

Michael Feuerbacher

List of Publications by Year in descending order

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citations

136885

32
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133188

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150
all docs

150
docs citations

150
times ranked

2902
citing authors

#	ARTICLE	IF	CITATIONS
1	Discovery of a Superconducting High-Entropy Alloy. <i>Physical Review Letters</i> , 2014, 113, 107001.	2.9	360
2	Al ₁₃ Fe ₄ as a low-cost alternative for palladium in heterogeneous hydrogenation. <i>Nature Materials</i> , 2012, 11, 690-693.	13.3	344
3	Hexagonal High-entropy Alloys. <i>Materials Research Letters</i> , 2015, 3, 1-6.	4.1	239
4	Evidence for a Cluster-Based Structure of AlPdMn Single Quasicrystals. <i>Physical Review Letters</i> , 1996, 77, 3827-3830.	2.9	161
5	Creation and annihilation of free volume during homogeneous flow of a metallic glass. <i>Journal of Applied Physics</i> , 2005, 97, 033506.	1.1	161
6	The plasticity of icosahedral quasicrystals. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 1997, 233, 103-110.	2.6	123
7	In-situobservation of dislocation motion in icosahedral Al-Pd-Mn single quasicrystals. <i>Philosophical Magazine Letters</i> , 1995, 71, 99-105.	0.5	102
8	Superconductivity in thermally annealed Ta-Nb-Hf-Zr-Ti high-entropy alloys. <i>Journal of Alloys and Compounds</i> , 2017, 695, 3530-3540.	2.8	92
9	Study of plastically deformed icosahedral Al[δ]Pd[δ]Mn single quasicrystals by transmission electron microscopy. <i>Philosophical Magazine Letters</i> , 1995, 72, 375-384.	0.5	82
10	Thermal and electrical transport properties of the single-phase quasicrystalline material: Al _{70.8} Pd _{20.9} Mn _{8.3} . <i>Applied Physics Letters</i> , 1999, 75, 1854-1856.	1.5	79
11	A single-phase bcc high-entropy alloy in the refractory Zr-Nb-Ti-V-Hf system. <i>Scripta Materialia</i> , 2018, 152, 40-43.	2.6	78
12	Complex magnetism of Ho-Dy-Y-Gd-Tb hexagonal high-entropy alloy. <i>Physical Review B</i> , 2015, 92, .	1.1	72
13	Intrinsic deformation properties of icosahedral Al-Pd-Mn single quasicrystals. <i>Philosophical Magazine Letters</i> , 1995, 71, 91-98.	0.5	71
14	Novel Type of Dislocation in an Al-Pd-Mn Quasicrystal Approximant. <i>Physical Review Letters</i> , 1999, 82, 3468-3471.	2.9	67
15	Plastic-deformation mechanism in complex solids. <i>Nature Materials</i> , 2010, 9, 332-336.	13.3	62
16	Microstructural and mechanical characterization of an equiatomic YGdTbDyHo high entropy alloy with hexagonal close-packed structure. <i>Acta Materialia</i> , 2018, 156, 86-96.	3.8	58
17	Dislocations and deformation microstructure in a B2-ordered Al ₂₈ Co ₂₀ Cr ₁₁ Fe ₁₅ Ni ₂₆ high-entropy alloy. <i>Scientific Reports</i> , 2016, 6, 29700.	1.6	56
18	Dislocation density evolution upon plastic deformation of Al-Pd-Mn single quasicrystals. <i>Philosophical Magazine Letters</i> , 1999, 79, 785-796.	0.5	54

#	ARTICLE	IF	CITATIONS
19	Mechanical Behavior of Quasicrystals. MRS Bulletin, 1997, 22, 65-68.	1.7	53
20	Plastic deformation of decagonal Al-Ni-Co quasicrystals. Philosophical Magazine Letters, 1997, 76, 369-376.	0.5	53
21	Friction mechanism of dislocation motion in icosahedral Al-Pd-Mn quasicrystals. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1999, 79, 2123-2135.	0.7	49
22	Entropy Determination of Single-Phase High Entropy Alloys with Different Crystal Structures over a Wide Temperature Range. Entropy, 2018, 20, 654.	1.1	49
23	Reinvestigation of the Al-Mn-Pd alloy system in the vicinity of the T- and R-phases. Intermetallics, 2008, 16, 71-87.	1.8	46
24	Mechanical size effects in a single crystalline equiatomic FeCrCoMnNi high entropy alloy. Scripta Materialia, 2017, 129, 52-55.	2.6	46
25	Superconductivity in the complex metallic alloy Al_3Mg_2 . Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 2009, 80, 1151-1163.	1.1	44
26	Structure investigation of the (100) surface of the orthorhombic Al_3Mg_2 . Physical Review B, 2009, 80, .	1.1	43
27	Plastic deformation properties of Zr-Nb-Ti-Ta-Hf high-entropy alloys. Philosophical Magazine, 2015, 95, 1221-1232.	0.7	42
28	Plastic deformation of icosahedral Al-Pd-Mn single quasicrystals I. Experimental results. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 2000, 80, 1151-1163.	0.7	40
29	In-situ observation of dislocation motion in icosahedral Al-Pd-Mn quasicrystals. Philosophical Magazine, 2004, 84, 2777-2792.	0.7	36
30	Mechanical spectroscopy of Al-Pd-Mn single quasicrystals. Philosophical Magazine Letters, 1996, 74, 81-88.	0.5	35
31	Dislocation plasticity in FeCoCrMnNi high-entropy alloy: quantitative insights from <i>in situ</i> transmission electron microscopy deformation. Materials Research Letters, 2020, 8, 216-224.	4.1	35
32	Broken ergodicity, memory effect, and rejuvenation in Taylor-phase and decagonal Al_3Mg_2 . Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 2000, 80, 1165-1181.	1.1	34
33	Plastic deformation of icosahedral Al-Pd-Mn single quasicrystals II. Interpretation of the experimental results. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 2000, 80, 1165-1181.	0.7	33
34	Structure of dislocations and stacking faults in the complex intermetallic $\sqrt{3} \times \sqrt{3} \times \sqrt{3}$ -(Al-Pd-Mn) phase. Philosophical Magazine, 2003, 83, 4103-4122.	0.7	33
35	Atomic model of dislocations in Al-Pd-Mn icosahedral quasicrystals. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1998, 77, 1481-1497.	0.7	31
36	Experimental signatures of spiky local density of states in quasicrystals. Physical Review B, 2009, 79, .	1.1	31

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37	Stacking faults in high-temperature-deformed Al-Pd-Mn icosahedral quasicrystals. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 1998, 78, 273-284.	0.7	30
38	Magnetic and transport properties of the giant-unit-cell Al ₃ 26Mg ₂ complex metallic alloy. Intermetallics, 2007, 15, 1367-1376.	1.8	28
39	Plastic deformation properties of the orthorhombic complex metallic alloy phase Al ₁₃ Co ₄ . Intermetallics, 2007, 15, 1425-1431.	1.8	28
40	Phase transformations in mechanically milled and annealed single-phase $\hat{\Gamma}$ -Al ₃ Mg ₂ . Acta Materialia, 2008, 56, 1136-1143.	3.8	27
41	Single-crystal plasticity of the complex metallic alloy phase $\hat{\Gamma}$ -Al $\hat{\Gamma}$ -Mg. Intermetallics, 2007, 15, 833-837.	1.8	26
42	Novel metadislocation variants in orthorhombic Al $\hat{\Gamma}$ -Pd $\hat{\Gamma}$ -Fe. Acta Materialia, 2008, 56, 1849-1856.	3.8	26
43	Plastic deformation properties of the orthorhombic $\hat{\Gamma}$ -(Al-Pd-Mn) quasicrystal approximant. Philosophical Magazine Letters, 2001, 81, 639-647.	0.5	25
44	Dynamics of phason diffusion in icosahedral Al $\hat{\Gamma}$ -Pd $\hat{\Gamma}$ -Mn quasicrystals. Acta Materialia, 2006, 54, 3233-3240.	3.8	25
45	Magnetic properties of FeAl $\hat{\Gamma}$ -Mn $\hat{\Gamma}$ complex metallic alloy. Philosophical Magazine Letters, 2001, 81, 639-647.	1.1	25
46	A constitutive model for quasicrystal plasticity. Philosophical Magazine Letters, 2001, 81, 473-482.	0.5	24
47	Magnetic, electrical, thermal transport, and thermoelectric properties of the $\hat{\Gamma}$ -Al $\hat{\Gamma}$ -Pd $\hat{\Gamma}$ -Mn complex metallic alloy phases in the Al-Pd-Mn system. Physical Review B, 2005, 72, .	1.1	23
48	The Al-rich region of the Al $\hat{\Gamma}$ -Mn $\hat{\Gamma}$ -Ni alloy system. Part II. Phase equilibria at 620 $\hat{\Gamma}$ -1000 $\hat{\Gamma}$ C. Journal of Alloys and Compounds, 2011, 509, 3795-3805.	2.8	23
49	Metadislocations in the structurally complex orthorhombic alloy Al ₁₃ Co ₄ . Philosophical Magazine, 2008, 88, 2333-2338.	0.7	22
50	Structure of the (010) surface of the orthorhombic complex metallic alloy $\hat{\Gamma}$ -Al $\hat{\Gamma}$ -Pd $\hat{\Gamma}$ -Mn. Physical Review B, 2010, 81, .	1.1	22
51	Electrical, magnetic, thermal and thermoelectric properties of the $\hat{\Gamma}$ -Bergman phase $\hat{\Gamma}$ -Mg ₃₂ (Al,Zn) ₄₉ complex metallic alloy. Journal of Alloys and Compounds, 2007, 430, 29-38.	2.8	21
52	Structural anomaly in the high-entropy alloy ZrNbTiTaHf. Intermetallics, 2016, 68, 11-15.	1.8	21
53	On the concept of metadislocations in complex metallic alloys. Philosophical Magazine, 2006, 86, 935-944.	0.7	20
54	Single-crystal growth of the complex metallic alloy phase Mg ₃₂ (Al,Zn) ₄₉ . Intermetallics, 2008, 16, 943-947.	1.8	20

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73	Icosahedral Ti-Zr-Ni and hydrogenated Ti-Zr-Ni quasicrystals under high pressure. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2000, 294-296, 804-805.	2.6	13
74	Electrical, magnetic, and thermal properties of the $\sqrt{3}$ -FeZn ₁₀ complex intermetallic phase. <i>Physical Review B</i> , 2012, 86, .	1.1	13
75	Bending experiments on the $\sqrt{3}$ -(Al-Pd-Mn) quasicrystal approximant. <i>Philosophical Magazine Letters</i> , 2000, 80, 11-18.	0.5	12
76	Plastic deformation of icosahedral Zn-Mg-Dy single quasicrystals. <i>Philosophical Magazine Letters</i> , 2000, 80, 129-136.	0.5	12
77	Single-crystal growth of the complex metallic alloy phase $\sqrt{2}$ -Al-Mg. <i>Intermetallics</i> , 2007, 15, 1678-1685.	1.8	12
78	High Temperature Oxidation of the Al ₃ Mg ₂ Complex Metallic Alloy. <i>Oxidation of Metals</i> , 2010, 73, 219-232.	1.0	12
79	Dislocations in icosahedral quasicrystals. <i>Chemical Society Reviews</i> , 2012, 41, 6745.	18.7	12
80	Comprehensive model of metadislocation movement in Al ₁₃ Co ₄ . <i>Scripta Materialia</i> , 2015, 98, 24-27.	2.6	12
81	Plastic behaviour of decagonal Al-Ni-Co single quasicrystals. <i>Scripta Materialia</i> , 2003, 49, 25-31.	2.6	11
82	On the nature of phason planes in the complex metallic alloy $\sqrt{3}$ -Al-Pd-Mn. <i>Acta Materialia</i> , 2005, 53, 3833-3840.	3.8	11
83	Crystal growth of copper-rich ytterbium compounds: The predicted giant unit cell structures YbCu _{4.4} and YbCu _{4.25} . <i>Intermetallics</i> , 2009, 17, 6-10.	1.8	11
84	Metadislocations in the complex metallic alloys Ti-Al-Mn (Pd, Fe). <i>Acta Materialia</i> , 2011, 59, 4458-4466.	3.8	11
85	Core Structure and Motion of Metadislocations in the Orthorhombic Structurally Complex Alloy Al ₁₃ Co ₄ . <i>Materials Research Letters</i> , 2014, 2, 146-151.	4.1	11
86	Mechanical spectroscopy of quasicrystals. <i>Journal of Alloys and Compounds</i> , 2000, 310, 184-189.	2.8	10
87	Metadislocation arrangements in the complex metallic alloy $\sqrt{3}$ -Al-Pd-Mn. <i>Philosophical Magazine</i> , 2006, 86, 985-990.	0.7	10
88	Stabilization mechanism of $\sqrt{3}$ -Mg ₁₇ Al ₁₂ and $\sqrt{2}$ -Mg ₂ Al ₃ complex metallic alloys. <i>Journal of Physics Condensed Matter</i> , 2013, 25, 425703.	0.7	10
89	Temperature Dependent Solid Solution Strengthening in the High Entropy Alloy CrMnFeCoNi in Single Crystalline State. <i>Metals</i> , 2020, 10, 1412.	1.0	10
90	High-Temperature In Situ Straining Experiments in the High-Voltage Electron Microscope. <i>Microscopy and Microanalysis</i> , 1998, 4, 226-234.	0.2	9

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91	Self-Diffusion of Ni and Co in Decagonal Al-Ni-Co Quasicrystals. Defect and Diffusion Forum, 2001, 194-199, 873-882.	0.4	9
92	Plastic deformation behaviour of decagonal Al ₇₀ Ni ₁₅ Co ₁₅ single quasicrystals. Philosophical Magazine Letters, 2001, 81, 339-349.	0.5	9
93	Atomic jumps in quasiperiodic Al _{72.6} Ni _{10.5} Co _{16.9} and related crystalline material. Physical Review B, 2002, 65, .	1.1	9
94	Dislocations and dislocation reactions in decagonal Al-Ni-Co quasicrystals. Physical Review B, 2004, 69, .	1.1	9
95	Metadislocation reactions and metadislocation networks in the complex metallic alloy $\text{Al}_{3/4}\text{Al}\text{Pd}\text{Mn}$. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2005, 400-401, 89-92.	2.6	9
96	Structural variations in μ -type $\text{Al}\text{Pd}(\text{Mn, Fe})$ complex metallic alloy phases. Philosophical Magazine, 2008, 88, 507-521.	0.7	9
97	Fermi surface Brillouin-zone-induced pseudogap in $\text{Mg}_{17}\text{Al}_{12}$ and a possible stabilization mechanism of Al_3Mg_2 . Journal of Physics Condensed Matter, 2010, 22, 485501.	0.7	9
98	Experimental aspects of attenuated total reflectance spectroscopy in the infrared. Vibrational Spectroscopy, 1995, 8, 135-140.	1.2	8
99	Investigation of the cluster substructure of icosahedral Al-Pd-Mn quasicrystals by means of exit-plane wavefunction reconstruction in high-resolution electron microscopy. Philosophical Magazine Letters, 1998, 78, 127-137.	0.5	8
100	Structural perfection and the electrical and magnetic responses of icosahedral AlPdMn quasicrystals. Physical Review B, 2003, 68, .	1.1	8
101	Metadislocation core structure and atomic model for metadislocation motion. Acta Materialia, 2013, 61, 3851-3857.	3.8	8
102	Microstructural analysis of plastically deformed icosahedral ZnMgDy single quasicrystals. Journal of Alloys and Compounds, 2002, 342, 330-336.	2.8	7
103	Defects in complex intermetallics and quasicrystals. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2004, 375-377, 84-89.	2.6	7
104	Plastic deformation of decagonal Al ₇₃ Ni ₁₀ Co ₁₇ single quasicrystals. Philosophical Magazine, 2004, 84, 705-718.	0.7	7
105	X-ray photoelectron diffraction on the 6-fold (001) Al_4Mn approximant surface. Philosophical Magazine, 2008, 88, 2095-2102.	0.7	7
106	Chapter 94 Metadislocations. Dislocations in Solids, 2010, , 109-170.	1.6	7
107	Structural complexity of the intermetallic compound $\text{o-Al}_{13}\text{Co}_4$. Journal of Alloys and Compounds, 2020, 820, 153363.	2.8	7
108	Antiphase domains in plastically deformed Zn-Mg-Dy single quasicrystals. Physical Review B, 2001, 64, .	1.1	6

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109	Elastic energy of metadislocations in complex metallic alloys. Acta Materialia, 2012, 60, 1703-1711.	3.8	6
110	Physical properties of the V-Al ₅ Cu ₆ Mg ₂ complex intermetallic phase. Intermetallics, 2013, 39, 50-57.	1.8	6
111	Determination of the Burgers vector of dislocations in icosahedral quasicrystals by a high-resolution lattice-fringe technique. Philosophical Magazine Letters, 2000, 80, 281-288.	0.5	5
112	Cluster structure and low-energy planes in icosahedral Al ₁₃ Pd ₁₃ Mn quasicrystals. Journal of Alloys and Compounds, 2002, 342, 164-168.	2.8	5
113	[010] dislocations in the complex metallic alloy $\frac{1}{3}\text{Al}_2\text{PdMn}$. Acta Materialia, 2004, 52, 1297-1304.	3.8	5
114	Thermal and electrical conductivities in Al-based complex metallic alloys. Philosophical Magazine, 2008, 88, 2155-2162.	0.7	4
115	Magnetoresistance and Hall effect of the complex metal alloy Mg ₂ Al ₃ . Physical Review B, 2008, 78, .	1.1	4
116	Plastic deformation properties of the complex metallic alloy phase $\frac{1}{4}\text{AlMn}$. Intermetallics, 2010, 18, 1737-1743.	1.8	4
117	Nanostructure and local polymorphism in ϵ -ideal-like ϵ -rare-earths-based high-entropy alloys. Materials Characterization, 2021, 172, 110837.	1.9	4
118	Dislocations in basic-nickel decagonal Al ₁₃ Ni ₁₃ Co single quasicrystals. Philosophical Magazine Letters, 2004, 84, 471-481.	0.5	3
119	High-voltage Transmission Electron Microscope in situ Study on Dislocation Motion in Decagonal Al ₁₃ Ni ₁₃ Co Single Quasicrystals. Journal of Materials Research, 2005, 20, 1814-1824.	1.2	3
120	Hall effect in Taylor-phase and decagonal Al ₃ (Mn,Fe) complex intermetallics. Zeitschrift Fur Kristallographie - Crystalline Materials, 2009, 224, 49-52.	0.4	3
121	Hydrogen absorption and desorption in rapidly solidified Mg- Al alloys. Journal of Physics: Conference Series, 2009, 144, 012016.	0.3	3
122	Studies of the time dependence of the magnetization of T-Al ₃ Mn(Pd,Fe) compounds. Journal of Physics: Conference Series, 2010, 200, 032002.	0.3	3
123	Novel defects in Al ₁₃ Pd ₁₃ Fe complex metallic alloys: A micromechanical modelling approach. Intermetallics, 2011, 19, 99-104.	1.8	3
124	Electronic structure of Al_3Mg_2 and Al_{13}Mn and Al_{13}Mn Defects and Diffusion in d-AlNiCo-Quasicrystals - Application of Mechanical Spectroscopy. Defect and Diffusion Forum, 2005, 237-240, 322-327.	1.1	3
125	Defects and Diffusion in d-AlNiCo-Quasicrystals - Application of Mechanical Spectroscopy. Defect and Diffusion Forum, 2005, 237-240, 322-327.	0.4	2
126	Metadislocations in Complex Metallic Alloys and their Relation to Dislocations in Icosahedral Quasicrystals. Israel Journal of Chemistry, 2011, 51, 1235-1245.	1.0	2

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127	Mössbauer and Magnetization Measurements of Al ₃ Mn(Pd,Fe) Compounds. Solid State Phenomena, 0, 170, 127-130.	0.3	2
128	Mössbauer investigations of crystalline and quasicrystalline Al ₃ (Mn,Fe) compounds. Journal of Physics Condensed Matter, 2011, 23, 475501.	0.7	2
129	Electrical resistivity of the 1/4-Al ₄ Mn giant-unit-cell complex metallic alloy. Philosophical Magazine, 2011, 91, 2756-2764.	0.7	2
130	Structural investigation of Pb adsorption on the (010) surface of the orthorhombic T-Al ₃ (Mn,Pd) crystal. Surface Science, 2013, 611, 74-79.	0.8	2
131	Electron microscopy investigations of metal-support interaction effects in M/Y ₂ O ₃ and M/ZrO ₂ thin films (M=Cu, Ni). Materials Chemistry and Physics, 2013, 143, 167-177.	2.0	2
132	Metadislocations in Complex Metallic Alloys. Microscopy and Microanalysis, 2014, 20, 1026-1027.	0.2	2
133	Mechanical Properties of Quasicrystals. Springer Series in Materials Science, 2002, , 305-318.	0.4	2
134	Compressibility of Al ₆₄ Pd _{30.4} Fe _{5.6} . Zeitschrift Fur Kristallographie - Crystalline Materials, 2009, 224, 119-122.	0.4	2
135	Quasicrystal plasticity in the framework of a constitutive model: Interaction of the microstructural parameters at high strain rates. Philosophical Magazine, 2008, 88, 2325-2331.	0.7	1
136	Composite defects in the complex metallic alloy c ₂ -Al-Pd-Fe. Intermetallics, 2010, 18, 1560-1564.	1.8	1
137	Metadislocations: The case of pure glide. Materials Research Society Symposia Proceedings, 2013, 1517, 1.	0.1	1
138	Phason Relaxation Mechanisms in Al-Pd-Mn Single-Quasicrystals. European Physical Journal Special Topics, 1996, 06, C8-239-C8-242.	0.2	1
139	Plastic deformation of icosahedral quasicrystals. Radiation Effects and Defects in Solids, 1999, 148, 65-83.	0.4	0
140	Dislocation Dynamics in Icosahedral Al-Pd-Mn Single Quasicrystals. Materials Research Society Symposia Proceedings, 2000, 643, 651.	0.1	0
141	Plasticity of Quasicrystalline Alloys and their Crystalline Intermetallic Approximants. Radiation Effects and Defects in Solids, 2002, 157, 137-144.	0.4	0
142	Constitutive model of quasicrystal plasticity: Strain-rate and temperature dependence. Materials Research Society Symposia Proceedings, 2003, 805, 158.	0.1	0
143	Plasticity of decagonal Al ₇₃ Ni ₁₀ Co ₁₇ quasicrystals. Materials Research Society Symposia Proceedings, 2003, 805, 182.	0.1	0
144	Anomalous transport in rhombohedral MgM ₂ Al ₃ . Journal of Physics: Conference Series, 2009, 150, 022070.	0.3	0

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145	A comparison of crystalline and quasicrystalline Al-Mn-Fe compounds. <i>Hyperfine Interactions</i> , 2012, 207, 109-112.	0.2	0
146	On the stability of metadislocations with 16 associated phason planes. <i>Intermetallics</i> , 2014, 53, 187-191.	1.8	0
147	Defects. <i>Springer Series in Materials Science</i> , 2002, , 262-279.	0.4	0