

Edgar F Rauch

List of Publications by Year in Descending Order

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

70 papers	2,452 citations	23 h-index	49 g-index
75 ext. papers	2,753 ext. citations	3.2 avg, IF	5.05 L-index

#	Paper	IF	Citations
70	Reconstructing dual-phase nanometer scale grains within a pearlitic steel tip in 3D through 4D-scanning precession electron diffraction tomography and automated crystal orientation mapping.. <i>Ultramicroscopy</i> , 2022 , 238, 113536	3.1	
69	Multimodal study of dis-sodiation mechanisms within individual Na ₃ V ₂ (PO ₄) ₂ F ₃ cathode crystals using 4D-STEM-ASTAR and STXM-XANES. <i>Microscopy and Microanalysis</i> , 2021 , 27, 3446-3447	0.5	
68	Investigation of the orientation relationship between nano-sized G-phase precipitates and austenite with scanning nano-beam electron diffraction using a pixelated detector. <i>Scripta Materialia</i> , 2021 , 201, 113930	5.6	2
67	New Features in Crystal Orientation and Phase Mapping for Transmission Electron Microscopy. <i>Symmetry</i> , 2021 , 13, 1675	2.7	1
66	Novel TEM Microscopy and Electron Diffraction Techniques to Characterize Cultural Heritage Materials: From Ancient Greek Artefacts to Maya Mural Paintings. <i>Scanning</i> , 2019 , 2019, 4870695	1.6	3
65	A novelty for cultural heritage material analysis: Transmission Electron Microscope (TEM) 3D electron diffraction tomography applied to Roman glass tesserae. <i>Microchemical Journal</i> , 2018 , 138, 19-25	4.8	9
64	Severe friction stir processing of an Al-Zn-Mg-Cu alloy: Misorientation and its influence on superplasticity. <i>Materials and Design</i> , 2018 , 137, 128-139	8.1	18
63	Ultrafine heat-induced structural perturbations of bone mineral at the individual nanocrystal level. <i>Acta Biomaterialia</i> , 2018 , 73, 500-508	10.8	3
62	Novel characterization techniques for cultural heritage using a TEM orientation imaging in combination with 3D precession diffraction tomography: a case study of green and white ancient Roman glass tesserae. <i>Heritage Science</i> , 2018 , 6,	2.5	3
61	TEM microanalysis of interfacial structures after dry sliding of cold sprayed Al-Al ₂ O ₃ . <i>Wear</i> , 2017 , 376-377, 1411-1417	3.5	13
60	Retrieving overlapping crystals information from TEM nano-beam electron diffraction patterns. <i>Journal of Microscopy</i> , 2017 , 268, 208-218	1.9	18
59	TEM illumination settings study for optimum spatial resolution and indexing reliability in crystal orientation mappings. <i>Micron</i> , 2017 , 92, 43-50	2.3	3
58	The use of Correlation Coefficient maps to enhance visibility of internal structure for nanocrystalline thin foils 2016 , 629-630		
57	Identifying and mapping the polytypes and orientation relationships in ZnO/CdSe core-shell nanowire arrays. <i>Nanotechnology</i> , 2016 , 27, 445712	3.4	4
56	Medium range structural order in amorphous tantalum spatially resolved with changes to atomic structure by thermal annealing. <i>Journal of Non-Crystalline Solids</i> , 2016 , 438, 10-17	3.9	23
55	Highlighting material structure with transmission electron diffraction correlation coefficient maps. <i>Ultramicroscopy</i> , 2016 , 163, 31-7	3.1	16
54	A stable multiply twinned decahedral gold nanoparticle with a barrel-like shape. <i>Surface Science</i> , 2016 , 644, 80-85	1.8	13

53	Microstructure and Texture of Electrodeposited Nanocrystalline Nickel in the As-Deposited State and After In-Situ and Ex-Situ Annealing. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2016 , 47, 6655-6670	2.3	8
52	Reflection profile and angular resolution with Precession Electron Diffraction 2016 , 665-666		1
51	ACOM-TEM analysis of the effect of heating on the mineral nanocrystals in bone 2016 , 734-735		
50	Mechanical behavior of low carbon steel subjected to strain path changes: Experiments and modeling. <i>Acta Materialia</i> , 2016 , 111, 305-314	8.4	46
49	Fast electron diffraction tomography. <i>Journal of Applied Crystallography</i> , 2015 , 48, 718-727	3.8	101
48	A new titanium alloy with a combination of high strength, high strain hardening and improved ductility. <i>Scripta Materialia</i> , 2015 , 94, 17-20	5.6	164
47	A Tool for Local Thickness Determination and Grain Boundary Characterization by CTEM and HRTEM Techniques. <i>Microscopy and Microanalysis</i> , 2015 , 21, 422-35	0.5	8
46	The Role of Stress Induced Martensite in Ductile Metastable Beta Ti-alloys Showing Combined TRIP/TWIP Effects. <i>Materials Today: Proceedings</i> , 2015 , 2, S505-S510	1.4	11
45	Modeling the Effect of Asymmetric Rolling on Mechanical Properties of AlMg Alloys. <i>Steel Research International</i> , 2015 , 86, 922-931	1.6	2
44	Mechanism of the β phase transformation in iron. <i>Physical Review B</i> , 2015 , 91,	3.3	32
43	Mechanical behavior of Mg subjected to strain path changes: Experiments and modeling. <i>International Journal of Plasticity</i> , 2015 , 73, 171-183	7.6	76
42	Automated crystal orientation and phase mapping in TEM. <i>Materials Characterization</i> , 2014 , 98, 1-9	3.9	204
41	Enhancements of homogenous anisotropic hardening model and application to mild and dual-phase steels. <i>International Journal of Plasticity</i> , 2014 , 58, 201-218	7.6	110
40	Virtual dark-field images reconstructed from electron diffraction patterns. <i>EPJ Applied Physics</i> , 2014 , 66, 10701	1.1	23
39	Twins in asymmetrically rolled AZ31 analyzed with a Transmission Electron Microscope Orientation mapping tool. <i>IOP Conference Series: Materials Science and Engineering</i> , 2014 , 63, 012150	0.4	
38	A dislocation-based hardening model incorporated into an anisotropic hardening approach. <i>Computational Materials Science</i> , 2013 , 79, 570-583	3.2	27
37	Experiments and Modeling of Low Carbon Steel Sheet Subjected to Double Strain Path Changes. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2013 , 44, 4475-4479	2.3	22
36	An investigation of hydrogen storage in a magnesium-based alloy processed by equal-channel angular pressing. <i>International Journal of Hydrogen Energy</i> , 2013 , 38, 8306-8312	6.7	81

35	TEM investigations of the oxide layers formed on a 316L alloy in simulated PWR environment. <i>Journal of Materials Science</i> , 2013 , 48, 2861-2871	4.3	37
34	Twinning analyses in a magnesium alloy with tilting series scanning method using a TEM based orientation mapping system. <i>Materials Letters</i> , 2013 , 111, 192-196	3.3	6
33	H-sorption properties and structural evolution of Mg processed by severe plastic deformation. <i>Journal of Alloys and Compounds</i> , 2013 , 580, S187-S191	5.7	19
32	Structure of grains and grain boundaries in cryo-mechanically processed Ti alloy. <i>Journal of Materials Science</i> , 2013 , 48, 4592-4598	4.3	8
31	Extension of homogeneous anisotropic hardening model to cross-loading with latent effects. <i>International Journal of Plasticity</i> , 2013 , 46, 130-142	7.6	144
30	A crystallographic dislocation model for describing hardening of polycrystals during strain path changes. Application to low carbon steels. <i>International Journal of Plasticity</i> , 2013 , 46, 54-69	7.6	113
29	Influence of Processing Severity During Equal-Channel Angular Pressing on the Microstructure of an Al-Zn-Mg-Cu Alloy. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2012 , 43, 4224-4236	2.3	22
28	Observation of (sub)grain clusters in the as-deposited and in situ annealed nanocrystalline nickel using automated crystal orientation mapping. <i>Scripta Materialia</i> , 2012 , 67, 685-688	5.6	4
27	Orientation and Phase Mapping in TEM Microscopy (EBSD-TEM Like): Applications to Materials Science. <i>Solid State Phenomena</i> , 2012 , 186, 13-15	0.4	12
26	Influence of the Deformation Path on the Annealing Textures and Microstructures of Various Cubic and Hexagonal Metals. <i>Materials Science Forum</i> , 2012 , 715-716, 585-585	0.4	
25	A Simple Analytical Model of Asymmetric Rolling. <i>Archives of Metallurgy and Materials</i> , 2012 , 57,		5
24	Confirmation of the Domino-Cascade Model by LiFePO ₄ /FePO ₄ Precession Electron Diffraction. <i>Chemistry of Materials</i> , 2011 , 23, 4515-4524	9.6	125
23	Modelling the plastic behaviour of metals under complex loading conditions. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2011 , 19, 035009	2	62
22	Microscale and Mesoscale Crystallographic Textures of Nanocrystalline Ni-Based Electrodeposits. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2011 , 42, 2048-2060	2.3	11
21	High spatial resolution semi-automatic crystallite orientation and phase mapping of nanocrystals in transmission electron microscopes. <i>Crystal Research and Technology</i> , 2011 , 46, 589-606	1.3	113
20	An alternative to kinematic hardening in classical plasticity. <i>International Journal of Plasticity</i> , 2011 , 27, 1309-1327	7.6	275
19	Inhomogeneous microstructural evolution of pure iron during high-pressure torsion. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2011 , 528, 3666-3675	5.3	32
18	Precession Electron Diffraction Assisted Orientation Mapping in the Transmission Electron Microscope. <i>Materials Science Forum</i> , 2010 , 644, 1-7	0.4	47

17	Automated nanocrystal orientation and phase mapping in the transmission electron microscope on the basis of precession electron diffraction. <i>Zeitschrift für Kristallographie</i> , 2010 , 225, 103-109		218
16	Pattern size dependence of grain growth in Cu interconnects. <i>Scripta Materialia</i> , 2010 , 63, 965-968	5.6	10
15	Structural Fingerprinting of Nanocrystals: Advantages of Precession Electron Diffraction, Automated Crystallite Orientation and Phase Maps. <i>Materials Research Society Symposia Proceedings</i> , 2009 , 1184, 1		5
14	The optimization of ECAP conditions to achieve high strain-rate superplasticity in a Zr- and Sc-modified aa 7075 aluminum alloy. <i>International Journal of Materials Research</i> , 2009 , 100, 851-857	0.5	6
13	High Strain Rate Superplasticity in a Zr and Sc Modified 7075 Aluminum Alloy Produced by ECAP. <i>Materials Science Forum</i> , 2008 , 584-586, 164-169	0.4	7
12	Plastic deformation, damage and rupture of PM Ti-6Al-4V at 20 K under monotonic loading. <i>Acta Materialia</i> , 2007 , 55, 105-118	8.4	19
11	The Dislocation Patterns in Deformed Metals: Dislocation Densities, Distributions and Related Misorientations. <i>Materials Science Forum</i> , 2007 , 550, 193-198	0.4	
10	Comments on "On the reliability of fully automatic indexing of electron diffraction patterns obtained in a transmission electron microscope" by Morawiec & Bouzy (2006). <i>Journal of Applied Crystallography</i> , 2006 , 39, 104-105	3.8	11
9	Damage Mechanisms and Rupture Criterion of PM Ti-6Al-4V at 20K. <i>Materials Science Forum</i> , 2005 , 482, 287-290	0.4	
8	Orientation Maps Derived from TEM Diffraction Patterns Collected with an External CCD Camera. <i>Materials Science Forum</i> , 2005 , 495-497, 197-202	0.4	36
7	Texture, Microstructure and Forming of Aluminium Alloy Sheets. <i>Materials Science Forum</i> , 2003 , 426-432, 99-106	0.4	
6	Strain Hardening Anisotropy of Aluminium Alloys during Complex Loading: Strain Reversal Effects. <i>Key Engineering Materials</i> , 2002 , 230-232, 521-524	0.4	1
5	Grain Refinement in an Aluminium-Magnesium Alloy by Severe Plastic Deformation. <i>Key Engineering Materials</i> , 2002 , 230-232, 239-242	0.4	2
4	Microstructure and High Temperature Deformation of an ECAE Processed 5083 Al Alloy. <i>Materials Science Forum</i> , 2001 , 357-359, 437-442	0.4	2
3	Shear Deformation Properties of Extruded AlZnMg Alloys. <i>Scripta Materialia</i> , 1998 , 38, 709-714	5.6	8
2	The Relation between Forest Dislocations and Stress in BCC Metals. <i>Key Engineering Materials</i> , 1995 , 97-98, 371-376	0.4	12
1	The Flow Law of Mild Steel under Monotonic or Complex Strain Path. <i>Solid State Phenomena</i> , 1992 , 23-24, 317-333	0.4	34