Klaus van Benthem

List of Publications by Citations

137 papers	3,284 citations	28 h-index	55 g-index
144 ext. papers	3,590 ext. citations	3.5 avg, IF	5 L-index

#	Paper	IF	Citations
137	Bulk electronic structure of SrTiO3: Experiment and theory. *Journal of Applied Physics*, **2001**, 90, 6156-6164	2.5	669
136	Three-dimensional imaging of individual hafnium atoms inside a semiconductor device. *Applied Physics Letters*, **2005**, 87, 034104	3.4	184
135	MATERIALS CHARACTERIZATION IN THE ABERRATION-CORRECTED SCANNING TRANSMISSION ELECTRON MICROSCOPE. *Annual Review of Materials Research*, **2005**, 35, 539-569	12.8	159
134	The effect of interfacial layer properties on the performance of Hf-based gate stack devices. *Journal of Applied Physics*, **2006**, 100, 094108	2.5	117
133	Point defect configurations of supersaturated Au atoms inside Si nanowires. *Nano Letters*, **2008**, 8, 1016-9	11.5	111
132	Amorphous Alumina Nanoparticles: Structure, Surface Energy, and Thermodynamic Phase Stability. *Journal of Physical Chemistry C*, **2013**, 117, 17123-17130	3.8	106
131	Three-dimensional ADF imaging of individual atoms by through-focal series scanning transmission electron microscopy. *Ultramicroscopy*, **2006**, 106, 1062-8	3.1	100
130	Au on MgAl2O4 spinels: The effect of support surface properties in glycerol oxidation. *Journal of Catalysis*, **2010**, 275, 108-116	7.3	90
129	Dopant segregation and giant magnetoresistance in manganese-doped germanium. *Physical Review B*, **2007**, 75,	3.3	81
128	Electrode Effects on Microstructure Formation During FLASH Sintering of Yttrium-Stabilized Zirconia. *Journal of the American Ceramic Society*, **2016**, 99, 2253-2259	3.8	77
127	Aberration-corrected scanning transmission electron microscopy: from atomic imaging and analysis to solving energy problems. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2009**, 367, 3709-33	3	76
126	Single Pd atoms in activated carbon fibers and their contribution to hydrogen storage. *Carbon*, **2011**, 49, 4050-4058	10.4	65
125	Interpreting atomic-resolution spectroscopic images. *Physical Review B*, **2007**, 76,	3.3	62
124	Valence electron energy loss study of Fe-doped SrTiO3 and a sigma13 boundary: electronic structure and dispersion forces. *Ultramicroscopy*, **2001**, 86, 303-18	3.1	60
123	Optimal doping control of magnetic semiconductors via subsurfactant epitaxy. *Physical Review Letters*, **2008**, 100, 066101	7.4	54
122	Metal/ceramic interface structures and segregation behavior in aluminum-based composites. *Acta Materialia*, **2015**, 95, 254-263	8.4	47
121	Evidence of surface cleaning during electric field assisted sintering. *Scripta Materialia*, **2013**, 69, 769-772	5.6	45

120	Synthesis and Sintering Behavior of Ultrafine (. *Journal of the American Ceramic Society*, **2013**, 96, 2077-2085	3.8	42
119	Investigation into the microstructure evolution caused by nanoscratch-induced room temperature deformation in M-plane sapphire. *Acta Materialia*, **2011**, 59, 5181-5193	8.4	40
118	Observations on the Influence of Secondary Me Oxide Additives (Me=Si, Al, Mg) on the Microstructural Evolution and Mechanical Behavior of Silicon Nitride Ceramics Containing RE2O3 (RE=La, Gd, Lu). *Journal of the American Ceramic Society*, **2010**, 93, 570-580	3.8	40
117	Depth sectioning in scanning transmission electron microscopy based on core-loss spectroscopy. *Ultramicroscopy*, **2007**, 108, 17-28	3.1	37
116	Progress in the Preparation of Cross-Sectional TEM Specimens by Ion-Beam Thinning. *International Journal of Materials Research*, **2003**, 94, 290-297		36
115	Low Temperature Sintering of Nanocrystalline Zinc Oxide: Effect of Heating Rate Achieved by Field Assisted Sintering/Spark Plasma Sintering. *Journal of the American Ceramic Society*, **2012**, 95, 2451-2457	3.8	34
114	First-principles study of rare earth adsorption at Si3N4 interfaces. *Physical Review B*, **2008**, 78,	3.3	34
113	Local optical properties, electron densities, and london dispersion energies of atomically structured grain boundaries. *Physical Review Letters*, **2004**, 93, 227201	7.4	33
112	Core-hole effects on the ELNES of absorption edges in SrTiO3. *Ultramicroscopy*, **2003**, 96, 509-22	3.1	33
111	Experimental Methodologies for Assessing the Surface Energy of Highly Hygroscopic Materials: The Case of Nanocrystalline Magnesia. *Journal of Physical Chemistry C*, **2011**, 115, 23929-23935	3.8	32
110	Ultra-long Magnetic Nanochains for Highly Efficient Arsenic Removal from Water. *Journal of Materials Chemistry A*, **2014**, 2, 12974-12981	13	29
109	Field assisted sintering of nickel nanoparticles during in situ transmission electron microscopy. *Applied Physics Letters*, **2010**, 96, 243106	3.4	27
108	Thermodynamics versus kinetics of grain growth control in nanocrystalline zirconia. *Acta Materialia*, **2017**, 136, 224-234	8.4	25
107	Temperature gradient and microstructure evolution in AC flash sintering of 3 mol% yttria-stabilized zirconia. *Materials and Manufacturing Processes*, **2017**, 32, 549-556	4.1	25
106	Structural changes during the reaction of Ni thin films with (100) silicon substrates. *Acta Materialia*, **2012**, 60, 2668-2678	8.4	24
105	STEM imaging of single Pd atoms in activated carbon fibers considered for hydrogen storage. *Carbon*, **2011**, 49, 4059-4063	10.4	24
104	Dislocation mediated alignment during metal nanoparticle coalescence. *Acta Materialia*, **2016**, 120, 364-378	8.4	23
103	Time-dependent dielectric breakdown of surface oxides during electric-field-assisted sintering. *Acta Materialia*, **2014**, 63, 140-149	8.4	23

102	In situ transmission electron microscopy study of dielectric breakdown of surface oxides during electric field-assisted sintering of nickel nanoparticles. *Applied Physics Letters*, **2012**, 101, 093107	3.4	22
101	Bismuth Doping of Germanium Nanocrystals through Colloidal Chemistry. *Chemistry of Materials*, **2017**, 29, 7353-7363	9.6	21
100	Strong immobilization of charge carriers near the surface of a solid oxide electrolyte. *Journal of Materials Chemistry*, **2010**, 20, 3855		21
99	Europium sulfide nanoparticles in the sub-2nm size regime. *Materials Chemistry and Physics*, **2009**, 115, 526-529	4.4	21
98	Graded interface models for more accurate determination of van der Waals□london dispersion interactions across grain boundaries. *Physical Review B*, **2006**, 74,	3.3	20
97	Consolidation of Partially Stabilized ZrO_{2} in the Presence of a Noncontacting Electric Field. *Physical Review Letters*, **2015**, 114, 195503	7.4	19
96	Chapter 9 Materials Applications of Aberration-Corrected Scanning Transmission Electron Microscopy. *Advances in Imaging and Electron Physics*, **2008**, 327-384	0.2	19
95	Electronic structure investigations of Ni and Cr films on (100)SrTiO3substrates using electron energy-loss spectroscopy. *International Journal of Materials Research*, **2002**, 93, 362-371		18
94	Simultaneous Scanning Electron Microscope Imaging of Topographical and Chemical Contrast Using In-Lens, In-Column, and Everhart-Thornley Detector Systems. *Microscopy and Microanalysis*, **2016**, 22, 565-75	0.5	17
93	Sr0.95Fe0.5Co0.5O3□Ce0.9Gd0.1O2□dual-phase membrane: Oxygen permeability, phase stability, and chemical compatibility. *Journal of Membrane Science*, **2014**, 462, 153-159	9.6	17
92	Mechanical properties of individual MgAl2O4 agglomerates and their effects on densification. *Acta Materialia*, **2014**, 69, 187-195	8.4	17
91	In-situ observation of equilibrium transitions in Ni films; agglomeration and impurity effects. *Ultramicroscopy*, **2014**, 137, 55-65	3.1	17
90	Experimental probe of adsorbate binding energies at internal crystalline/amorphous interfaces in Gd-doped Si3N4. *Applied Physics Letters*, **2008**, 92, 163110	3.4	17
89	Metal/ceramic Interface Structures and Segregation Behavior in Aluminum-based Composites. *Microscopy and Microanalysis*, **2015**, 21, 1053-1054	0.5	16
88	In situ transmission electron microscopic investigations of reduction-oxidation reactions during densification of nickel nanoparticles. *Journal of Materials Research*, **2012**, 27, 2431-2440	2.5	15
87	Scanning Transmission Electron Microscopy for Nanostructure Characterization **2006**, 152-191		15
86	Single Hf atoms inside the ultrathin SiO2 interlayer between a HfO2 dielectric film and the Si substrate: How do they modify the interface?. *Microelectronic Engineering*, **2005**, 80, 416-419	2.5	15
85	Cross-sectional characterization of the dewetting of a Au/Ni bilayer film. *Ultramicroscopy*, **2017**, 178, 131-139	3.1	14

84	Efficient and Hysteresis-Free Field Effect Modulation of Ambipolarly Doped Vanadium Dioxide Nanowires. *Physical Review Applied*, **2016**, 5,	4.3	14
83	Design of Desintering in Tin Dioxide Nanoparticles. *Chemistry of Materials*, **2013**, 25, 4262-4268	9.6	14
82	Methods for ELNES-quantification: characterization of the degree of inversion of Mg-Al-spinels. *Micron*, **2000**, 31, 347-54	2.3	14
81	Agglomeration and long-range edge retraction for Au/Ni bilayer films during thermal annealing. *Acta Materialia*, **2016**, 119, 167-176	8.4	13
80	Core-hole Effect on the ELNES of SrTiO3: Experiment and Theory. *Microscopy and Microanalysis*, **2003**, 9, 68-69	0.5	13
79	Sacrificial Silver Nanoparticles: Reducing GeI2 To Form Hollow Germanium Nanoparticles by Electroless Deposition. *ACS Nano*, **2016**, 10, 5391-7	16.7	13
78	Impurity segregation and ordering in Si/SiO2/HfO2 structures. *Physical Review B*, **2008**, 77,	3.3	12
77	Quantitative analysis for in situ sintering of 3% yttria-stablized zirconia in the transmission electron microscope. *Ultramicroscopy*, **2015**, 152, 35-43	3.1	11
76	Surface Segregation in Chromium-Doped Nanocrystalline Tin Dioxide Pigments. *Journal of the American Ceramic Society*, **2012**, 95, 170-176	3.8	11
75	Preparation and characterisation of novel □ea-cucumber□like structures containing carbon and boron. *Carbon*, **2004**, 42, 2223-2231	10.4	11
74	Electrostatic fields control grain boundary structure in SrTiO3. *Applied Physics Letters*, **2018**, 113, 041604	3.4	10
73	Imaging and spectroscopy of defects in semiconductors using aberration-corrected STEM. *Applied Physics A: Materials Science and Processing*, **2009**, 96, 161-169	2.6	10
72	Advances in EELS spectroscopy by using new detector and new specimen preparation technologies. *Journal of Microscopy*, **2003**, 210, 16-24	1.9	10
71	DC Electric Field-Enhanced Grain-Boundary Mobility in Magnesium Aluminate During Annealing. *Journal of the American Ceramic Society*, **2016**, 99, 1951-1959	3.8	9
70	In-situ study of the dewetting behavior of Au/Ni bilayer films supported by a SiO2/Si substrate. *Acta Materialia*, **2017**, 140, 149-156	8.4	9
69	Nanovoids in dense hydroxyapatite ceramics after electric field assisted sintering. *Advances in Applied Ceramics*, **2018**, 117, 376-382	2.3	8
68	Robust mesoporous silica compacts: multi-scale characterization of microstructural changes related to physical□echanical properties. *Journal of Materials Science*, **2016**, 51, 4470-4480	4.3	8
67	Characterization of defect evolution in ultrathin SiO2 layers under applied electrical stress. *Journal of Applied Physics*, **2012**, 112, 103513	2.5	8

66	Robust X-Ray Phase Ptycho-Tomography. *IEEE Signal Processing Letters*, **2016**, 23, 944-948	3.2	8
65	Ion beam heating of kinetically constrained nanomaterials. *Ultramicroscopy*, **2018**, 186, 30-34	3.1	6
64	Homogeneous Silica Formed by the Oxidation of Si(100) in Hyperthermal Atomic Oxygen. *Journal of Spacecraft and Rockets*, **2006**, 43, 431-435	1.5	6
63	Bonding of thin Pd films on (100)SrTiO3 substrates: Ab initio density functional theory investigations. *Physical Review B*, **2005**, 72,	3.3	6
62	Reduction reactions and densification during TEM heating of iron oxide nanochains. *Journal of Applied Physics*, **2017**, 122, 234303	2.5	5
61	Template assisted synthesis of europium sulfide nanotubes. *Materials Letters*, **2011**, 65, 420-423	3.3	5
60	Structural and Chemical Analysis of Materials with High Spatial Resolution. *Mikrochimica Acta*, **2002**, 138, 181-193	5.8	5
59	The effect of electric fields on grain growth in MgAl2O4 spinel. *Journal of the European Ceramic Society*, **2018**, 38, 5512-5518	6	4
58	Formation of pre-silicide layers below Ni1−xPtxSi/Si interfaces. *Acta Materialia*, **2013**, 61, 2481-2488	8.4	4
57	Determination of Reliable Grain Boundary Orientation using Automated Crystallographic Orientation Mapping in the Transmission Electron Microscope. *Microscopy and Microanalysis*, **2015**, 21, 1663-1664	0.5	4
56	Local Current-Activated Growth of Individual Nanostructures with High Aspect Ratios. *Materials Research Letters*, **2014**, 2, 10-15	7.4	4
55	PtSi dominated Schottky barrier heights of Ni(Pt)Si contacts due to Pt segregation. *Applied Physics Letters*, **2013**, 102, 123507	3.4	4
54	In situ Sintering of Ni Nanoparticles by Controlled Heating. *Microscopy and Microanalysis*, **2011**, 17, 524-525	2.5	4
53	Effects of electrostatic field strength on grain-boundary core structures in SrTiO3. *Journal of the American Ceramic Society*, **2019**, 102, 4502-4510	3.8	3
52	Ligand exchange based molecular doping in 2D hybrid molecule-nanoparticle arrays: length determines exchange efficiency and conductance. *Molecular Systems Design and Engineering*, **2017**, 2, 440-448	4.6	3
51	Increased thermal conductivity polycrystalline diamond for low-dissipation micromechanical resonators **2014**,		3
50	Limitations to the measurement of oxygen concentrations by HRTEM imposed by surface roughness. *Microscopy and Microanalysis*, **2005**, 11, 111-3; author reply 113-5	0.5	3
49	Atomic and Electronic Structure Investigations of HfO2/SiO2/Si Gate Stacks Using Aberration-Corrected STEM. *AIP Conference Proceedings*, **2005**,	0	3

48	Dewetting Transitions of Au/Ni Bilayer Films. *Microscopy and Microanalysis*, **2016**, 22, 1628-1629	0.5	3
47	High speed direct imaging of thin metal film ablation by movie-mode dynamic transmission electron microscopy. *Scientific Reports*, **2016**, 6, 23046	4.9	2
46	Formation of SrTiO3 bicrystals using spark plasma sintering techniques. *Scripta Materialia*, **2016**, 118, 9-12	5.6	2
45	Effects of non-contact electric fields on consolidation behavior of agglomerated yttria-stablized zirconia. *Microscopy and Microanalysis*, **2015**, 21, 1511-1512	0.5	2
44	Depth-related Contrast in Aberration-Corrected Confocal STEM. *Microscopy and Microanalysis*, **2006**, 12, 1574-1575	0.5	2
43	Low-angle twist grain boundary in SrTiO3 fabricated by spark plasma sintering techniques. *Journal of the American Ceramic Society*, **2019**, 102, 578-586	3.8	1
42	Spark Plasma Sintering Apparatus Used for the Formation of Strontium Titanate Bicrystals. *Journal of Visualized Experiments*, **2017**,	1.6	1
41	Size-dependent stability of iron oxide evaluated through in-situ heating experiments. *Microscopy and Microanalysis*, **2017**, 23, 1718-1719	0.5	1
40	Characterization of Laser Ablation Dynamics for Nickel Thin Films on Silicon Using Movie Mode Dynamic TEM. *Microscopy and Microanalysis*, **2015**, 21, 1591-1592	0.5	1
39	Atomic Level Mechanisms of Solid-State Dewetting in Thin Metal Films Deposited on Silicon (100) Substrates. *Microscopy and Microanalysis*, **2010**, 16, 1462-1463	0.5	1
38	Atomic Resolution Characterization of Semiconductor Materials by Aberration-Corrected Transmission Electron Microscopy **2011**, 287-307		1
37	In Situ Investigation of Dielectric Breakdown in Field Effect Transistors. *Microscopy and Microanalysis*, **2010**, 16, 1298-1299	0.5	1
36	In situ anisotropic NiO nanostructure growth at high temperature and under water vapor. *Journal of the American Ceramic Society*,	3.8	1
35	High-speed nanoscale characterization of dewetting via dynamic transmission electron microscopy. *Journal of Applied Physics*, **2016**, 120, 085301	2.5	1
34	Oxidation Behavior of InAlN during Rapid Thermal Annealing. *Physica Status Solidi (A) Applications and Materials Science*, **2021**, 218, 2100304	1.6	1
33	Phase Stability of Iron Oxide Evaluated Through Selected Area Electron Diffraction During In-Situ Heating Experiments. *Microscopy and Microanalysis*, **2019**, 25, 1914-1915	0.5	0
32	Characterization of Microstructures Before, During and After Densification. *Engineering Materials*, **2012**, 215-238	0.4	0
31	3D Imaging with Single Atom Sensitivity using Confocal STEM. *Microscopy and Microanalysis*, **2006**, 12, 1562-1563	0.5	0

30	p-i-n High-Speed Photodiodes for X-Ray and Infrared Imagers Fabricated by In Situ-Doped APCVD Germanium Homoepitaxy. *IEEE Transactions on Electron Devices*, **2020**, 67, 3235-3241	2.9	0
29	In-situ anisotropic growth of nickel oxide nanostructures through layer-by-layer metal oxidation. *Scripta Materialia*, **2022**, 214, 114660	5.6	0
28	Atomic Resolution Characterization of Semiconductor Materials by Aberration-Corrected Transmission Electron Microscopy ? **2017**,		
27	Atomic resolution investigation of electric field effects on equilibrium grain boundary configurations in ceramics. *Microscopy and Microanalysis*, **2019**, 25, 2010-2011	0.5	
26	Probing the Structure and Mechanical Properties of Individual MgAl2O4 Porous Agglomerates and Their Effects on Densification. *Microscopy and Microanalysis*, **2014**, 20, 1450-1451	0.5	
25	In-situ TEM Investigation of Reduction-Oxidation Reactions during Densification of Iron Oxide Nanoparticles. *Microscopy and Microanalysis*, **2014**, 20, 1558-1559	0.5	
24	In situ Sintering of Agglomerated 3% Yttria-stablized Zirconia. *Microscopy and Microanalysis*, **2014**, 20, 1630-1631	0.5	
23	Nanodiffraction Characterization of Grain Boundary Structures in Nanocrystalline MgAl2O4 prepared by Electric Field Assisted Sintering. *Microscopy and Microanalysis*, **2014**, 20, 1936-1937	0.5	
22	Wetting and dewetting of ultra-thin Ni films on Si and SiO2 substrates. *Microscopy and Microanalysis*, **2015**, 21, 775-776	0.5	
21	Characterization of the Interface Between Fe3O4 Nanoparticles and a GaAs Substrate As a Platform For Next Generation Spintronic Devices. *Microscopy and Microanalysis*, **2013**, 19, 1650-1651	0.5	
20	Wetting-Dewetting Transitions of Ultrathin Nickel Films Deposited on Silicon (100) Substrates. *Microscopy and Microanalysis*, **2011**, 17, 1328-1329	0.5	
19	Evaluation of Defect Structures from In Situ Dielectric Breakdown of SiO2-Based Gate Dielectric Layers. *Microscopy and Microanalysis*, **2011**, 17, 1352-1353	0.5	
18	Determination of Local Oxidations States in Ni-NiO Core-shell Structures Using White Line Intensity Ratios. *Microscopy and Microanalysis*, **2010**, 16, 1458-1459	0.5	
17	Seeing inside materials by aberration-corrected electron microscopy. *International Journal of Nanotechnology*, **2011**, 8, 935	1.5	
16	Substitutional and Interstitial Diffusion of Ni across the NiSi/Si interface. *Microscopy and Microanalysis*, **2012**, 18, 344-345	0.5	
15	Characterization of EuS Nanotubes in Quantum Confinement. *Microscopy and Microanalysis*, **2009**, 15, 1178-1179	0.5	
14	Atomic Resolution Investigation of Metal-Assisted Hydrogen Storage Mechanisms in Activated Carbon Fibers. *Microscopy and Microanalysis*, **2009**, 15, 1426-1427	0.5	
13	Investigation of Dielectric Breakdown on the Atomic Length-Scale Using In Situ STM-TEM. *Microscopy and Microanalysis*, **2010**, 16, 1750-1751	0.5	

List of Publications

12	Quantitative Image Contrast Variations in STEM. *Microscopy and Microanalysis*, **2008**, 14, 942-943	0.5
11	Direct Imaging of Point Defect Configurations for Au inside Si Nanowires. *Microscopy and Microanalysis*, **2008**, 14, 204-205	0.5
10	Quantitative Image Simulation for Scanning Transmission Electron Microscopy. *Microscopy and Microanalysis*, **2008**, 14, 930-931	0.5
9	Aberration-Corrected STEM - More than just Higher Resolution. *Microscopy and Microanalysis*, **2006**, 12, 132-133	0.5
8	Image Formation Based on Atomic Resolution Core-loss Electron Energy Loss Spectroscopy. *Microscopy and Microanalysis*, **2006**, 12, 1138-1139	0.5
7	High Resolution EELS with the Aberration Corrected STEM: Determining Interfacial Electronic Structures with High Accuracy. *Microscopy and Microanalysis*, **2004**, 10, 260-261	0.5
6	Electronic Structure Investigations of Metal / SrtiO3 Interfaces Using EELS. *Microscopy and Microanalysis*, **2001**, 7, 304-305	0.5
5	Stabilization of metal(II)oxides on the nanoscale. *Materials Research Letters*, **2020**, 8, 41-47	7.4
4	Impact of Electric Fields on Grain Boundary Atomic and Electronic Structures. *Microscopy and Microanalysis*, **2021**, 27, 2926-2927	0.5
3	Formation of Strontium Titanate Bicrystal by the Spark Plasma Sintering Method. *Microscopy and Microanalysis*, **2016**, 22, 1826-1827	0.5
2	In-situ NiO nanostructure growth during heating in water vapor atmosphere. *Microscopy and Microanalysis*, **2021**, 27, 2102-2103	0.5
1	Mechanisms of long-range edge retraction of metal bilayer films. *Journal of Applied Physics*, **2021**, 130, 125302	2.5