

# Gnter Mbus

## List of Publications by Citations

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papers

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98  
ext. papers

2,312  
ext. citations

3.7  
avg, IF

4.73  
L-index

#	Paper	IF	Citations
97	Nanoscale tomography in materials science. <i>Materials Today</i> , <b>2007</b> , 10, 18-25	21.8	203
96	Spectroscopic electron tomography. <i>Ultramicroscopy</i> , <b>2003</b> , 96, 433-51	3.1	154
95	New high-voltage atomic resolution microscope approaching 1 Å point resolution installed in Stuttgart. <i>Ultramicroscopy</i> , <b>1994</b> , 56, 1-10	3.1	145
94	Three-dimensional reconstruction of buried nanoparticles by element-sensitive tomography based on inelastically scattered electrons. <i>Applied Physics Letters</i> , <b>2001</b> , 79, 1369-1371	3.4	93
93	Structure determination of metal-ceramic interfaces by numerical contrast evaluation of HRTEM micrographs. <i>Ultramicroscopy</i> , <b>1994</b> , 56, 54-70	3.1	91
92	Strain and Architecture-Tuned Reactivity in Ceria Nanostructures; Enhanced Catalytic Oxidation of CO to CO <sub>2</sub> . <i>Chemistry of Materials</i> , <b>2012</b> , 24, 1811-1821	9.6	84
91	Subsurface nanoindentation deformation of Cu-Al multilayers mapped in 3D by focused ion beam microscopy. <i>Journal of Microscopy</i> , <b>2001</b> , 201, 256-269	1.9	71
90	Subsurface damage analysis by TEM and 3D FIB crack mapping in alumina and alumina/5vol.%SiC nanocomposites. <i>Acta Materialia</i> , <b>2003</b> , 51, 149-163	8.4	65
89	Environment and oxidation state of molybdenum in simulated high level nuclear waste glass compositions. <i>Journal of Nuclear Materials</i> , <b>2005</b> , 340, 179-186	3.3	65
88	Retrieval of crystal defect structures from HREM images by simulated evolution I. Basic technique. <i>Ultramicroscopy</i> , <b>1996</b> , 65, 205-216	3.1	57
87	Environment-mediated structure, surface redox activity and reactivity of ceria nanoparticles. <i>Nanoscale</i> , <b>2013</b> , 5, 6063-73	7.7	56
86	Reconstruction of 3D morphology of polyhedral nanoparticles. <i>Nanotechnology</i> , <b>2007</b> , 18, 225501	3.4	49
85	Mapping nanostructure: a systematic enumeration of nanomaterials by assembling nanobuilding blocks at crystallographic positions. <i>ACS Nano</i> , <b>2008</b> , 2, 1237-51	16.7	48
84	Cationic surface reconstructions on cerium oxide nanocrystals: an aberration-corrected HRTEM study. <i>ACS Nano</i> , <b>2012</b> , 6, 421-30	16.7	47
83	Molten salt synthesis of silicon carbide nanorods using carbon nanotubes as templates. <i>Journal of Materials Chemistry</i> , <b>2011</b> , 21, 18325		47
82	Adaptive fourier-filtering technique for quantitative evaluation of high-resolution electron micrographs of interfaces. <i>Ultramicroscopy</i> , <b>1993</b> , 49, 46-65	3.1	45
81	Synthesis of analytical and high-resolution transmission electron microscopy to determine the interface structure of Cu/Al <sub>2</sub> O <sub>3</sub> . <i>Ultramicroscopy</i> , <b>1997</b> , 67, 207-217	3.1	44

80	Nanoscale characterization of CoPt/Pt multilayer nanowires. <i>Nanotechnology</i> , <b>2007</b> , 18, 485704	3.4	42
79	Retrieval of crystal defect structures from HREM images by simulated evolution II. Experimental image evaluation. <i>Ultramicroscopy</i> , <b>1996</b> , 65, 217-228	3.1	41
78	Dynamics of Polar Surfaces on Ceria Nanoparticles Observed In Situ with Single-Atom Resolution. <i>Advanced Functional Materials</i> , <b>2011</b> , 21, 1971-1976	15.6	37
77	Mechanical properties of ceria nanorods and nanochains; the effect of dislocations, grain-boundaries and oriented attachment. <i>Nanoscale</i> , <b>2011</b> , 3, 1823-37	7.7	36
76	Nano-scale quasi-melting of alkali-borosilicate glasses under electron irradiation. <i>Journal of Nuclear Materials</i> , <b>2010</b> , 396, 264-271	3.3	36
75	Engineering of nanoscale defect patterns in CeO <sub>2</sub> nanorods via ex situ and in situ annealing. <i>Nanoscale</i> , <b>2015</b> , 7, 5169-77	7.7	35
74	Cerium and boron chemistry in doped borosilicate glasses examined by EELS. <i>Micron</i> , <b>2006</b> , 37, 433-41	2.3	35
73	In situ TEM observation of lithium nanoparticle growth and morphological cycling. <i>Nanoscale</i> , <b>2012</b> , 4, 1754-9	7.7	33
72	Three-dimensional chemical analysis of tungsten probes by energy dispersive x-ray nanotomography. <i>Applied Physics Letters</i> , <b>2007</b> , 91, 251906	3.4	33
71	Nanobeam propagation and imaging in a FEGTEM/STEM. <i>Ultramicroscopy</i> , <b>2003</b> , 96, 285-98	3.1	32
70	IMAGE-WARP: a real-space restoration method for high-resolution STEM images using quantitative HRTEM analysis. <i>Ultramicroscopy</i> , <b>2005</b> , 103, 285-301	3.1	30
69	3-D focused ion beam mapping of nanoindentation zones in a Cu <sub>2</sub> Ni multilayered coating. <i>Thin Solid Films</i> , <b>2002</b> , 413, 147-154	2.2	29
68	Morphology and Surface Analysis of Pure and Doped Cuboidal Ceria Nanoparticles. <i>Journal of Physical Chemistry C</i> , <b>2013</b> , 117, 24561-24569	3.8	26
67	Nanoscale Tribology, Energy Dissipation and Failure Mechanisms of Nano- and Micro-silica Particle-filled Polymer Composites. <i>Tribology Letters</i> , <b>2009</b> , 34, 11-19	2.8	26
66	Electron tomography of regularly shaped nanostructures under non-linear image acquisition. <i>Journal of Microscopy</i> , <b>2008</b> , 232, 186-95	1.9	24
65	Measurement of coherency states of metal/ceramic interfaces by HREM image processing. <i>Physica Status Solidi A</i> , <b>1995</b> , 150, 77-87		23
64	The relationship between particle morphology and rheological properties in injectable nano-hydroxyapatite bone graft substitutes. <i>Materials Science and Engineering C</i> , <b>2017</b> , 75, 1083-1090	8.3	21
63	Structure of misfit dislocations in niobium/sapphire interfaces and strength of interfacial bonding: an atomistic study. <i>Acta Materialia</i> , <b>1999</b> , 47, 4143-4152	8.4	21

62	The Influence of Phonon Scattering on HREM Images. <i>Acta Crystallographica Section A: Foundations and Advances</i> , <b>1998</b> , 54, 83-90		17
61	Preparation and Antibacterial Properties of Silver-Doped Nanoscale Hydroxyapatite Pastes for Bone Repair and Augmentation. <i>Journal of Biomedical Nanotechnology</i> , <b>2017</b> , 13, 1168-1176	4	16
60	Three-dimensional metrology and fractal analysis of dendritic nanostructures. <i>Physical Review B</i> , <b>2008</b> , 78,	3.3	14
59	Giant Radiolytic Dissolution Rates of Aqueous Ceria Observed in Situ by Liquid-Cell TEM. <i>ChemPhysChem</i> , <b>2017</b> , 18, 1247-1251	3.2	13
58	Tomographic nanofabrication of ultrasharp three-dimensional nanostructures. <i>Applied Physics Letters</i> , <b>2008</b> , 93, 153102	3.4	11
57	Comparison of nanoparticulate hydroxyapatite pastes of different particle content and size in a novel scapula defect model. <i>Scientific Reports</i> , <b>2017</b> , 7, 43425	4.9	10
56	Three-Dimensional Structure of CeO <sub>2</sub> Nanodendrites in Glass. <i>Crystal Growth and Design</i> , <b>2008</b> , 8, 1102-1105	3.5	10
55	Applications of a Cs Corrected HRTEM in Materials Science. <i>Microscopy and Microanalysis</i> , <b>2002</b> , 8, 10-11	0.5	10
54	Conductive nichrome probe tips: fabrication, characterization and application as nanotools. <i>Nanotechnology</i> , <b>2009</b> , 20, 395708	3.4	9
53	3D Reconstruction of SPM Probes by Electron Tomography. <i>Journal of Physics: Conference Series</i> , <b>2007</b> , 61, 810-814	0.3	9
52	CeO <sub>2</sub> nano-precipitation in borosilicate glasses: A redox study using EELS. <i>Journal of the European Ceramic Society</i> , <b>2010</b> , 30, 831-838	6	8
51	Fine structure EELS analysis of glasses and glass composites. <i>Journal of Physics: Conference Series</i> , <b>2006</b> , 26, 73-76	0.3	8
50	Zn nanodot patterning in borosilicate glasses by electron irradiation. <i>Journal of Materials Research</i> , <b>2015</b> , 30, 1914-1924	2.5	7
49	Electron Irradiation and Electron Tomography Studies of Glasses and Glass Nanocomposites. <i>Materials Research Society Symposia Proceedings</i> , <b>2008</b> , 1107, 1		7
48	In situ synthesis of cobalt nanocrystal hierarchies in a transmission electron microscope. <i>Journal of Nanoparticle Research</i> , <b>2012</b> , 14, 1	2.3	6
47	In-situ fabrication of three dimensional nickel nanobeads by electron beam induced transformation. <i>Journal of Nanoscience and Nanotechnology</i> , <b>2011</b> , 11, 1019-24	1.3	6
46	Electron beam nanofabrication of ferromagnetic nanostructures in TEM. <i>Applied Physics A: Materials Science and Processing</i> , <b>2011</b> , 102, 205-211	2.6	6
45	Novel Nanoscale Tomography Modes in Materials Science. <i>Microscopy and Microanalysis</i> , <b>2003</b> , 9, 176-177	0.5	6

44	Secondary Phases on the Surface of Real Vitrified Radioactive Waste Disposed in a Loamy Soil. <i>Materials Research Society Symposia Proceedings</i> , <b>2003</b> , 807, 712		6
43	Probability calculus for quantitative HREM. Part I: Monte-Carlo and point cloud techniques. <i>Ultramicroscopy</i> , <b>2000</b> , 85, 183-98	3.1	6
42	Nanobead Formation and Nanopatterning in Glasses. <i>Microscopy and Microanalysis</i> , <b>2008</b> , 14, 434-435	0.5	5
41	Probability calculus for quantitative HREM. Part II: entropy and likelihood concepts. <i>Ultramicroscopy</i> , <b>2000</b> , 85, 199-213	3.1	5
40	In-situ observation of radiation physics and chemistry of nanostructured cerium oxide in water. <i>Materials Research Express</i> , <b>2019</b> , 6, 015032	1.7	5
39	New insight into nanoparticle precipitation by electron beams in borosilicate glasses. <i>Applied Physics A: Materials Science and Processing</i> , <b>2017</b> , 123, 1	2.6	4
38	Atomic motion on various surfaces of ceria nanoparticles in comparison. <i>Journal of Physics: Conference Series</i> , <b>2012</b> , 371, 012007	0.3	4
37	Electron Spectroscopic Tomography for Materials Science. <i>Microscopy and Microanalysis</i> , <b>2001</b> , 7, 84-85	0.5	4
36	Electron irradiation induced nanocrystal formation in Cu-borosilicate glass. <i>Journal of Nanoparticle Research</i> , <b>2016</b> , 18, 1	2.3	3
35	Mechanical properties of mesoporous ceria nanoarchitectures. <i>Physical Chemistry Chemical Physics</i> , <b>2014</b> , 16, 24899-912	3.6	3
34	A piezoelectric goniometer inside a transmission electron microscope goniometer. <i>Microscopy and Microanalysis</i> , <b>2011</b> , 17, 827-33	0.5	3
33	In situ and ex situ transmission electron microscopy investigation of CuAlTi reactive metallic multilayer coatings. <i>Journal of Materials Research</i> , <b>2010</b> , 25, 1196-1203	2.5	3
32	On radiation-induced fluidization (quasi-melting) of silicate glasses. <i>Materials Research Society Symposia Proceedings</i> , <b>2009</b> , 1193, 393		3
31	Three-dimensional characterization of multiply twinned nanoparticles by high-angle tilt series of lattice images and tomography. <i>Journal of Nanoparticle Research</i> , <b>2010</b> , 12, 1045-1053	2.3	3
30	MRT letter: full-tilt electron tomography with a piezo-actuated rotary drive. <i>Microscopy Research and Technique</i> , <b>2008</b> , 71, 773-7	2.8	3
29	Plasmon energy chemical phase mapping of reactive multilayers. <i>Physica Status Solidi - Rapid Research Letters</i> , <b>2008</b> , 2, 7-9	2.5	3
28	Spontaneous formation of the B2 phase from a decagonal quasicrystal under reduced constraint. <i>Journal of Materials Science</i> , <b>2006</b> , 41, 6081-6086	4.3	3
27	In situ formation of 1D nanostructures from ceria nanoparticle dispersions by liquid cell TEM irradiation. <i>Journal of Materials Science</i> , <b>2020</b> , 55, 2815-2825	4.3	3

26	Perforation and Carbon Ablation Experiments on Nano-Ceria by Electron Irradiation. <i>Materials Research Society Symposia Proceedings</i> , <b>2013</b> , 1552, 125-130		2
25	Hybrid Tomography of Nanostructures in the Electron Microscope. <i>Materials Research Society Symposia Proceedings</i> , <b>2009</b> , 1184, 125		2
24	Analytical STEM of Borosilicate Glasses Containing Molybdates.. <i>Materials Research Society Symposia Proceedings</i> , <b>2004</b> , 824, 372		2
23	3d Reconstruction of Sub-Nm Beam Profiles in STEM. <i>Microscopy and Microanalysis</i> , <b>2001</b> , 7, 344-345	0.5	2
22	Tomographic Study of Mesopore Formation in Ceria Nanorods. <i>Journal of Physical Chemistry C</i> , <b>2021</b> , 125, 10077-10089	3.8	2
21	SINGLE-ATOM MOVEMENT: Dynamics of Polar Surfaces on Ceria Nanoparticles Observed In Situ with Single-Atom Resolution (Adv. Funct. Mater. 11/2011). <i>Advanced Functional Materials</i> , <b>2011</b> , 21, 1970-1970 <sup>156</sup>		1
20	Electron beam induced surface morphology changes of CeO <sub>2</sub> nanocrystals: An in-situ aberration corrected TEM study <b>2012</b> ,		1
19	A nanomanipulation system for tomographic examination of nanostructures on demand. <i>Journal of Physics: Conference Series</i> , <b>2012</b> , 371, 012051	0.3	1
18	A novel tripod-driven platform for in-situ positioning of samples and electrical probes in a TEM. <i>Journal of Physics: Conference Series</i> , <b>2010</b> , 241, 012057	0.3	1
17	Transition from quantitative to geometric tomography. <i>Journal of Physics: Conference Series</i> , <b>2008</b> , 126, 012063	0.3	1
16	EELS Spectrum Imaging and Tomography Studies of Simulated Nuclear Waste Glasses. <i>Materials Research Society Symposia Proceedings</i> , <b>2006</b> , 985, 1		1
15	3D Display and Analysis of Strain Fields at Heterointerfaces. <i>Microscopy and Microanalysis</i> , <b>2003</b> , 9, 746-747		1
14	Nanoscale 3D Chemical Mapping by Spectroscopic Electron Tomography. <i>Materials Research Society Symposia Proceedings</i> , <b>2002</b> , 738, 121		1
13	Interpretation of Atomic Resolution Eels Signals at Interfaces. <i>Microscopy and Microanalysis</i> , <b>2001</b> , 7, 1180-1181	0.5	1
12	Electron Beam Transformation of Glass Nanoparticles. <i>Journal of Physics: Conference Series</i> , <b>2017</b> , 902, 012009	0.3	
11	In-situ irradiation of cerium precursors in TEM to study nanocrystal formation. <i>Journal of Physics: Conference Series</i> , <b>2017</b> , 902, 012003	0.3	
10	Ceria-Water-Reactions Studied by Liquid Cell TEM. <i>Journal of Physics: Conference Series</i> , <b>2017</b> , 902, 012004	0.3	
9	NanoLAB Triboprobe: Characterizing Dynamic Wear, Friction and Fatigue at the Nanoscale. <i>Materials Research Society Symposia Proceedings</i> , <b>2011</b> , 1297, 65		

- 8 Electron beam synthesis of 3D metal nanostructures from fluoride precursors. *Materials Research Society Symposia Proceedings*, **2012**, 1411, 7
- 7 XTEM characterization of modulated ion implantation through self-organized anodic aluminum oxide (AAO) membranes. *Materials Research Society Symposia Proceedings*, **2012**, 1411, 39
- 6 Electron tomography of CeO<sub>2</sub> nanostructures. *Journal of Physics: Conference Series*, **2008**, 126, 012016 0.3
- 5 Electron Tomography of SPM Probes, Nanoparticles and Precipitates. *Materials Research Society Symposia Proceedings*, **2006**, 982, 1
- 4 The information content of lattice resolved high angle tilt series of nanoparticles. *Materials Research Society Symposia Proceedings*, **2007**, 1026, 1
- 3 Quantitative HAADF-STEM image analysis using IMAGE-WARP processing. *Microscopy and Microanalysis*, **2003**, 9, 52-53 0.5
- 2 Analysis of mismatched heterointerfaces by combined HREM image processing and modelling. *International Journal of Materials Research*, **2022**, 94, 358-367 0.5
- 1 EELS fine structure tomography using spectrum imaging **2008**, 427-428