	
7	In-Situ X-Ray Radiographic Observations of Eutectic Transformations in Al-Cu Alloys <b>2013</b> , 3409-3416		

- 6 Application of known triplet phases in the crystallographic study of bovine pancreatic trypsin inhibitor. I: studies at 1.55 and 1.75 Å resolution. *Acta Crystallographica Section D: Biological Crystallography*, **1997**, 53, 262-8
- 5 Application of known triplet phases in the crystallographic study of bovine pancreatic trypsin inhibitor. II: study at 2.0 Å resolution. *Acta Crystallographica Section D: Biological Crystallography*, **1998**, 54, 237-42
- 4 Morphological Transition of Mg Dendrites During Near-Isothermal Solidification of a Mg<sub>92</sub>Al<sub>6</sub>Zn<sub>2</sub> Casting Alloy. *Minerals, Metals and Materials Series*, **2017**, 591-596 0.3
- 3 The Influence of Cu on Eutectic Nucleation and Morphology in Hypoeutectic Al-Si Alloys **2012**, 1475-1482
- 2 In-Situ X-Ray Radiographic Observations of Eutectic Transformations in Al-Cu Alloys **2013**, 3409-3416
- 1 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 0.4