Robert Cernik

List of Publications by Year
in descending order

122 papers	3,393 citations	147801 31 h-index	168389 53 g-index
126 all docs	126 docs citations	126 times ranked	3193 citing authors

#	Article	IF	Citations
1	Effects of packing fraction and bond valence on microwave dielectric properties of A2+B6+O4 (A2+:) Tj ETQq1 1 0.784314 rgBT /Ove	5.7	396
2	A New High-Flux Chemical and Materials Crystallography Station at the SRS Daresbury. 1. Design, Construction and Test Results. Journal of Synchrotron Radiation, 1997, 4, 279-286.	2.4	171
3	Microstructure and properties of Co-, Ni-, Zn-, Nb- and W-modified multiferroic BiFeO3 ceramics. Journal of the European Ceramic Society, 2010, 30, 727-736.	5.7	152
4	X-ray diffraction study of Hafnia under high pressure using synchrotron radiation. Journal of Physics and Chemistry of Solids, 1991, 52, 1181-1186.	4.0	110
5	Electrostatically driven charge-ordering in Fe2OBO3. Nature, 1998, 396, 655-658.	27.8	108
6	Pair distribution function computed tomography. Nature Communications, 2013, 4, 2536.	12.8	96
7	A two-circle powder diffractometer for synchrotron radiation with a closed loop encoder feedback system. Journal of Applied Crystallography, 1990, 23, 292-296.	4.5	90
8	The structure of cimetidine (C10H16N6S) solved from synchrotron-radiation X-ray powder diffraction data. Journal of Applied Crystallography, 1991, 24, 222-226.	4.5	90
9	Understanding the residual stress distribution through the thickness of atmosphere plasma sprayed (APS) thermal barrier coatings (TBCs) by high energy synchrotron XRD; digital image correlation (DIC) and image based modelling. Acta Materialia, 2017, 132, 1-12.	7.9	80
10	The breadth and shape of instrumental line profiles in high-resolution powder diffraction. Journal of Applied Crystallography, 1991, 24, 913-919.	4.5	78
11	An imaging plate system for highâ€pressure powder diffraction: The data processing side. Review of Scientific Instruments, 1992, 63, 700-703.	1.3	68
12	Angleâ€dispersive powderâ€diffraction techniques for crystal structure refinement at high pressure. Review of Scientific Instruments, 1992, 63, 1039-1042.	1.3	59
13	A twoâ€circle powder diffractometer for synchrotron radiation on Station 2.3 at the SRS. Review of Scientific Instruments, 1992, 63, 1013-1014.	1.3	58
14	The new materials processing beamline at the SRS Daresbury, MPW6.2. Journal of Synchrotron Radiation, 2004, 11, 163-170.	2.4	54
15	The crystal and molecular structure of cis-diammine-1,1-cyclobutanedicarboxoplatinum(II) [cis-Pt(NH3)2CBDCA]. Dynamic puckering of the cyclobutane ring. Journal of Molecular Structure, 1985, 130, 97-102.	3.6	51
16	Ab initiostructure determination of sulfathiazole polymorph V from synchrotron X-ray powder diffraction data. Journal of Applied Crystallography, 1999, 32, 436-441.	4.5	47
17	The structure of aurichalcite, (Cu,Zn)5(OH)6(CO3)2, determined from a microcrystal. Acta Crystallographica Section B: Structural Science, 1994, 50, 673-676.	1.8	46
18	Structures and microwave dielectric properties of Ca(1â^'x)Nd2x/3TiO3 ceramics. Journal of the European Ceramic Society, 2012, 32, 3791-3799.	5.7	46

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19	X-ray and electron diffraction studies of the structures of pseudo-perovskite compounds Pb2(Sc,Ta)O6 and Pb2(Mg,W)O6. Journal of Applied Crystallography, 1992, 25, 477-487.	4.5	45
20	Comparative determination of the Î±/Î² phase fraction in Î±+Î²-titanium alloys using X-ray diffraction and electron microscopy. Materials Characterization, 2009, 60, 1248-1256.	4.4	43
21	A laboratory system for element specific hyperspectral X-ray imaging. Analyst, The, 2013, 138, 755-759.	3.5	42
22	Lattice-parameter determination for powders using synchrotron radiation. Journal of Applied Crystallography, 1990, 23, 286-291.	4.5	41
23	A new three-angle energy-dispersive diffractometer. Nuclear Instruments & Methods in Physics Research B, 1998, 134, 310-313.	1.4	41
24	Zirconium hydride precipitation kinetics in Zircaloy-4 observed with synchrotron X-ray diffraction. Journal of Nuclear Materials, 2015, 464, 160-169.	2.7	41
25	Interlaced X-ray diffraction computed tomography. Journal of Applied Crystallography, 2016, 49, 485-496.	4.5	40
26	Removing multiple outliers and single-crystal artefacts from X-ray diffraction computed tomography data. Journal of Applied Crystallography, 2015, 48, 1943-1955.	4.5	39
27	A [2 + 2] photo-adduct of 8-methoxypsoralen and thymine: X-ray crystal structure; a model for the reaction of psoralens with DNA in the phototherapy of psoriasis. Journal of the Chemical Society Chemical Communications, 1982, , 22.	2.0	37
28	Structures of synthetic K2MgSi5O12 leucites by integrated X-ray powder diffraction, electron diffraction and 29Si MAS NMR methods. Acta Crystallographica Section B: Structural Science, 1994, 50, 31-41.	1.8	35
29	X-ray colour imaging. Journal of the Royal Society Interface, 2008, 5, 477-481.	3.4	35
30	Chemical imaging of the sulfur-induced deactivation of Cu/ZnO catalyst bodies. Journal of Catalysis, 2014, 314, 94-100.	6.2	35
31	Small pixel CZT detector for hard X-ray spectroscopy. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 652, 158-161.	1.6	34
32	Applied crystallography solutions to problems in industrial solid-state chemistry. Case examples with ceramics, cements and zeolites. Journal of the Chemical Society, Faraday Transactions, 1996, 92, 2187.	1.7	30
33	An in situ study of the formation of multiferroic bismuth ferrite using high resolution synchrotron X-ray powder diffraction. Journal of the European Ceramic Society, 2008, 28, 2567-2572.	5.7	30
34	Non-invasive imaging of the crystalline structure within a human tooth. Acta Biomaterialia, 2013, 9, 8337-8345.	8.3	29
35	Structural studies of semiconductors at very high pressures. Nuclear Instruments & Methods in Physics Research B, 1995, 97, 354-357.	1.4	28
36	Solution of the Crystal and Molecular Structure of Complex Low-Symmetry Organic Compounds with Powder Diffraction Techniques: Fluorescein Diacetate. Angewandte Chemie - International Edition, 1998, 37, 2340-2343.	13.8	28

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37	Multiple Module Pixellated CdTe Spectroscopic X-Ray Detector. IEEE Transactions on Nuclear Science, 2013, 60, 1197-1200.	2.0	28
38	Precise strain profile measurement as a function of depth in thermal barrier coatings using high energy synchrotron X-rays. Scripta Materialia, 2016, 113, 122-126.	5.2	28
39	Operando and Postreaction Diffraction Imaging of the Laâ€“Sr/CaO Catalyst in the Oxidative Coupling of Methane Reaction. Journal of Physical Chemistry C, 2019, 123, 1751-1760.	3.1	28
40	Effect of thermal treatment on the stability of Naâ€“Mnâ€“W/SiO₂ catalyst for the oxidative coupling of methane. Faraday Discussions, 2021, 229, 176-196.	3.2	28
41	Progressive damage in satin weave carbon/epoxy composites under quasi-static punch-shear loading. Polymer Testing, 2015, 41, 82-91.	4.8	26
42	Station 16.3: a High-Resolution Single-Crystal Diffraction Facility at the SRS, Daresbury. Journal of Synchrotron Radiation, 1998, 5, 1263-1269.	2.4	25
43	The general purpose twoâ€circle diffractometer on Station 9.1, Daresbury Laboratory. Review of Scientific Instruments, 1992, 63, 999-1001.	1.3	24
44	Strain evolution during hydride precipitation in Zircaloy-4 observed with synchrotron X-ray diffraction. Journal of Nuclear Materials, 2016, 474, 45-61.	2.7	24
45	Noninvasive Spatiotemporal Profiling of the Processes of Impregnation and Drying within Mo/Al₂O₃ Catalyst Bodies by a Combination of X-ray Absorption Tomography and Diagonal Offset Raman Spectroscopy. ACS Catalysis, 2013, 3, 339-347.	11.2	23
46	Real-Time Operando Diffraction Imaging of Laâ€“Sr/CaO During the Oxidative Coupling of Methane. Journal of Physical Chemistry C, 2018, 122, 2221-2230.	3.1	23
47	The ferroelectric phase transition in pure and lightly doped barium titanate. Journal of Physics Condensed Matter, 1991, 3, 4555-4567.	1.8	20
48	A CdTe detector for hyperspectral SPECT imaging. Journal of Instrumentation, 2012, 7, P08027-P08027.	1.2	20
49	Simultaneous measurement of X-ray diffraction andÂferroelectric polarization data as a function ofÂapplied electric field and frequency. Journal of Synchrotron Radiation, 2012, 19, 710-716.	2.4	20
50	Magnetic X-ray powder diffraction from antiferromagnetic uranium dioxide. Journal of Physics Condensed Matter, 1995, 7, L223-L229.	1.8	19
51	Dark-field hyperspectral X-ray imaging. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2014, 470, 20130629.	2.1	19
52	The role of residual stress in the fracture properties of a natural ceramic. Journal of Materials Chemistry, 2005, 15, 947.	6.7	18
53	A synchrotron X-ray diffraction deconvolution method for the measurement of residual stress in thermal barrier coatings as a function of depth. Journal of Applied Crystallography, 2016, 49, 1904-1911.	4.5	18
54	Rapid intramolecular 1,4-hydride transfer across a rigid 4-hydroxycycloheptanone. Journal of the Chemical Society Perkin Transactions II, 1982, , 361.	0.9	17

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55	Tungsten Bronze Barium Neodymium Titanate (Ba_{6â€“3n}Nd_{8+2n}Ti₁₈O₅₄): An Intrinsic Nanostructured Material and Its Defect Distribution. Inorganic Chemistry, 2016, 55, 3338-3350.	4.0	17
56	The structure of a C:H by neutron and X-ray scattering. Surface and Coatings Technology, 1991, 47, 668-676.	4.8	16
57	Inâ€situ study of the solidâ€“solid phase transitions occurring in real diesel wax crystalline systems using differential scanning calorimetry and highâ€resolution synchrotron Xâ€ray powder diffraction. Journal of Materials Chemistry, 1999, 9, 2385-2392.	6.7	16
58	The manufacture of a very high precision x-ray collimator array for rapid tomographic energy dispersive diffraction imaging (TEDDI). Measurement Science and Technology, 2006, 17, 1767-1775.	2.6	16
59	Multivariate analysis of hyperspectral hard Xâ€ray images. X-Ray Spectrometry, 2013, 42, 151-157.	1.4	16
60	In situ X-ray diffraction computed tomography studies examining the thermal and chemical stabilities of working Ba_{0.5}Sr_{0.5}Co_{0.8}Fe_{0.2}O_{3â^'Î´} membranes during oxidative coupling of methane. Physical Chemistry Chemical Physics, 2020, 22, 18964-18975.	2.8	16
61	Mechanically induced chemical decomposition ofC60-n-pentane clathrate at room temperature. Physical Review B, 1993, 48, 7682-7684.	3.2	15
62	New high- and low-temperature apparatus for synchrotron polycrystalline X-ray diffraction. Journal of Synchrotron Radiation, 1998, 5, 929-931.	2.4	15
63	X-ray beam characteristics on MPW6.2 at the SRS. Nuclear Instruments & Methods in Physics Research B, 2004, 222, 659-666.	1.4	15
64	A New White Beam Powder Diffraction Facility at the Daresbury Laboratory Synchrotron Radiation Source. Materials Science Forum, 1996, 228-231, 213-218.	0.3	14
65	Characterisation of vapour grown CdZnTe crystals using synchrotron X-ray topography. Journal of Crystal Growth, 2012, 343, 1-6.	1.5	14
66	High Energy Resolution Hyperspectral X-Ray Imaging for Low-Dose Contrast-Enhanced Digital Mammography. IEEE Transactions on Medical Imaging, 2017, 36, 1784-1795.	8.9	14
67	A new approach to synchrotron energy-dispersive X-ray diffraction computed tomography. Journal of Synchrotron Radiation, 2012, 19, 471-477.	2.4	13
68	Material specific X-ray imaging using an energy-dispersive pixel detector. Nuclear Instruments & Methods in Physics Research B, 2014, 324, 25-28.	1.4	13
69	Rapid and Low-Temperature Molecular Precursor Approach toward Ternary Layered Metal Chalcogenides and Oxides: Mo_{1â€“x}W_xS₂ and Mo_{1â€“x}W_xO₃ Alloys (0 â‰¤ x â‰¤ 1). Chemistry of Materials, 2020, 32, 7895-7907.	6.7	13
70	Microbeam X-ray diffraction studies of structural properties of polycrystalline metals by means of synchrotron radiation. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1998, 247, 81-87.	5.6	12
71	Direct correlation between ferrite microstructure and electrical resistivity. Journal of Applied Physics, 2007, 101, 104912.	2.5	12
72	A synchrotron tomographic energy-dispersive diffraction imaging study of the aerospace alloy Ti 6246. Journal of Applied Crystallography, 2011, 44, 150-157.	4.5	12

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73	A rapid two-dimensional data collection system for the study of ferroelectric materials under external applied electric fields. Journal of Applied Crystallography, 2016, 49, 1501-1507.	4.5	12
74	Rapid fabrication of mesoporous TiO2 thin films by pulsed fibre laser for dye sensitized solar cells. Applied Surface Science, 2018, 428, 1089-1097.	6.1	12
75	Multi-length scale 5D diffraction imaging of Niâ€“Pd/CeO₂â€“ZrO₂/Al₂O₃ catalyst during partial oxidation of methane. Journal of Materials Chemistry A, 2021, 9, 11331-11346.	10.3	12
76	Nanoscale Chevrel-Phase Mo₆S₈ Prepared by a Molecular Precursor Approach for Highly Efficient Electrocatalysis of the Hydrogen Evolution Reaction in Acidic Media. ACS Applied Energy Materials, 2021, 4, 13015-13026.	5.1	12
77	Powder diffraction facilities at Daresbury Laboratory. Review of Scientific Instruments, 1989, 60, 2376-2379.	1.3	11
78	Fluctuation-swamped discontinuous phase changes in lightly doped ferroelectric barium titanate. Journal of Physics Condensed Matter, 1992, 4, 4387-4398.	1.8	10
79	The effects of isovalent and non-isovalent impurities on the ferroelectric phase transition in barium titanate. Journal of Physics Condensed Matter, 1993, 5, 5963-5970.	1.8	10
80	Five new experimental stations at the SRS Daresbury from a 6 T superconducting wiggler magnet. Review of Scientific Instruments, 1995, 66, 1633-1635.	1.3	10
81	A new high-flux chemical and materials crystallography station at the SRS Daresbury. 1. Design, construction and test results. Corrigendum. Journal of Synchrotron Radiation, 2000, 7, 40-40.	2.4	10
82	Enhanced hyperspectral tomography for bioimaging by spatiospectral reconstruction. Scientific Reports, 2021, 11, 20818.	3.3	10
83	Phase transitions in triamantane. Solid State Communications, 1978, 27, 1017-1019.	1.9	9
84	High pressure structural study on C60 powder. Solid State Communications, 1992, 84, 1081-1083.	1.9	9
85	Using in-situ synchrotron radiation powder diffraction to characterize growth-related structural polymorphic phase transformations in cis-9-c0-octadecenoic acid. Journal of Crystal Growth, 1993, 128, 1263-1267.	1.5	9
86	Multivariate analysis of pixelated diffraction data. Journal of Instrumentation, 2011, 6, C12027-C12027.	1.2	9
87	Indexing unit cells from synchrotron X-ray powder diffraction data. Journal of Applied Crystallography, 1993, 26, 277-280.	4.5	8
88	IN-SITU X-RAY DIFFRACTION STUDY OF FERROELECTRIC DOMAIN SWITCHING IN ORTHORHOMBIC NKN CERAMICS. Functional Materials Letters, 2010, 03, 31-34.	1.2	8
89	Solid solutions of M_{2â^'2x}In_{2x}S₃ (M = Bi or Sb) by solventless thermolysis. Journal of Materials Chemistry C, 2019, 7, 5112-5121.	5.5	8
90	The development of synchrotron x-ray area detectors for studying high pressure phase transitions. Phase Transitions, 1992, 39, 187-198.	1.3	7

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91	Industrial aspects of synchrotron X-ray powder diffraction. Radiation Physics and Chemistry, 1995, 45, 445-457.	2.8	7
92	Simultaneous measurement of X-ray powder diffraction and ferroelectric polarisation data as a function of applied electric field at a range of frequencies. Powder Diffraction, 2013, 28, S220-S227.	0.2	7
93	Imaging of Ra-223 with a small-pixel CdTe detector. Journal of Instrumentation, 2015, 10, C01029-C01029.	1.2	7
94	The nondestructive measurement of strain distributions in air plasma sprayed thermal barrier coatings as a function of depth from entire Debyeâ€“Scherrer rings. Journal of Applied Crystallography, 2020, 53, 69-75.	4.5	7
95	Full-field energy-dispersive powder diffraction imaging using laboratory X-rays. Journal of Applied Crystallography, 2015, 48, 269-272.	4.5	6
96	The development of synchrotron X-ray diffraction at Daresbury Laboratory and its legacy for materials imaging. Journal of Non-Crystalline Solids, 2016, 451, 2-9.	3.1	6
97	Synchrotron X-ray powder diffraction study of (Pb1-3x/2Lax) (ZryTi1-y)O3at elevated temperatures. Journal of Physics Condensed Matter, 1989, 1, 6019-6023.	1.8	5
98	Preparation of sulphenamidines. X-Ray crystal structure of N 1,N 1-dimethyl-N 2-methylthiobenzamidine. Journal of the Chemical Society Chemical Communications, 1983, , 390.	2.0	4
99	An in situ xâ€ray diffraction method for the structure of amorphous thin films using shallow angles of incidence. Review of Scientific Instruments, 1992, 63, 1150-1152.	1.3	4
100	The Breadth and Shape of Instrumental Line Profiles for the Powder Diffraction Station 2.3 at the Daresbury Laboratory SRS. Materials Science Forum, 1996, 228-231, 207-212.	0.3	4
101	Crystallisation Kinetics and Phase Relations of Wollastonite by Real Time Synchrotron Powder Diffraction. Materials Science Forum, 2000, 321-324, 224-229.	0.3	4
102	Residual stress distribution analysis of heat treated APS TBC using image based modelling. Data in Brief, 2017, 13, 557-561.	1.0	4
103	A near-ambient-temperature-control cell for use with synchrotron X-ray powder diffraction. Journal of Applied Crystallography, 1995, 28, 651-653.	4.5	3
104	High-Pressure Cell for the Study of In-Situ Hydrates Using Energy-Dispersive X-ray Diffraction. Journal of Synchrotron Radiation, 1996, 3, 220-224.	2.4	3
105	Highâ€Temperature Structural Phase Transition in Ca_{0.7}Ti_{0.7}La_{0.3}Al_{0.3}O₃: Investigation by Synchrotron Xâ€Ray Diffraction. Journal of the American Ceramic Society, 2007, 90, 3947-3952.	3.8	3
106	Performance limitations of the pixelated ERD detector with respect to imaging using the rapid Tomographic Energy Dispersive Diffraction Imaging system. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2009, 604, 119-122.	1.6	3
107	Coherent imaging using diffracted X-rays. Crystallography Reports, 2010, 55, 1162-1173.	0.6	3
108	The chemical durability of glass and graphiteâ€“glass composite doped with cesium oxide. Journal of Nuclear Materials, 2013, 432, 529-538.	2.7	3

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109	The Au-substituted Al - Cu - Fe icosahedral phase: evidence for bond hybridization. Journal of Physics Condensed Matter, 1997, 9, 7523-7540.	1.8	2
110	Application notes on the use of softer X-rays for anomalous powder diffraction. Journal of Synchrotron Radiation, 2005, 12, 431-433.	2.4	2
111	An in situ high pressure-high temperature powder diffraction study of the formation of a precursor phase of bismuth manganite. Ceramics International, 2010, 36, 2315-2321.	4.8	2
112	Rietveld Studies of Leucite Analogues. Materials Science Forum, 1996, 228-231, 765-770.	0.3	1
113	High-Resolution X-Ray Powder Diffraction Studies of Some Mg- and Si- Substituted Brownmillerites. Materials Science Forum, 1996, 228-231, 759-764.	0.3	1
114	<i>In situ</i> X-Ray Diffraction Method to Study Natural Gas Hydrates. Materials Science Forum, 1998, 278-281, 335-341.	0.3	1
115	Crystal Structure and Magnetic Properties of Fe₂OBO₃. Materials Science Forum, 1998, 278-281, 708-713.	0.3	1
116	The uses of softer X-rays in structural studies. Journal of Synchrotron Radiation, 2005, 12, 391-391.	2.4	1
117	A synchrotron X-ray study of structural ordering inÂthe microwave dielectric ceramic system: Ba(Ni_{1/3}Nb_{2/3})O₃â€“Ba(Zn_{1/3}Nb_{2/3})O₃. Journal of Applied Crystallography, 2007, 40, 749-755.	4.5	1
118	X-ray performance of pixilated CdZnTe detectors. , 2008, , .		1
119	A high-resolution synchrotron powder diffraction study of substituted gallium ferrites using flat-plate fixed angle of incidence geometry on beamline I11 at Diamond. Journal of Applied Crystallography, 2012, 45, 174-181.	4.5	1
120	Making synchrotrons work for industry. Physics World, 1992, 5, 35-42.	0.0	0
121	Synchrotron X-Ray Powder Diffraction Facilities at Daresbury Laboratory. Materials Science Forum, 1994, 166-169, 233-236.	0.3	0
122	The Use of Brilliance in Powder Diffraction: Towards High Resolution Kinetic Studies. Materials Science Forum, 1998, 278-281, 312-317.	0.3	0