Lars P H Jeurgens

List of Publications by Year
in descending order

128 papers	4,097 citations	126907 33 h-index	144013 57 g-index
131 all docs	131 docs citations	131 times ranked	3361 citing authors

#	Article	IF	Citations
1	Growth kinetics and mechanisms of aluminum-oxide films formed by thermal oxidation of aluminum. Journal of Applied Physics, 2002, 92, 1649-1656.	2.5	306
2	Thermodynamic stability of amorphous oxide films on metals: Application to aluminum oxide films on aluminum substrates. Physical Review B, 2000, 62, 4707-4719.	3.2	248
3	Fluorinated ether electrolyte with controlled solvation structure for high voltage lithium metal batteries. Nature Communications, 2022, 13, 2575.	12.8	147
4	Promoting exclusive Î±-Al2O3 growth upon high-temperature oxidation of NiCrAl alloys: experiment versus model predictions. Acta Materialia, 2005, 53, 1643-1653.	7.9	105
5	Thermodynamics of reactions and phase transformations at interfaces and surfaces. International Journal of Materials Research, 2009, 100, 1281-1307.	0.3	102
6	Thermodynamics and mechanism of metal-induced crystallization in immiscible alloy systems: Experiments and calculations on Al/a-Ge and Al/a-Si bilayers. Physical Review B, 2008, 77, .	3.2	96
7	Modelling the thermal oxidation of ternary alloysâ€"compositional changes in the alloy and the development of oxide phases. Acta Materialia, 2003, 51, 5295-5307.	7.9	94
8	Structure of thin aluminium-oxide films determined from valence band spectra measured using XPS. Surface Science, 2002, 496, 97-109.	1.9	92
9	Mineralization from Aqueous Solutions of Zinc Salts Directed by Amino Acids and Peptides. Chemistry of Materials, 2006, 18, 179-186.	6.7	87
10	The thermodynamic stability of amorphous oxide overgrowths on metals. Acta Materialia, 2008, 56, 659-674.	7.9	78
11	Cost-effective sol-gel synthesis of porous CuO nanoparticle aggregates with tunable specific surface area. Scientific Reports, 2019, 9, 11758.	3.3	76
12	Origins of stress development during metal-induced crystallization and layer exchange: Annealing amorphous Ge/crystalline Al bilayers. Acta Materialia, 2008, 56, 5047-5057.	7.9	75
13	On the Microstructure of the Initial Oxide Grown by Controlled Annealing and Oxidation on a NiCoCrAlY Bond Coating. Oxidation of Metals, 2005, 64, 355-377.	2.1	70
14	Thermal stability of Cu/W nano-multilayers. Acta Materialia, 2016, 107, 345-353.	7.9	70
15	Building a Better Liâ€Garnet Solid Electrolyte/Metallic Li Interface with Antimony. Advanced Energy Materials, 2021, 11, 2102086.	19.5	70
16	Structural ordering of ultra-thin, amorphous aluminium-oxide films. Surface Science, 2005, 589, 98-105.	1.9	69
17	Amorphous versus crystalline state for ultrathin Al2O3 overgrowths on Al substrates. Journal of Applied Physics, 2008, 103, .	2.5	69
18	Real-Time Visualization of Convective Transportation of Solid Materials at Nanoscale. Nano Letters, 2012, 12, 6126-6132.	9.1	63

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19	Effect of temperature on the initial, thermal oxidation of zirconium. Acta Materialia, 2005, 53, 2925-2935.	7.9	61
20	Fundamentals of Metalâ€induced Crystallization of Amorphous Semiconductors. Advanced Engineering Materials, 2009, 11, 131-135.	3.5	61
21	Effect of adatom surface diffusivity on microstructure and intrinsic stress evolutions during Ag film growth. Journal of Applied Physics, 2012, 112, .	2.5	61
22	The effect of substrate orientation on the kinetics of ultra-thin oxide-film growth on Al single crystals. Acta Materialia, 2008, 56, 2897-2907.	7.9	56
23	Nanomechanical Properties of Bioinspired Organicâ€"Inorganic Composite Films. Advanced Materials, 2007, 19, 970-974.	21.0	55
24	Hard x-ray photoelectron spectroscopy: a snapshot of the state-of-the-art in 2020. Journal of Physics Condensed Matter, 2021, 33, 233001.	1.8	55
25	Initial oxide-film growth on Mg-based MgAl alloys at room temperature. Acta Materialia, 2008, 56, 4621-4634.	7.9	54
26	The initial, thermal oxidation of zirconium at room temperature. Journal of Applied Physics, 2004, 96, 7126-7135.	2.5	44
27	Tailoring the Ultrathin Al-Induced Crystallization Temperature of Amorphous Si by Application of Interface Thermodynamics. Physical Review Letters, 2008, 100, 125503.	7.8	43
28	Thermodynamic model of oxide overgrowth on bare metals: Relaxation of growth strain by plastic deformation. Physical Review B, 2006, 74, .	3.2	42
29	The origin of high-mismatch orientation relationships for ultra-thin oxide overgrowths. Acta Materialia, 2007, 55, 6027-6037.	7.9	42
30	Oxidation kinetics of amorphous Al Zr1â˜' alloys. Acta Materialia, 2016, 103, 311-321.	7.9	40
31	Oxidation Behavior of Feâ€"25Crâ€"20Niâ€"2.8Si During Isothermal Oxidation at 1,286ÂK; Life-time Prediction. Oxidation of Metals, 2008, 69, 265-285.	2.1	39
32	Thermal oxidation of amorphous Al0.44Zr0.56 alloys. Acta Materialia, 2015, 87, 187-200.	7.9	38
33	Metalâ€Catalyzed Growth of Semiconductor Nanostructures Without Solubility and Diffusivity Constraints. Advanced Materials, 2011, 23, 854-859.	21.0	36
34	<i>In situ</i> oxidation studies of Cu thin films: Growth kinetics and oxide phase evolution. Journal of Applied Physics, 2020, 127, .	2.5	35
35	Theoretical Analysis of Melting Point Depression of Pure Metals in Different Initial Configurations. Journal of Materials Engineering and Performance, 2014, 23, 1600-1607.	2.5	34
36	Quantitative analysis of angle-resolved XPS spectra recorded in parallel data acquisition mode. Surface and Interface Analysis, 2004, 36, 1629-1636.	1.8	33

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37	Atomic transport mechanisms in thin oxide films grown on zirconium by thermal oxidation, as-derived from 18O-tracer experiments. Acta Materialia, 2011, 59, 7498-7507.	7.9	32
38	The mechanism of low-temperature oxidation of zirconium. Acta Materialia, 2005, 53, 4871-4879.	7.9	31
39	Interfacial Design for Joining Technologies: An Historical Perspective. Journal of Materials Engineering and Performance, 2014, 23, 1608-1613.	2.5	31
40	Melting Point Depression and Fast Diffusion in Nanostructured Brazing Fillers Confined Between Barrier Nanolayers. Journal of Materials Engineering and Performance, 2016, 25, 3275-3284.	2.5	31
41	Bioinspired Deposition of TiO2 Thin Films Induced by Hydrophobins. Langmuir, 2010, 26, 6494-6502.	3.5	30
42	The effect of thermal treatment on the stress state and evolving microstructure of Cu/W nano-multilayers. Journal of Applied Physics, 2016, 120, .	2.5	29
43	Observation and Origin of Extraordinary Atomic Mobility at Metal-Semiconductor Interfaces at Low Temperatures. Physical Review Letters, 2015, 115, 016102.	7.8	28
44	Massive Ag migration through metal/ceramic nano-multilayers: an interplay between temperature, stress-relaxation and oxygen-enhanced mass transport. Journal of Materials Chemistry C, 2016, 4, 4927-4938.	5.5	28
45	Concepts for chemical state analysis at constant probing depth by labâ€based XPS/HAXPES combining soft and hard Xâ€ray sources. Surface and Interface Analysis, 2020, 52, 802-810.	1.8	28
46	Deposition of Composite Titania/Vanadia Thin Films by Chemical Bath Deposition. Chemistry of Materials, 2004, 16, 4199-4201.	6.7	27
47	Valence-Band and Chemical-State Analyses of Zr and O in Thermally Grown Thin Zirconium-Oxide Films: An XPS Study. Journal of Physical Chemistry C, 2011, 115, 19841-19848.	3.1	26
48	Kinetics and magnitude of the reversible stress evolution during polycrystalline film growth interruptions. Journal of Applied Physics, 2015, 118, .	2.5	26
49	Reduction of thermally grown single-phase CuO and Cu2O thin films by in-situ time-resolved XRD. Applied Surface Science, 2022, 588, 152896.	6.1	26
50	Influence of polyvinyl pyrrolidone on the formation and properties of ZnO thin films in chemical bath deposition. Materials Science and Engineering C, 2006, 26, 41-45.	7.3	25
51	Unexpected room-temperature ferromagnetism in bulk ZnO. Applied Physics Letters, 2013, 103, .	3.3	25
52	Structural evolution of Agâ€"Cu nano-alloys confined between AlN nano-layers upon fast heating. Physical Chemistry Chemical Physics, 2015, 17, 28228-28238.	2.8	25
53	Anomalous texture development induced by grain yielding anisotropy in Ni and Ni-Mo alloys. Acta Materialia, 2020, 200, 857-868.	7.9	25
54	The initial oxidation of Alâ€"Mg alloys: Depth-resolved quantitative analysis by angle-resolved x-ray photoelectron spectroscopy and real-time <i>in situ</i> ellipsometry. Journal of Applied Physics, 2009, 106, .	2.5	24

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55	Intrinsic stress evolution during amorphous oxide film growth on Al surfaces. Applied Physics Letters, 2014, 104, 091901.	3.3	24
56	Electronic and structural characterization of barrier-type amorphous aluminium oxide. Electrochimica Acta, 2017, 224, 503-516.	5.2	24
57	Effect of internal stress on short-circuit diffusion in thin films and nanolaminates: Application to Cu/W nano-multilayers. Applied Surface Science, 2020, 508, 145254.	6.1	24
58	Growth kinetics and mechanism of the initial oxidation of Al-based Alâ€“Mg alloys. Corrosion Science, 2010, 52, 2556-2564.	6.6	23
59	Thermodynamics controls amorphous oxide formation: Exclusive formation of a stoichiometric amorphous (Al0.33Zr0.67)O1.83 phase upon thermal oxidation of Alâ€“Zr. Acta Materialia, 2015, 94, 134-142.	7.9	23
60	Effect of the individual layer thickness on the transformation of Cu/W nano-multilayers into nanocomposites. Materialia, 2019, 7, 100400.	2.7	23
61	Laminates of zinc oxide and poly(amino acid) layers with enhanced mechanical performance. Nanotechnology, 2007, 18, 345707.	2.6	22
62	Quantitative analysis of multi-element oxide thin films by angle-resolved XPS: Application to ultra-thin oxide films on MgAl substrates. Applied Surface Science, 2006, 253, 627-638.	6.1	20
63	Interface thermodynamics of ultra-thin, amorphous oxide overgrowths on AlMg alloys. Acta Materialia, 2010, 58, 1770-1781.	7.9	20
64	The different initial oxidation kinetics of Zr(0001) and Zr(101â¯0) surfaces. Journal of Applied Physics, 2011, 110, .	2.5	19
65	The initial oxidation of zirconiumâ€"oxide-film microstructure and growth mechanism. Surface and Interface Analysis, 2006, 38, 727-730.	1.8	18
66	Carbon incorporation and deactivation of MgO(0 0 1) supported Pd nanoparticles during CO oxidation. Catalysis Today, 2009, 145, 243-250.	4.4	18
67	Quantum Confinement Drives Macroscopic Stress Oscillations at the Initial Stage of Thin Film Growth. Physical Review Letters, 2012, 109, 045501.	7.8	18
68	Copper-Based Nanostructured Coatings for Low-Temperature Brazing Applications. Materials Transactions, 2015, 56, 1015-1018.	1.2	18
69	Ellipsometric and XPS study of the initial oxidation of zirconium at room temperature. Surface and Interface Analysis, 2004, 36, 989-992.	1.8	16
70	Relation between particle growth kinetics in solution and surface morphology of thin films: implications on the deposition of titania on polyethylene terephthalate. Thin Solid Films, 2005, 478, 164-169.	1.8	16
71	Modeling compositional changes in binary solid solutions under ion bombardment: Application to theAr+bombardment of MgAl alloys. Physical Review B, 2006, 73, .	3.2	16
72	Effect of in vacuo surface pre-treatment on the growth kinetics and chemical constitution of ultra-thin oxide films on Alâ€“Mg alloy substrates. Surface Science, 2010, 604, 588-595.	1.9	16

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73	Phase constitution and interface structure of nano-sized Ag-Cu/AlN multilayers: Experiment and <i>ab initio</i> modeling. Applied Physics Letters, 2012, 101, .	3.3	16
74	Hard X-ray Photoelectron Spectroscopy (HAXPES) characterisation of electrochemical passivation oxide layers on Alâ€“Crâ€“Fe complex metallic alloys (CMAs). Electrochemistry Communications, 2014, 46, 13-17.	4.7	16
75	Study of the hydrogen uptake in deformed steel using the microcapillary cell technique. Corrosion Science, 2019, 155, 55-66.	6.6	16
76	On the development of longâ€range order in ultraâ€thin amorphous Al₂O₃ films upon their transformation into crystalline Î³â€Al₂O₃. Surface and Interface Analysis, 2008, 40, 259-263.	1.8	15
77	The influence of ZnO-binding 12-mer peptides on bio-inspired ZnO formation. CrystEngComm, 2014, 16, 5301.	2.6	15
78	Ionic liquid assisted fabrication of high performance SWNTs reinforced ceramic matrix nano-composites. Ceramics International, 2017, 43, 2297-2304.	4.8	15
79	Effect of atomic structure on preferential oxidation of alloys: amorphous versus crystalline Cu-Zr. Journal of Materials Science and Technology, 2020, 40, 128-134.	10.7	15
80	Synthesis of V-doped TiO2 films by chemical bath deposition and the effect of post-annealing on their properties. Thin Solid Films, 2012, 520, 5928-5935.	1.8	14
81	Atomic structure, electronic structure and thermal stability of amorphous Al x Zr 1âˆ’x (0.26 â‰ x â‰) Tj ETQq1 1 0.784314 rgBT /Ove	3.1	14
82	Oxideâ€film growth kinetics on Zr(0001) and Zr(1010) singleâ€crystal surfaces. Surface and Interface Analysis, 2010, 42, 588-591.	1.8	13
83	The amorphous to crystalline transition of ultrathin (Al,Mg)-oxide films grown by thermal oxidation of AlMg alloys: A high-resolution transmission electron microscopy investigation. Journal of Materials Research, 2010, 25, 871-879.	2.6	13
84	Modeling of Interface and Internal Disorder Applied to XRD Analysis of Ag-Based Nano-Multilayers. ACS Applied Materials & Interfaces, 2018, 10, 20938-20949.	8.0	13
85	Joining with Reactive Nano-Multilayers: Influence of Thermal Properties of Components on Joint Microstructure and Mechanical Performance. Applied Sciences (Switzerland), 2019, 9, 262.	2.5	13
86	Relation between Particle Growth in Solution and Composition of Mixed Titania/Vanadium Oxide Films:Â Implications for Chemical Bath Deposition. Chemistry of Materials, 2006, 18, 4465-4472.	6.7	12
87	Real-time, in situ spectroscopic ellipsometry for analysis of the kinetics of ultrathin oxide-film growth on MgAl alloys. Journal of Applied Physics, 2006, 100, 044903.	2.5	12
88	Biomimetic formation of Titania Thin Films: Effect of Amino Acids on the Deposition Process. ACS Applied Materials & Interfaces, 2011, 3, 1624-1632.	8.0	12
89	A combinatorial guide to phase formation and surface passivation of tungsten titanium oxide prepared by thermal oxidation. Acta Materialia, 2020, 186, 95-104.	7.9	12
90	Effect of structural order on oxidation kinetics and oxide phase evolution of Alâ€“Zr alloys. Corrosion Science, 2020, 165, 108407.	6.6	12

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91	On the competition between synchronous oxidation and preferential oxidation in Cu-Zr-Al metallic glasses. Corrosion Science, 2020, 177, 108996.	6.6	12
92	Investigation of metalâ€induced crystallization in amorphous Ge/crystalline Al bilayers by Auger microanalysis and selectedâ€area depth profiling. Surface and Interface Analysis, 2008, 40, 427-432.	1.8	11
93	The role of the initial oxideâ€film microstructure on the passivation behavior of Al metal surfaces. Surface and Interface Analysis, 2008, 40, 281-284.	1.8	11
94	The effect of pre-oxidation treatment on the corrosion behavior of amorphous Al 1âˆ’x Zr x solid-solution alloys. Electrochimica Acta, 2016, 188, 31-39.	5.2	11
95	Electrophoretic Deposition of Nanoporous Oxide Coatings from Concentrated CuO Nanoparticle Dispersions. Langmuir, 2020, 36, 8075-8085.	3.5	11
96	Interface and layer periodicity effects on the thermal conductivity of copper-based nanomultilayers with tungsten, tantalum, and tantalum nitride diffusion barriers. Journal of Applied Physics, 2020, 128, .	2.5	11
97	Thermal stability of Al-Si12at.% nano-alloys confined between AlN layers in a nanomultilayer configuration. Scripta Materialia, 2017, 130, 210-213.	5.2	10
98	The Effect of Interfacial Ge and RF-Bias on the Microstructure and Stress Evolution upon Annealing of Ag/AlN Multilayers. Applied Sciences (Switzerland), 2018, 8, 2403.	2.5	10
99	Aqueous Deposition of Ultraviolet Luminescent Columnar Tinâ€Doped Indium Hydroxide Films. Advanced Functional Materials, 2008, 18, 2572-2583.	14.9	9
100	In situ coherent X-ray diffraction of isolated coreâ€“shell nanowires. Thin Solid Films, 2013, 530, 113-119.	1.8	9
101	Tailoring Fast Directional Mass Transport of Nano-Confined Agâ€“Cu Alloys upon Heating: Effect of the AlN Barrier Thickness. ACS Applied Materials & Interfaces, 2019, 11, 6605-6614.	8.0	9
102	Mixed anodic oxides for forming-free memristors revealed by combinatorial screening of hafnium-tantalum system. Applied Materials Today, 2022, 26, 101270.	4.3	9
103	Anodizing of Self-Passivating W_{<i>x</i>}Ti_{1â€“<i>x</i>} Precursors for W_{<i>x</i>}Ti_{1â€“<i>x</i>}O_{<i>n</i>} Oxide Alloys with Tailored Stability. ACS Applied Materials & Interfaces, 2019, 11, 9510-9518.	8.0	8
104	Impact of Electrolyte Incorporation in Anodized Niobium on Its Resistive Switching. Nanomaterials, 2022, 12, 813.	4.1	8
105	Thermodynamic modeling of the initial microstructural evolution of oxide films grown on bare copper. Thin Solid Films, 2008, 516, 1457-1460.	1.8	7
106	High-resolution transmission-electron-microscopy study of ultrathin Al-induced crystallization of amorphous Si. Journal of Materials Research, 2009, 24, 3294-3299.	2.6	7
107	An STM study of the initial oxidation of single-crystalline zirconium surfaces. Surface Science, 2012, 606, 846-851.	1.9	7
108	Evolution of surface stress during oxygen exposure of clean Si(111), Si(100), and amorphous Si surfaces. Journal of Applied Physics, 2014, 115, .	2.5	7

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109	Substrate Purity Effect on the Defect Formation and Properties of Amorphous Anodic Barrier Al₂O₃. Journal of the Electrochemical Society, 2018, 165, C422-C431.	2.9	7
110	Reactive Joining of Thermally and Mechanically Sensitive Materials. Journal of Electronic Packaging, Transactions of the ASME, 2018, 140, .	1.8	6
111	Local Deformation-Controlled Fast Directional Metal Outflow in Metal/Ceramic Nanolayer Sandwiches upon Low Temperature Annealing. ACS Applied Materials & Interfaces, 2019, 11, 39046-39053.	8.0	6
112	Revealing the univariate effect of structural order on the oxidation of ternary alloys: Amorphous vs. crystalline Cuâ€“Zrâ€“Al alloys. Corrosion Science, 2021, 183, 109309.	6.6	6
113	Nano-Structured Cu/W Brazing Fillers for Advanced Joining Applications. Journal of Materials Science and Engineering B, 2016, 6, .	0.3	6
114	Stress tuning in sputter-grown Cu and W films for Cu/W nanomultilayer design. Journal of Applied Physics, 2022, 131, .	2.5	6
115	Mechanisms of Aluminium-Induced Crystallization and Layer Exchange Upon Low-Temperature Annealing of Amorphous Si/Polycrystalline Al Bilayers. Journal of Nanoscience and Nanotechnology, 2009, 9, 3364-3371.	0.9	5
116	Thermal stability of Al/nanocrystalline-Si bilayers investigated by in situ heating energy-filtered transmission electron microscopy. Journal of Materials Science, 2011, 46, 4314-4317.	3.7	5
117	Generation of luminescence in biomineralized zirconia by zirconia-binding peptides. CrystEngComm, 2015, 17, 1783-1790.	2.6	5
118	Maskless Patterning of Metal Outflow in Alternating Metal/Ceramic Multiple Nanolayers by Femtosecond Laser Irradiation. Journal of Physical Chemistry C, 2020, 124, 1178-1189.	3.1	5
119	Fast and Reliable Agâ€“Sn Transient Liquid Phase Bonding by Combining Rapid Heating with Low-Power Ultrasound. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2022, 53, 2195-2207.	2.2	5
120	Atomistic Assessment of Melting Point Depression and Enhanced Interfacial Diffusion of Cu in Confinement with AlN. ACS Applied Materials & Interfaces, 2022, 14, 26099-26115.	8.0	5
121	Strategy for Applying Microanalytical Techniques. Mikrochimica Acta, 2004, 145, 215-221.	5.0	4
122	In Vivo Shaping of Inorganic Functional Devices using Microalgae. Advanced Biology, 2020, 4, e1900301.	3.0	3
123	Strain depth profiles in thin films extracted from in-plane X-ray diffraction. Journal of Applied Crystallography, 2021, 54, 87-98.	4.5	2
124	Nacre-like TiO2 - and ZnO- Based Organic / Inorganic Hybrid Systems. Materials Research Society Symposia Proceedings, 2007, 1007, 1.	0.1	1
125	Heterogeneous growth of single crystals on polycrystals. Physical Review B, 2017, 95, .	3.2	1
126	Acceleration measurements during reactive bonding processes. , 2017, , .		1

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127	Deposition of Composite Titania/Vanadia Thin Films by Chemical Bath Deposition.. ChemInform, 2005, 36, no.	0.0	0
128	Validation of an Embedded-Atom Copper Classical Potential via Bulk and Nanostructure Simulations. , 0, 12, 74-92.		0