

Mattias Thuvander

List of Publications by Year in descending order

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122
papers

2,927
citations

172207

29
h-index

197535

49
g-index

126
all docs

126
docs citations

126
times ranked

2576
citing authors

#	ARTICLE	IF	CITATIONS
1	Microstructures and hardness of as-quenched martensites (0.1â€“0.5%C). Acta Materialia, 2011, 59, 5845-5858.	3.8	321
2	Quantitative atom probe analysis of carbides. Ultramicroscopy, 2011, 111, 604-608.	0.8	148
3	An improved thermodynamic modeling of the Feâ€“Cr system down to zero kelvin coupled with key experiments. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2011, 35, 355-366.	0.7	141
4	Microstructure, Solidification Texture, and Thermal Stability of 316 L Stainless Steel Manufactured by Laser Powder Bed Fusion. Metals, 2018, 8, 643.	1.0	117
5	Quantitative Evaluation of Spinodal Decomposition in Fe-Cr by Atom Probe Tomography and Radial Distribution Function Analysis. Microscopy and Microanalysis, 2013, 19, 665-675.	0.2	96
6	Thermal stability of electrodeposited nanocrystalline nickel and ironâ€“nickel alloys. Materials Science and Technology, 2001, 17, 961-970.	0.8	87
7	Microstructural stability of Feâ€“Crâ€“Al alloys at 450â€“550 Â°C. Journal of Nuclear Materials, 2015, 457, 291-297.	1.3	81
8	Hydrogen analysis in APT: Methods to control adsorption and dissociation of H ₂ . Ultramicroscopy, 2013, 132, 285-289.	0.8	65
9	Martensitic transformations in Ti-6Al-4V (ELI) alloy manufactured by 3D Printing. Materials Characterization, 2018, 146, 101-112.	1.9	64
10	Spinodal decomposition of Ti _{0.33} Al _{0.67} N thin films studied by atom probe tomography. Thin Solid Films, 2012, 520, 4362-4368.	0.8	63
11	Redistribution of alloying elements in Zircaloy-2 after in-reactor exposure. Journal of Nuclear Materials, 2014, 454, 178-185.	1.3	60
12	Concurrent phase separation and clustering in the ferrite phase during low temperature stress aging of duplex stainless steel weldments. Acta Materialia, 2012, 60, 5818-5827.	3.8	58
13	The 475Â°C embrittlement in Feâ€“20Cr and Feâ€“20Crâ€“X (X=Ni, Cu, Mn) alloys studied by mechanical testing and atom probe tomography. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 574, 123-129.	2.6	55
14	Nanostructure evolution and mechanical property changes during aging of a super duplex stainless steel at 300 Â°C. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2015, 647, 241-248.	2.6	51
15	Direct observation of hydrogen and deuterium in oxide grain boundaries in corroded Zirconium alloys. Corrosion Science, 2015, 90, 1-4.	3.0	49
16	The bone-implant interface of dental implants in humans on the atomic scale. Acta Biomaterialia, 2017, 48, 445-450.	4.1	46
17	Insight into hydrothermal aging effect on Pd sites over Pd/LTA and Pd/SSZ-13 as PNA and CO oxidation monolith catalysts. Applied Catalysis B: Environmental, 2020, 278, 119315.	10.8	45
18	Barrier oxide chemistry and hydrogen pick-up mechanisms in zirconium alloys. Corrosion Science, 2016, 102, 490-502.	3.0	44

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19	Enrichment of Fe and Ni at metal and oxide grain boundaries in corroded Zircaloy-2. <i>Corrosion Science</i> , 2012, 65, 10-12.	3.0	41
20	Atomically Resolved Tissue Integration. <i>Nano Letters</i> , 2014, 14, 4220-4223.	4.5	41
21	Atom Probe Tomography of Oxide Scales. <i>Oxidation of Metals</i> , 2013, 79, 227-238.	1.0	40
22	Electron backscattering diffraction study of coalesced bainite in high strength steel weld metals. <i>Materials Science and Technology</i> , 2008, 24, 1183-1188.	0.8	37
23	Quantitative APT analysis of Ti(C,N). <i>Ultramicroscopy</i> , 2011, 111, 609-614.	0.8	37
24	Evolution of precipitation in reactor pressure vessel steel welds under neutron irradiation. <i>Journal of Nuclear Materials</i> , 2017, 488, 222-230.	1.3	37
25	Microstructure of a boron containing high purity nickel-based alloy 690. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2000, 281, 96-103.	2.6	35
26	APFIM Studies of Grain and Phase Boundaries. <i>Materials Characterization</i> , 2000, 44, 87-100.	1.9	33
27	Three-dimensional analysis of coalesced bainite using focused ion beam tomography. <i>Materials Characterization</i> , 2008, 59, 877-882.	1.9	33
28	Reduction of multiple hits in atom probe tomography. <i>Ultramicroscopy</i> , 2013, 132, 81-85.	0.8	33
29	Atom Probe Tomography Interlaboratory Study on Clustering Analysis in Experimental Data Using the Maximum Separation Distance Approach. <i>Microscopy and Microanalysis</i> , 2019, 25, 356-366.	0.2	32
30	Tool wear mechanisms of PcBN in machining Inconel 718: Analysis across multiple length scale. <i>CIRP Annals - Manufacturing Technology</i> , 2021, 70, 73-78.	1.7	31
31	Initial clustering "a key factor for phase separation kinetics in Fe-Cr-based alloys. <i>Scripta Materialia</i> , 2014, 75, 62-65.	2.6	30
32	Effect of cooling rate after solution treatment on subsequent phase separation during aging of Fe-Cr alloys: A small-angle neutron scattering study. <i>Acta Materialia</i> , 2017, 134, 221-229.	3.8	29
33	Atom probe tomography investigation of lath boundary segregation and precipitation in a maraging stainless steel. <i>Ultramicroscopy</i> , 2013, 132, 265-270.	0.8	28
34	Atomic-scale investigation of carbon atom migration in surface induced white layers in high-carbon medium chromium (AISI 52100) bearing steel. <i>Acta Materialia</i> , 2017, 130, 155-163.	3.8	27
35	THERMAL STABILITY OF ELECTRODEPOSITED NANOCRYSTALLINE NICKEL. <i>Surface Engineering</i> , 2002, 18, 151-156.	1.1	26
36	Structural Characterization of Phase Separation in Fe-Cr: A Current Comparison of Experimental Methods. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2016, 47, 5942-5952.	1.1	25

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37	Tin clustering and precipitation in the oxide during autoclave corrosion of Zircaloy-2. Journal of Nuclear Materials, 2015, 456, 409-414.	1.3	23
38	Alkali Dispersion in (Ag,Cu)(In,Ga)Se ₂ Thin Film Solar Cells—Insight from Theory and Experiment. ACS Applied Materials & Interfaces, 2021, 13, 7188-7199.	4.0	22
39	A statistical method to detect ordering and phase separation by APFIM. Ultramicroscopy, 1998, 73, 279-285.	0.8	21
40	Grain boundary segregation during heat treatment at 600°C in a model Alloy 600. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1999, 270, 38-43.	2.6	21
41	Cluster formation in in-service thermally aged pressurizer welds. Journal of Nuclear Materials, 2018, 504, 23-28.	1.3	21
42	Precipitation process of martensitic PH stainless steel Nanoflex. Materials Science and Technology, 2012, 28, 695-701.	0.8	20
43	Early stages of spinodal decomposition in Fe–Cr resolved by in-situ small-angle neutron scattering. Applied Physics Letters, 2015, 106, 061911.	1.5	20
44	Spinodal Decomposition in Functionally Graded Super Duplex Stainless Steel and Weld Metal. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2018, 49, 2803-2816.	1.1	20
45	Methods of quantitative matrix analysis of Zircaloy-2. Ultramicroscopy, 2011, 111, 711-714.	0.8	19
46	Characterization of as-deposited cold sprayed Cr-coating on Optimized ZIRLO claddings. Journal of Nuclear Materials, 2021, 549, 152892.	1.3	19
47	Blind deconvolution of time-of-flight mass spectra from atom probe tomography. Ultramicroscopy, 2013, 132, 60-64.	0.8	18
48	On the Analysis of Clustering in an Irradiated Low Alloy Reactor Pressure Vessel Steel Weld. Microscopy and Microanalysis, 2017, 23, 376-384.	0.2	18
49	Direct atom probe tomography observations of concentration fluctuations in Fe–Cr solid solution. Scripta Materialia, 2015, 98, 13-15.	2.6	17
50	Effect of solution treatment on spinodal decomposition during aging of an Fe-46.5 at.% Cr alloy. Journal of Materials Science, 2017, 52, 326-335.	1.7	17
51	Atom probe analysis of carbonitride grains in (Ti, W, Ta, Mo)(C, N) cermets with different carbon content. Applied Surface Science, 1996, 94-95, 351-355.	3.1	15
52	Microstructural evolution of Fe 22%Cr model alloy under thermal ageing and ion irradiation conditions studied by atom probe tomography. Journal of Nuclear Materials, 2016, 477, 172-177.	1.3	15
53	Fe and Cr phase separation in super and hyper duplex stainless steel plates and welds after very short aging times. Materials and Design, 2021, 210, 110055.	3.3	15
54	Three-dimensional atomic scale analysis of nanostructured materials. Micron, 2001, 32, 731-739.	1.1	14

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55	Effect of welding procedure on texture and strength of nickel based weld metal. Science and Technology of Welding and Joining, 2007, 12, 549-555.	1.5	14
56	Atom probe tomography of interfaces in ceramic films and oxide scales. MRS Bulletin, 2016, 41, 35-39.	1.7	14
57	Improving Compositional Accuracy in APT Analysis of Carbides Using a Decreased Detection Efficiency. Microscopy and Microanalysis, 2019, 25, 454-461.	0.2	14
58	Elemental Distribution in CrNbTaTiW-C High Entropy Alloy Thin Films. Microscopy and Microanalysis, 2019, 25, 489-500.	0.2	14
59	Cold sprayed Cr-coating on Optimized ZIRLOâ„¢ claddings: the Cr/Zr interface and its microstructural and chemical evolution after autoclave corrosion testing. Journal of Nuclear Materials, 2022, 560, 153505.	1.3	13
60	Effect of Ti on Evolution of Microstructure and Hardness of Martensitic Feâ„¢â„¢Mn Steel during Tempering. ISIJ International, 2014, 54, 2890-2899.	0.6	12
61	Microstructural Characterization of Sulfurization Effects in Cu(In,Ga)Se₂ Thin Film Solar Cells. Microscopy and Microanalysis, 2019, 25, 532-538.	0.2	12
62	Evolution of grain boundary chemistry in a Niâ„¢â„¢17Crâ„¢â„¢9Fe model alloy. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1998, 250, 93-98.	2.6	11
63	A Round Robin Experiment: Analysis of Solute Clustering from Atom Probe Tomography Data.. Microscopy and Microanalysis, 2016, 22, 666-667.	0.2	11
64	Influence of heat treatment under hot isostatic pressing (HIP) on microstructure of intermetallic-reinforced tool steel manufactured by laser powder bed fusion. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2020, 772, 138699.	2.6	11
65	The Effect of Hf Addition on the Boronizing and Siliciding Behavior of CoCrFeNi High Entropy Alloys. Materials, 2022, 15, 2282.	1.3	11
66	The potential of spinodal ferrite decomposition for increasing the very high cycle fatigue strength of duplex stainless steel. International Journal of Fatigue, 2016, 93, 363-371.	2.8	10
67	Self-organized nanostructuring in Zr0.69Al0.31N thin films studied by atom probe tomography. Thin Solid Films, 2016, 615, 233-238.	0.8	10
68	Atom probe tomography field evaporation characteristics and compositional corrections of ZrB2. Materials Characterization, 2019, 156, 109871.	1.9	10
69	Detailed Analysis of the Microstructure of the Metal/Oxide Interface Region in Zircaloy-2 after Autoclave Corrosion Testing. Journal of ASTM International, 2011, 8, 1-16.	0.2	10
70	Structure and chemistry of grain boundaries in Niâ„¢â„¢16Crâ„¢â„¢9Fe model materials. Applied Surface Science, 1995, 87-88, 251-256.	3.1	9
71	Grain boundary precipitation and segregation in Niâ„¢â„¢16Crâ„¢â„¢9Fe model materials. Applied Surface Science, 1996, 94-95, 343-350.	3.1	9
72	Microstructural Characterisation of As-Deposited and Reheated Weld Metal â„¢” High Strength Steel Weld Metals. Welding in the World, Le Soudage Dans Le Monde, 2007, 51, 44-49.	1.3	9

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73	Direct observation of doping incorporation pathways in self-catalytic GaMnAs nanowires. Journal of Applied Physics, 2015, 118, .	1.1	9
74	A Comparison between Ultra-high-strength and Conventional High-strength Fastener Steels: Mechanical Properties at Elevated Temperature and Microstructural Mechanisms. ISIJ International, 2016, 56, 1874-1883.	0.6	9
75	Oxide evolution on Alloy X-750 in simulated BWR environment. Journal of Nuclear Materials, 2016, 482, 19-27.	1.3	9
76	Corrosion of pre-oxidized nickel alloy X-750 in simulated BWR environment. Journal of Nuclear Materials, 2017, 486, 350-360.	1.3	9
77	Multiple Influences of Molybdenum on the Precipitation Process in a Martensitic PH Stainless Steel. Metals, 2019, 9, 1118.	1.0	9
78	An atom probe tomography study of the chemistry of radiation-induced dislocation loops in Zircaloy-2 exposed to boiling water reactor operation. Journal of Nuclear Materials, 2021, 550, 152923.	1.3	9
79	Oxidation Mechanism in Zircaloy-2â€”The Effect of SPP Size Distribution. , 2015, , 373-403.		9
80	An APT investigation of an amorphous Crâ€”Bâ€”C thin film. Ultramicroscopy, 2015, 159, 217-222.	0.8	8
81	Influence of heat treatment on grain boundary microstructure in a Niâ€”16Crâ€”10Feâ€”Oâ€”022C model material. Materials Science and Technology, 1999, 15, 237-245.	0.8	7
82	Modelling the Evolution of Multiple Hardening Mechanisms during Tempering of Feâ€”Câ€”Mnâ€”Ti Martensite. ISIJ International, 2015, 55, 884-893.	0.6	7
83	Complete precipitate dissolution during adiabatic shear localisation in a Ni-based superalloy. Philosophical Magazine Letters, 2020, 100, 561-570.	0.5	7
84	Electric-field-controlled reversible order-disorder switching of a metal tip surface. Physical Review Materials, 2018, 2, .	0.9	7
85	Precipitation kinetics of Cu-rich particles in super duplex stainless steels. Journal of Materials Research and Technology, 2021, 15, 3951-3964.	2.6	7
86	Atom probe tomography of a Tiâ€”Siâ€”Alâ€”Câ€”N coating grown on a cemented carbide substrate. Ultramicroscopy, 2015, 159, 308-313.	0.8	6
87	Effect of Tempering on the Bainitic Microstructure Evolution Correlated with the Hardness in a Low-Alloy Medium-Carbon Steel. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2020, 51, 6470-6481.	1.1	6
88	Precipitation of Î³â€”TM during cooling of nickel-base superalloy Haynes 282. Philosophical Magazine Letters, 2021, 101, 30-39.	0.5	6
89	Integrated effect of thermal ageing and low flux irradiation on microstructural evolution of the ferrite of welded austenitic stainless steels. Journal of Nuclear Materials, 2021, 551, 152967.	1.3	6
90	Nanoscale phase separations in as-fabricated thick super duplex stainless steels. Journal of Materials Science, 2021, 56, 12475-12485.	1.7	5

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91	Analysis of thermal embrittlement of a low alloy steel weldment using fracture toughness and microstructural investigations. <i>Engineering Fracture Mechanics</i> , 2022, 262, 108248.	2.0	5
92	Carbide Precipitation in a Low Alloyed Steel during Aging Studied by Atom Probe Tomography and Thermodynamic Modeling. <i>Metals</i> , 2021, 11, 2009.	1.0	5
93	Observations of copper clustering in a 25Cr-7Ni super duplex stainless steel during low-temperature aging under load. <i>Philosophical Magazine Letters</i> , 0, , 1-8.	0.5	4
94	Controlling In ⁺ Ga ⁺ Zn ⁺ O thin films transport properties through density changes. <i>Thin Solid Films</i> , 2016, 608, 57-61.	0.8	4
95	Resolving mass spectral overlaps in atom probe tomography by isotopic substitutions – case of TiSi15N. <i>Ultramicroscopy</i> , 2018, 184, 51-60.	0.8	4
96	Dynamic Impurity Redistributions in Kesterite Absorbers. <i>Physica Status Solidi (B): Basic Research</i> , 2020, 257, 2000062.	0.7	4
97	On the Use of Density-Based Algorithms for the Analysis of Solute Clustering in Atom Probe Tomography Data. <i>Minerals, Metals and Materials Series</i> , 2019, , 2097-2113.	0.3	4
98	Nanoscale chemistry of Zircaloy-2 exposed to three and nine annual cycles of boiling water reactor operation – an atom probe tomography study. <i>Journal of Nuclear Materials</i> , 2022, 561, 153537.	1.3	4
99	Carbide Precipitation during Processing of Two Low-Alloyed Martensitic Tool Steels with 0.11 and 0.17 V/Mo Ratios Studied by Neutron Scattering, Electron Microscopy and Atom Probe. <i>Metals</i> , 2022, 12, 758.	1.0	4
100	On the Accuracy of Compositional Quantification for Atom Probe Tomography. <i>Microscopy and Microanalysis</i> , 2016, 22, 642-643.	0.2	3
101	Early Precipitation Stages of Sigma Phase in Alloy 28 Studied with Scanning Electron Microscopy and Atom Probe Tomography. <i>ISIJ International</i> , 2021, 61, 881-887.	0.6	3
102	Toward a Comprehensive Mechanistic Understanding of Hydrogen Uptake in Zirconium Alloys by Combining Atom Probe Analysis With Electronic Structure Calculations. , 2015, , 515-539.		3
103	Detailed Analysis of the Microstructure of the Metal/Oxide Interface Region in Zircaloy-2 after Autoclave Corrosion Testing. , 2011, , 595-619.		3
104	The Effect of Iron on Dislocation Evolution in Model and Commercial Zirconium Alloys. , 2018, , 796-822.		3
105	Electric Field-Induced Surface Melting of Gold Observed In Situ at Room Temperature and at Atomic Resolution Using TEM. <i>Microscopy and Microanalysis</i> , 2019, 25, 1830-1831.	0.2	2
106	The Nanostructure of the Oxide Formed on Fe ⁺ 10Cr ⁺ 4Al Exposed in Liquid Pb. <i>Microscopy and Microanalysis</i> , 2022, 28, 1321-1334.	0.2	2
107	3D Analysis of Phase Separation in Ferritic Stainless Steels. , 2012, , 221-226.		2
108	Detailed Analysis of the Microstructure of the Metal/Oxide Interface Region in Zircaloy-2 after Autoclave Corrosion Testing. , 2012, , 595-619.		2

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109	Post-irradiation annealing of high flux irradiated and surveillance material reactor pressure vessel weld metal. <i>Journal of Nuclear Materials</i> , 2022, 562, 153586.	1.3	2
110	EBSD Analysis of Blocky Structures in Hardened and Tempered Microstructures of a 5 wt.% Cr Cold Work Tool Steel. <i>Metallography, Microstructure, and Analysis</i> , 2021, 10, 862-875.	0.5	2
111	Detailed Analysis of the Microstructure of the Metal/Oxide Interface Region in Zircaloy-2 after Autoclave Corrosion Testing. , 2012, , 595-619.		1
112	Atom probe tomography characterisation of powder forged connecting rods alloyed with vanadium and copper. <i>Philosophical Magazine</i> , 2022, 102, 2056-2073.	0.7	1
113	On APFIM of Grain Boundaries in a Nickel Base Superalloy. <i>European Physical Journal Special Topics</i> , 1996, 06, C5-247-C5-252.	0.2	0
114	Apfim Investigation of Segregation in a Nickel Base Alloy. <i>Microscopy and Microanalysis</i> , 1998, 4, 118-119.	0.2	0
115	Towards quantitative three-dimensional characterisation of buried InAs quantum dots. <i>Journal of Physics: Conference Series</i> , 2011, 326, 012046.	0.3	0
116	Atom Probe Tomography of Oxidised Grain Boundaries in Highly Irradiated SS316. <i>Microscopy and Microanalysis</i> , 2019, 25, 2532-2533.	0.2	0
117	3D Analysis of Phase Separation in Ferritic Stainless Steels. , 0, , 221-226.		0
118	Microstructural Evolution of Welded Stainless Steels on Integrated Effect of Thermal Aging and Low Flux Irradiation. <i>Minerals, Metals and Materials Series</i> , 2019, , 1919-1926.	0.3	0
119	On the Effect of Preoxidation of Nickel Alloy X-750. <i>Minerals, Metals and Materials Series</i> , 2018, , 407-416.	0.3	0
120	Microstructural Evolution of Welded Stainless Steels on Integrated Effect of Thermal Aging and Low Flux Irradiation. <i>Minerals, Metals and Materials Series</i> , 2018, , 703-710.	0.3	0
121	On the Use of Density-Based Algorithms for the Analysis of Solute Clustering in Atom Probe Tomography Data. <i>Minerals, Metals and Materials Series</i> , 2018, , 881-897.	0.3	0
122	Effect of the thorium oxide content on the leaching of a mixed thorium-uranium oxide fuel. <i>Journal of Radioanalytical and Nuclear Chemistry</i> , 0, , .	0.7	0