Peter J Eng

List of Publications by Year
in descending order

138 papers	6,595 citations	87888 38 h-index	69250 77 g-index
145 all docs	145 docs citations	145 times ranked	6671 citing authors

#	Article	IF	Citations
1	Bonding Changes in Compressed Superhard Graphite. Science, 2003, 302, 425-427.	12.6	610
2	Structure of the Hydrated -Al2O3 (0001) Surface. Science, 2000, 288, 1029-1033.	12.6	520
3	Signatures of granular microstructure in dense shear flows. Nature, 2000, 406, 385-389.	27.8	380
4	Phonon Density of States of Iron up to 153 Gigapascals. Science, 2001, 292, 914-916.	12.6	284
5	Structure and reactivity of the hydrated hematite (0001) surface. Surface Science, 2004, 573, 204-224.	1.9	279
6	Structure and reactivity of the calciteâ€“water interface. Journal of Colloid and Interface Science, 2011, 354, 843-857.	9.4	249
7	Probing of bonding changes in B2O3 glasses at high pressure with inelastic X-rayÂscattering. Nature Materials, 2005, 4, 851-854.	27.5	178
8	The formation of sp3 bonding in compressed BN. Nature Materials, 2004, 3, 111-114.	27.5	162
9	Vanadium K edge XANES of synthetic and natural basaltic glasses and application to microscale oxygen barometry. Geochimica Et Cosmochimica Acta, 2005, 69, 2333-2348.	3.9	148
10	Typology of dust particles collected by the COSIMA mass spectrometer in the inner coma of 67P/Churyumov Gerasimenko. Icarus, 2016, 271, 76-97.	2.5	141
11	X-ray Raman scattering study of MgSiO ₃ glass at high pressure: Implication for triclustered MgSiO ₃ melt in Earth's mantle. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 7925-7929.	7.1	123
12	Mineral Associations and Average Oxidation States of Sorbed Pu on Tuff. Environmental Science & Technology, 1999, 33, 2163-2169.	10.0	115
13	Formation of granular jets observed by high-speed X-ray radiography. Nature Physics, 2005, 1, 164-167.	16.7	115
14	Crystal truncation rod diffraction study of the Î±-Al2O3 (102) surface. Surface Science, 2002, 496, 238-250.	1.9	110
15	<title>Dynamically figured Kirkpatrick Baez x-ray microfocusing optics</title>. , 1998, , .		108
16	Hydrated goethite (Î±-FeOOH) (100) interface structure: Ordered water and surface functional groups. Geochimica Et Cosmochimica Acta, 2010, 74, 1943-1953.	3.9	108
17	GeoCARS microfocusing Kirkpatrickâ€“Baez mirror bender development. Review of Scientific Instruments, 1995, 66, 2278-2280.	1.3	97
18	Surface diffraction study of the hydrated hematite surface. Surface Science, 2007, 601, 460-474.	1.9	97

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19	Thermodynamics of Surface Segregation Profiles at Cu3Au(001) Resolved by X-Ray Scattering. Physical Review Letters, 1995, 74, 2006-2009.	7.8	93
20	CTR diffraction and grazing-incidence EXAFS study of U(VI) adsorption onto Î±-Al2O3 and Î±-Fe2O3 (11Ì„02) surfaces. Geochimica Et Cosmochimica Acta, 2005, 69, 3555-3572.	3.9	84
21	X-ray-Induced Dissociation of H2O and Formation of an O2-H2 Alloy at High Pressure. Science, 2006, 314, 636-638.	12.6	84
22	Electronic bonding transition in compressedSiO2glass. Physical Review B, 2007, 75, .	3.2	81
23	Microfluorescence and Microtomography Analyses of Heterogeneous Earth and Environmental Materials. Reviews in Mineralogy and Geochemistry, 2002, 49, 429-483.	4.8	79
24	Nuclear Inelastic X-Ray Scattering of FeO to 48 GPa. Physical Review Letters, 2001, 87, 255501.	7.8	71
25	Plutonium Oxidation and Subsequent Reduction by Mn(IV) Minerals in Yucca Mountain Tuff. Environmental Science & Technology, 2006, 40, 3508-3514.	10.0	70
26	Structure of Alkali Borate Glasses at High Pressure: B and LiK-Edge Inelastic X-Ray Scattering Study. Physical Review Letters, 2007, 98, 105502.	7.8	68
27	Surface complexation studied via combined grazing-incidence EXAFS and surface diffraction: arsenate on hematite (0001) and (10â€“12). Analytical and Bioanalytical Chemistry, 2005, 383, 12-27.	3.7	66
28	Fe(II) adsorption on hematite (0001). Geochimica Et Cosmochimica Acta, 2009, 73, 4346-4365.	3.9	64
29	Dynamic Stabilization of Metal Oxideâ€“Water Interfaces. Journal of the American Chemical Society, 2017, 139, 2581-2584.	13.7	60
30	Hydrated Î±-Fe2O3 surface structure: Role of surface preparation. Surface Science, 2007, 601, L59-L64.	1.9	57
31	<title>Microfocusing 4-keV to 65-keV xrays with bent Kirkpatrick-Baez mirrors</title>. , 1995, , .		56
32	Facilities for high-pressure research with the diamond anvil cell at GSECARS. Journal of Synchrotron Radiation, 2005, 12, 642-649.	2.4	56
33	Room temperature Si(001)-(2 Ã— 1) reconstruction solved by X-ray diffraction. Surface Science, 1997, 375, 55-62.	1.9	52
34	Inelastic x-ray scattering of dense solid oxygen: Evidence for intermolecular bonding. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 11640-11644.	7.1	51
35	The role of interstitial gas in determining the impact response of granular beds. Europhysics Letters, 2011, 93, 28008.	2.0	50
36	Structure and reactivity of environmental interfaces: Application of grazing angle X-ray spectroscopy and long-period X-ray standing waves. Journal of Electron Spectroscopy and Related Phenomena, 2006, 150, 66-85.	1.7	49

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37	67P/Churyumov-Gerasimenko surface properties as derived from CIVA panoramic images. Science, 2015, 349, aab0671.	12.6	47
38	Gas-Mediated Impact Dynamics in Fine-Grained Granular Materials. Physical Review Letters, 2007, 99, 038003.	7.8	43
39	Micro-beam X-ray absorption and fluorescence spectroscopies at GSECARS: APS beamline 13ID. Journal of Synchrotron Radiation, 1999, 6, 353-355.	2.4	42
40	Applications of in situ synchrotron XRD in hydrometallurgy: Literature review and investigation of chalcopyrite dissolution. Hydrometallurgy, 2013, 131-132, 54-66.	4.3	40
41	<title>Geoscience applications of x-ray computed microtomography</title>. , 1999, 3772, 78.		39
42	Hydration Structure of the Barite (001)â€“Water Interface: Comparison of X-ray Reflectivity with Molecular Dynamics Simulations. Journal of Physical Chemistry C, 2017, 121, 12236-12248.	3.1	38
43	Probing of Pressure-Induced Bonding Transitions in Crystalline and Amorphous Earth Materials: Insights from X-ray Raman Scattering at High Pressure. Reviews in Mineralogy and Geochemistry, 2014, 78, 139-174.	4.8	37
44	High Pressure Single Crystal Diffraction at PX^2. Journal of Visualized Experiments, 2017, , .	0.3	35
45	Structural study of Fe(II) adsorption on hematite<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si15.gif" overflow="scroll"><mml:mrow><mml:mo stretchy="false">(</mml:mo><mml:mn>1</mml:mn><mml:mover) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 50 41 Td (accent="true"	1.7	34
46	Coverage-dependent adsorption sites for K/Cu(001) and Cs/Cu(001) determined by surface X-ray diffraction. Surface Science, 1994, 304, 267-280.	1.9	32
47	Probing and modeling of pressure-induced coordination transformation in borate glasses: Inelastic x-ray scattering study at high pressure. Physical Review B, 2008, 78, .	3.2	32
48	Structureâ€“charge relationship â€“ the case of hematite (001). Faraday Discussions, 2015, 180, 55-79.	3.2	32
49	Probing Ag nanoparticle surface oxidation in contact with (in)organics: an X-ray scattering and fluorescence yield approach. Journal of Synchrotron Radiation, 2011, 18, 871-878.	2.4	31
50	Pb, Cu, and Zn distributions at humic acid-coated metal-oxide surfaces. Geochimica Et Cosmochimica Acta, 2016, 188, 407-423.	3.9	31
51	Calculation of crystal truncation rod structure factors for arbitrary rational surface terminations. Journal of Applied Crystallography, 2002, 35, 696-701.	4.5	30
52	Birth and growth of a granular jet. Physical Review E, 2008, 78, 011305.	2.1	28
53	Heteroepitaxial growth of cadmium carbonate at dolomite and calcite surfaces: Mechanisms and rates. Geochimica Et Cosmochimica Acta, 2017, 205, 360-380.	3.9	28
54	Surface-Mediated Formation of Pu(IV) Nanoparticles at the Muscovite-Electrolyte Interface. Environmental Science & Technology, 2013, 47, 14178-14184.	10.0	27

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55	Electronic Structure of Crystalline<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi>He</mml:mi><mml:mprescripts /><mml:none /><mml:mn>4</mml:mn></mml:mmultiscripts></mml:math>at High Pressures. Physical Review Letters, 2010, 105, 186404.	7.8	26
56	Nitrogen-doped graphene-wrapped Cu2S as a superior anode in sodium-ion batteries. Carbon, 2020, 170, 430-438.	10.3	26
57	Surface-Induced Giant Anisotropy in the Order Parameter Relaxation at Cu3Au(001). Physical Review Letters, 1997, 78, 3475-3478.	7.8	25
58	Structure of the Hydrated (101Ì„4) Surface of Rhodochrosite (MnCO3). Environmental Science & Technology, 2007, 41, 3918-3925.	10.0	25
59	Density-functional theory investigation of oxidative corrosion of UO2. Computational and Theoretical Chemistry, 2012, 987, 90-102.	2.5	25
60	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>UO</mml:mi></mml:mrow><mml:mn>2</mml:mn></mml:msub></m Corrosion by Nonclassical Diffusion. Physical Review Letters, 2015, 114, 246103.	7.8	25
61	Quantifying small changes in uranium oxidation states using XPS of a shallow core level. Physical Chemistry Chemical Physics, 2017, 19, 30473-30480.	2.8	25
62	The surface chemistry of sapphire-c: A literature review and a study on various factors influencing its IEP. Advances in Colloid and Interface Science, 2018, 251, 1-25.	14.7	25
63	Quetzalcoatlite: A new octahedral-tetrahedral structure from a 2 Ã— 2 Ã— 40 Î¼m³crystal at the Advanced Photon Source-GSE-CARS Facility. American Mineralogist, 2000, 85, 604-607.	1.9	24
64	Surface Charge of the Calcite (104) Terrace Measured by Rb⁺ Adsorption in Aqueous Solutions Using Resonant Anomalous X-ray Reflectivity. Journal of Physical Chemistry C, 2016, 120, 15216-15223.	3.1	24
65	Spatially Resolved Elemental Analysis, Spectroscopy and Diffraction at the GSECARS Sector at the Advanced Photon Source. Journal of Environmental Quality, 2017, 46, 1158-1165.	2.0	24
66	A flow-through reaction cell that couples time-resolved X-ray diffraction with stable isotope analysis. Journal of Applied Crystallography, 2011, 44, 429-432.	4.5	23
67	Surface structure of magnetite (111) under hydrated conditions by crystal truncation rod diffraction. Surface Science, 2010, 604, 1082-1093.	1.9	21
68	Simultaneous Adsorption and Incorporation of Sr²⁺ at the Barite (001)â€“Water Interface. Journal of Physical Chemistry C, 2019, 123, 1194-1207.	3.1	21
69	Micro-XAS studies with sorbed plutonium on tuff. Journal of Synchrotron Radiation, 1999, 6, 350-352.	2.4	20
70	A refined monoclinic structure for a variety of "hydrohematite". American Mineralogist, 2015, 100, 570-579.	1.9	20
71	Triple chain model of the reconstructed Mo(001) surface. Physical Review Letters, 1993, 70, 1291-1294.	7.8	19
72	Effect of biofilm coatings at metal-oxide/water interfaces I: Pb(II) and Zn(II) partitioning and speciation at Shewanella oneidensis/metal-oxide/water interfaces. Geochimica Et Cosmochimica Acta, 2016, 188, 368-392.	3.9	19

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73	X-ray determination of the 1Ã—3 reconstruction of Pt(110). Physical Review B, 1993, 47, 10700-10705.	3.2	18
74	Competitive Sorption of Pb(II) and Zn(II) on Polyacrylic Acid-Coated Hydrated Aluminum-Oxide Surfaces. Environmental Science & Technology, 2013, 47, 12131-12139.	10.0	18
75	In situ structural study of the surface complexation of lead(II) on the chemically mechanically polished hematite (<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif") Tj ETQq1 1 0.784314 rgBT /Ov surface. Journal of Colloid and Interface Science, 2018, 524, 65-75.	9.4	18
76	Layerwise reaction at a buried interface. Physical Review Letters, 1992, 69, 2539-2542.	7.8	17
77	Construction and performance of a bent crystal xâ€ray monochromator. Review of Scientific Instruments, 1993, 64, 374-378.	1.3	16
78	Trace Metal Ion Partitioning at Polymer Filmâ^'Metal Oxide Interfaces:Â Long-Period X-ray Standing Wave Study. Langmuir, 2005, 21, 4503-4511.	3.5	16
79	Potentialâ€Specific Structure at the Hematiteâ€“Electrolyte Interface. Advanced Functional Materials, 2018, 28, 1705618.	14.9	16
80	Response of interfacial water to arsenate adsorption on corundum (0â€¯0â€¯1) surfaces: Effects of pH and adsorbate surface coverage. Geochimica Et Cosmochimica Acta, 2018, 239, 198-212.	3.9	16
81	Mineralogical and geochemical constraints on chromium oxidation induced by birnessite. Applied Geochemistry, 2019, 108, 104365.	3.0	16
82	Cluster formation in the adsorbate-induced reconstruction of the O/Mo(001) surface. Journal of Physics Condensed Matter, 1992, 4, 5845-5854.	1.8	15
83	Anharmonic thermal vibrations observed by surface X-ray diffraction for. Surface Science, 1995, 331-333, 1422-1429.	1.9	15
84	Surface oxidation of rhodonite: structural and chemical study by surface scattering and glancing incidence XAS techniques. Mineralogical Magazine, 2003, 67, 1205-1219.	1.4	13
85	Electrolyte layering at the calcite(104)â€“water interface indicated by Rb⁺- and Se(<scp>vi</scp>) K-edge resonant interface diffraction. Physical Chemistry Chemical Physics, 2014, 16, 12782-12792.	2.8	13
86	Elastic and inelastic behavior of graphitic C3N4 under high pressure. Chemical Physics Letters, 2013, 575, 67-70.	2.6	12
87	Oxidative Corrosion of the UO2 (001) Surface by Nonclassical Diffusion. Langmuir, 2017, 33, 13189-13196.	3.5	12
88	Structure and Surface Complexation at the Calcite(104)â€“Water Interface. Environmental Science & Technology, 2021, 55, 12403-12413.	10.0	12
89	A new facility for high-pressure research at the advanced photon source. Geophysical Monograph Series, 1998, , 79-87.	0.1	11
90	Effects of the background electrolyte on Th(IV) sorption to muscovite mica. Geochimica Et Cosmochimica Acta, 2015, 165, 280-293.	3.9	11

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91	Near-surface and bulk short-range order inCu3Au. Physical Review B, 1995, 52, 9955-9963.	3.2	10
92	Higher order reconstructions of Pt(110) induced by impurities. Surface Science, 1996, 367, 105-112.	1.9	10
93	A new x-ray interface and surface scattering environmental cell design for in situ studies of radioactive and atmosphere-sensitive samples. Review of Scientific Instruments, 2011, 82, 075105.	1.3	10
94	Dynamics of silver nanoparticles at the solution/biofilm/mineral interface. Environmental Science: Nano, 2018, 5, 2394-2405.	4.3	10
95	Mineralâ€“Water Interface Structure of Xenotime (YPO4) {100}. Journal of Physical Chemistry C, 2018, 122, 20232-20243.	3.1	10
96	Epitaxial Growth of Gibbsite Sheets on the Basal Surface of Muscovite Mica. Journal of Physical Chemistry C, 2019, 123, 27615-27627.	3.1	10
97	Superhydrous hematite and goethite: A potential water reservoir in the red dust of Mars?. Geology, 0, , .	4.4	10
98	Coverage dependent adsorption sites in the K/Cu(100) system: A crystal truncation rod analysis. Zeitschrift Fur Kristallographie - Crystalline Materials, 1993, 208, 73-92.	0.8	9
99	Effect of biofilm coatings at metal-oxide/water interfaces II: Competitive sorption between Pb(II) and Zn(II) at Shewanella oneidensis/metal-oxide/water interfaces. Geochimica Et Cosmochimica Acta, 2016, 188, 393-406.	3.9	9
100	Formation and Aggregation of ZrO₂ Nanoparticles on Muscovite (001). Journal of Physical Chemistry C, 2018, 122, 3865-3874.	3.1	9
101	Fast identification of mineral inclusions in diamondÂat GSECARS using synchrotron X-ray microtomography, radiography and diffraction. Journal of Synchrotron Radiation, 2019, 26, 1763-1768.	2.4	9
102	Application of grazing incidence x-ray fluorescence technique to discriminate and quantify implanted solar wind. Journal of Applied Physics, 2009, 105, 064905.	2.5	8
103	The sub-micron resolution X-ray spectroscopy beamline at NSLS-II. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2011, 649, 46-48.	1.6	8
104	A Comparison of Adsorption, Reduction, and Polymerization of the Plutonyl(VI) and Uranyl(VI) Ions from Solution onto the Muscovite Basal Plane. Langmuir, 2016, 32, 10473-10482.	3.5	8
105	Reductive Dissolution Mechanisms at the Hematite-Electrolyte Interface Probed by in Situ X-ray Scattering. Journal of Physical Chemistry C, 2019, 123, 8077-8085.	3.1	8
106	Hematite-goethite ratios at pHÂ2â€“13 and 25â€“170ÂÂ°C: A time-resolved synchrotron X-ray diffraction study. Chemical Geology, 2022, 606, 120995.	3.3	8
107	Sputtering of Ge(001): transition between dynamic scaling regimes. Surface Science, 1997, 377-379, 1038-1041.	1.9	7
108	Competitive Adsorption of ZrO₂ Nanoparticle and Alkali Cations (Li⁺â€“Cs⁺) on Muscovite (001). Langmuir, 2018, 34, 12270-12278.	3.5	7

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109	A Paris-Edinburgh Cell for High-Pressure and High-Temperature Structure Studies on Silicate Liquids Using Monochromatic Synchrotron Radiation. Minerals (Basel, Switzerland), 2019, 9, 715.	2.0	7
110	Comparative response of interfacial water structure to pH variations and arsenate adsorption on corundum (0â€¯1â€¯2) and (0â€¯0â€¯1) surfaces. Geochimica Et Cosmochimica Acta, 2019, 246, 406-418.	3.9	7
111	Effect of Background Electrolyte Composition on the Interfacial Formation of Th(IV) Nanoparticles on the Muscovite (001) Basal Plane. Journal of Physical Chemistry C, 2021, 125, 16524-16535.	3.1	7
112	Interfacial X-ray oscillations during growth of Pd2Si on Si(111). Applied Surface Science, 1992, 60-61, 498-504.	6.1	6
113	Transition between dynamic regimes in the sputter ablation of Ge(001). Europhysics Letters, 1997, 38, 447-452.	2.0	6
114	Evolution of Strain in Heteroepitaxial Cadmium Carbonate Overgrowths on Dolomite. Crystal Growth and Design, 2018, 18, 2871-2882.	3.0	6
115	Anomalous power-law ordering kinetics of Pb on Ni(001). Physical Review B, 1992, 46, 5024-5027.	3.2	5
116	Chapter 2 Anion Sorption Topology on Hematite: Comparison of Arsenate and Silicate. Developments in Earth and Environmental Sciences, 2007, , 31-65.	0.1	5
117	Discrimination and quantification of Fe and Ni abundances in Genesis solar wind implanted collectors using X-ray standing wave fluorescence yield depth profiling with internal referencing. Chemical Geology, 2016, 441, 246-255.	3.3	5
118	Epitaxy and domain growth of Pb on Ni(001). Journal of Physics Condensed Matter, 1994, 6, 6111-6123.	1.8	4
119	Mirrors for nanofocusing x-ray beams. , 2002, , .		4
120	Chapter 1 Surface Structure and Reactivity of Iron Oxideâ€“Water Interfaces. Developments in Earth and Environmental Sciences, 2007, , 1-29.	0.1	4
121	X-ray fluorescence tomography using imaging detectors. , 2010, , .		4
122	4. Probing of Pressure-Induced Bonding Transitions in Crystalline and Amorphous Earth Materials: Insights from X-ray Raman Scattering at High Pressure. , 2014, , 139-174.		4
123	The SUNY X21B beamline at NSLS: Spectroscopy and versatile surface science facility. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 1988, 266, 210-214.	1.6	3
124	Metastable vs. unstable growth in the subsurface ordering dynamics of Cu 3 Au (001). Europhysics Letters, 2001, 53, 570-576.	2.0	3
125	Dissolution Kinetics of Epitaxial Cadmium Carbonate Overgrowths on Dolomite. ACS Earth and Space Chemistry, 2019, 3, 212-220.	2.7	3
126	Experimental calibration of the reduced partition function ratios of tetrahedrally coordinated silicon from the Debyeâ€“Waller factors. Contributions To Mineralogy and Petrology, 2021, 176, 1.	3.1	3

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127	Impact of Ionâ€“Ion Correlations on the Adsorption of M(III) (M = Am, Eu, Y) onto Muscovite (001) in the Presence of Sulfate. Journal of Physical Chemistry C, 2022, 126, 1400-1410.	3.1	3
128	Recent developments on high-pressure single-crystal X-ray diffraction at the Partnership for eXtreme Xtallography (PX2) program. Physics and Chemistry of Minerals, 2022, 49, .	0.8	3
129	The structure of K- and Cs-monolayers on Cu(0 0 1): diffraction experiments far from the Bragg point. Physica B: Condensed Matter, 1994, 198, 66-69.	2.7	2
130	Determining the Conformation of an Adsorbed Brâ^'PEGâ^'Peptide by Long Period X-Ray Standing Wave Fluorescence. Langmuir, 2005, 21, 7899-7906.	3.5	2
131	Compressional, temporal, and compositional behavior of H2-O2 compound formed by high pressure x-ray irradiation. Journal of Chemical Physics, 2011, 134, 234502.	3.0	2
132	A multi-faceted experimental study on the dynamic behavior of MgSiO3 glass in the Earthâ€™s deep interior. American Mineralogist, 2022, 107, 1313-1324.	1.9	2
133	Interfacial X-Ray Scattering From Small Surfaces: Adapting Mineral-Fluid Structure Methods for Microcrystalline Materials. Clays and Clay Minerals, 2021, 69, 688-701.	1.3	2
134	Recoating mirrors having a chromium underlayer. , 2004, 5193, 177.		1
135	Correction for Meng et al. , Inelastic x-ray scattering of dense solid oxygen: Evidence for intermolecular bonding. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 16057-16057.	7.1	1
136	<title>Kinetics of surface ordering: Pb on Ni(001)</title>. , 1991, , .		0
137	Recent advances in surface, interface, and environmental geochemistry. , 2007, , .		0
138	Microfocusing using K-B optics for GEOCARS-APS: first results. Acta Crystallographica Section A: Foundations and Advances, 1996, 52, C531-C531.	0.3	0