William L Johnson

List of Publications by Year
in descending order

143 papers	13,977 citations	36271 51 h-index	19726 117 g-index
146 all docs	146 docs citations	146 times ranked	5301 citing authors

#	Article	IF	Citations
1	Bulk Glass-Forming Metallic Alloys: Science and Technology. MRS Bulletin, 1999, 24, 42-56.	1.7	2,234
2	Designing metallic glass matrix composites with high toughness and tensile ductility. Nature, 2008, 451, 1085-1089.	13.7	1,302
3	Ductile Bulk Metallic Glass. Physical Review Letters, 2004, 93, 255506.	2.9	997
4	A damage-tolerant glass. Nature Materials, 2011, 10, 123-128.	13.3	562
5	Bulk metallic glass formation in binary Cu-rich alloy series â€“ Cu100â^'xZrx (x=34, 36, 38.2, 40 at.%) and mechanical properties of bulk Cu64Zr36 glass. Acta Materialia, 2004, 52, 2621-2624.	3.8	547
6	Unusual Glass-Forming Ability of Bulk Amorphous Alloys Based on Ordinary Metal Copper. Physical Review Letters, 2004, 92, 245504.	2.9	433
7	Melting and crystallization in Ni nanoclusters: The mesoscale regime. Journal of Chemical Physics, 2001, 115, 385-394.	1.2	345
8	Diffusion mechanisms in metallic supercooled liquids and glasses. Nature, 1999, 402, 160-162.	13.7	322
9	Development of tough, low-density titanium-based bulk metallic glass matrix composites with tensile ductility. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 20136-20140.	3.3	308
10	Fundamental Aspects of Bulk Metallic Glass Formation in Multicomponent Alloys. Materials Science Forum, 1996, 225-227, 35-50.	0.3	287
11	Strain Rate Induced Amorphization in Metallic Nanowires. Physical Review Letters, 1999, 82, 2900-2903.	2.9	268
12	Anelastic to Plastic Transition in Metallic Glass-Forming Liquids. Physical Review Letters, 2007, 99, 135502.	2.9	228
13	Molecular dynamics study of the binaryCu46Zr54metallic glass motivated by experiments: Glass formation and atomic-level structure. Physical Review B, 2005, 71, .	1.1	227
14	Rheology and Ultrasonic Properties of Metallic Glass-Forming Liquids: A Potential Energy Landscape Perspective. MRS Bulletin, 2007, 32, 644-650.	1.7	227
15	Gold based bulk metallic glass. Applied Physics Letters, 2005, 87, 061912.	1.5	223
16	Ni-based bulk metallic glass formation in the Niâ€“Nbâ€“Sn and Niâ€“Nbâ€“Snâ€“X (X=B,Fe,Cu) alloy systems. Applied Physics Letters, 2003, 82, 1030-1032.	1.5	212
17	Beating Crystallization in Glass-Forming Metals by Millisecond Heating and Processing. Science, 2011, 332, 828-833.	6.0	201
18	Highly processable bulk metallic glass-forming alloys in the Ptâ€“Coâ€“Niâ€“Cuâ€“P system. Applied Physics Letters, 2004, 84, 3666-3668.	1.5	169

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19	Formation and properties of new Ni-based amorphous alloys with critical casting thickness up to 5 mm. Acta Materialia, 2004, 52, 3493-3497.	3.8	164
20	Critical cooling rate and thermal stability of Zrâ€“Tiâ€“Cuâ€“Niâ€“Be alloys. Applied Physics Letters, 2001, 78, 1213-1215.	1.5	157
21	Deformation and flow in bulk metallic glasses and deeply undercooled glass forming liquidsâ€”a self consistent dynamic free volume model. Intermetallics, 2002, 10, 1039-1046.	1.8	147
22	Pronounced asymmetry in the crystallization behavior during constant heating and cooling of a bulk metallic glass-forming liquid. Physical Review B, 1999, 60, 11855-11858.	1.1	142
23	Model for decomposition and nanocrystallization of deeply undercooled Zr41.2Ti13.8Cu12.5Ni10Be22.5. Applied Physics Letters, 2000, 76, 3394-3396.	1.5	121
24	Amorphous metallic foam. Applied Physics Letters, 2003, 82, 370-372.	1.5	117
25	Cooperative Shear Model for the Rheology of Glass-Forming Metallic Liquids. Physical Review Letters, 2006, 97, 065502.	2.9	114
26	Formation and characterization of amorphous erbiumâ€based alloys prepared by nearâ€isothermal coldâ€rolling of elemental composites. Journal of Applied Physics, 1985, 58, 3865-3870.	1.1	109
27	Timescales of crystallization and viscous flow of the bulk glass-forming Zr-Ti-Ni-Cu-Be alloys. Physical Review B, 2003, 67, .	1.1	109
28	Timeâ€“temperatureâ€“transformation diagram and microstructures of bulk glass forming Pd40Cu30Ni10P20. Applied Physics Letters, 2000, 77, 681-683.	1.5	96
29	Amorphous metals for hard-tissue prosthesis. Jom, 2010, 62, 83-91.	0.9	96
30	Merging of the Î± and Î² relaxations and aging via the Johariâ€“Goldstein modes in rapidly quenched metallic glasses. Applied Physics Letters, 2008, 92, .	1.5	93
31	Bulk metallic glasses â€” a new engineering material. Current Opinion in Solid State and Materials Science, 1996, 1, 383-386.	5.6	92
32	Lightweight Ti-based bulk metallic glasses excluding late transition metals. Scripta Materialia, 2008, 58, 465-468.	2.6	92
33	Isoconfigurational Elastic Constants and Liquid Fragility of a Bulk Metallic Glass Forming Alloy. Physical Review Letters, 2006, 97, 015501.	2.9	91
34	Crystallization kinetics of the bulk-glass-forming Pd43Ni10Cu27P20 melt. Applied Physics Letters, 2000, 77, 1158-1160.	1.5	89
35	Solution to the problem of the poor cyclic fatigue resistance of bulk metallic glasses. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 4986-4991.	3.3	84
36	Criteria for formation of metallic glasses: The role of atomic size ratio. Journal of Chemical Physics, 2003, 119, 9858-9870.	1.2	81

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37	Slow Atomic Motion in Zr-Ti-Cu-Ni-Be Metallic Glasses Studied by NMR. Physical Review Letters, 1998, 81, 5358-5361.	2.9	76
38	Compositional landscape for glass formation in metal alloys. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 9031-9036.	3.3	76
39	Synthesis method for amorphous metallic foam. Journal of Applied Physics, 2004, 96, 7723-7730.	1.1	71
40	High copper content bulk glass formation in bimetallic Cu-Hf system. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2005, 36, 455-458.	1.1	69
41	Spheres of the metallic glass Au55Pb22.5Sb22.5 and their surface characteristics. Applied Physics Letters, 1982, 40, 382-384.	1.5	66
42	Bulk Glass-Forming Metallic Alloys: Science and Technology [1998 Mrs Medal Award Lecture, Presented at Symposium Mm]. Materials Research Society Symposia Proceedings, 1998, 554, 311.	0.1	66
43	Microstructures and mechanical properties of tungsten wire/particle reinforced Zr57Nb5Al10Cu15.4Ni12.6 metallic glass matrix composites. Applied Physics Letters, 2002, 80, 1906-1908.	1.5	65
44	Crystallization of bulk amorphous Zrâ€“Ti(Nb)â€“Cuâ€“Niâ€“Al. Applied Physics Letters, 2000, 77, 525-527.	1.5	64
45	Compositional dependence of thermal, elastic, and mechanical properties in Cuâ€“Zrâ€“Ag bulk metallic glasses. Scripta Materialia, 2008, 58, 159-162.	2.6	63
46	Precious bulk metallic glasses for jewelry applications. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 449-451, 235-238.	2.6	61
47	Precipitation of bcc nanocrystals in bulk Mgâ€“Cuâ€“Y amorphous alloys. Journal of Materials Research, 1996, 11, 2388-2392.	1.2	59
48	Thermal expansion of liquid Tiâ€“6Alâ€“4V measured by electrostatic levitation. Applied Physics Letters, 2006, 89, 111913.	1.5	56
49	Castable Bulk Metallic Glass Strain Wave Gears: Towards Decreasing the Cost of High-Performance Robotics. Scientific Reports, 2016, 6, 37773.	1.6	54
50	Optimizing Bulk Metallic Glasses for Robust, Highly Wearâ€Resistant Gears. Advanced Engineering Materials, 2017, 19, 1600541.	1.6	54
51	Strong configurational dependence of elastic properties for a binary model metallic glass. Applied Physics Letters, 2006, 89, 151901.	1.5	53
52	Correlation between fracture surface morphology and toughness in Zr-based bulk metallic glasses. Journal of Materials Research, 2010, 25, 982-990.	1.2	52
53	Strain Rate Induced Crystallization in Bulk Metallic Glass-Forming Liquid. Physical Review Letters, 2006, 96, 075503.	2.9	50
54	Fracture toughness study of new Zr-based Be-bearing bulk metallic glasses. Scripta Materialia, 2009, 60, 80-83.	2.6	50

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55	Glassy steel optimized for glass-forming ability and toughness. Applied Physics Letters, 2009, 95, .	1.5	49
56	Effect of microalloying on the toughness of metallic glasses. Applied Physics Letters, 2012, 101, .	1.5	46
57	Injection molding metallic glass. Scripta Materialia, 2009, 60, 160-163.	2.6	45
58	Towards an understanding of tensile deformation in Ti-based bulk metallic glass matrix composites with BCC dendrites. Scientific Reports, 2016, 6, 22563.	1.6	44
59	Repeated crystallization in undercooled Zr41Ti14Cu12Ni10Be23 liquids. Applied Physics Letters, 2000, 76, 2343-2345.	1.5	43
60	Modeling the transient flow of undercooled glass-forming liquids. Journal of Applied Physics, 2004, 95, 2857-2865.	1.1	43
61	Enhanced fatigue endurance of metallic glasses through a staircase-like fracture mechanism. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 18419-18424.	3.3	43
62	How the toughness in metallic glasses depends on topological and chemical heterogeneity. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 7053-7058.	3.3	43
63	Stochastic Metallic-Glass Cellular Structures Exhibiting Benchmark Strength. Physical Review Letters, 2008, 101, 145702.	2.9	41
64	Semi-solid induction forging of metallic glass matrix composites. Jom, 2009, 61, 11-17.	0.9	40
65	Cryogenic Charpy impact testing of metallic glass matrix composites. Scripta Materialia, 2012, 66, 284-287.	2.6	40
66	Shaping metallic glasses by electromagnetic pulsing. Nature Communications, 2016, 7, 10576.	5.8	40
67	Bulk Metallic Glass Formation from Strong Liquids. Materials Science Forum, 1998, 269-272, 547-552.	0.3	39
68	History dependent crystallization of Zr41Ti14Cu12Ni10Be23 melts. Journal of Applied Physics, 2000, 88, 44-48.	1.1	39
69	Accessing thermoplastic processing windows in metallic glasses using rapid capacitive discharge. Scientific Reports, 2014, 4, 6441.	1.6	38
70	Investigating Amorphous Metal Composite Architectures as Spacecraft Shielding. Advanced Engineering Materials, 2013, 15, 27-33.	1.6	37
71	Characterization of the Interface Between the Bulk Glass Forming Alloy Zr₄₁Ti₁₄Cu₁₂Ni₁₀Be₂₃ with Pure Metals and Ceramics. Journal of Materials Research, 2000, 15, 1617-1621.	1.2	35
72	TEM study of structural evolution in a copper mold cast Cu46Zr54 bulk metallic glass. Scripta Materialia, 2006, 54, 1117-1122.	2.6	35

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73	Origin of embrittlement in metallic glasses. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 10257-10262.	3.3	34
74	Predicted Optimum Composition for the Glass-Forming Ability of Bulk Amorphous Alloys: Application to Cuâ€“Zrâ€“Al. Journal of Physical Chemistry Letters, 2012, 3, 3143-3148.	2.1	33
75	Thermophysical properties of Niâ€“Nb and Niâ€“Nbâ€“Sn bulk metallic glass-forming melts by containerless electrostatic levitation processing. Journal of Non-Crystalline Solids, 2004, 337, 21-28.	1.5	32
76	Amorphous Fe-based metal foam. Scripta Materialia, 2007, 57, 9-12.	2.6	31
77	Shear flow characteristics and crystallization kinetics during steady non-isothermal flow of Vitreloy-1. Acta Materialia, 2004, 52, 3403-3412.	3.8	30
78	Liquid-like platinum-rich glasses. Scripta Materialia, 2011, 65, 799-802.	2.6	30
79	Extremely low critical cooling rate measured on dispersed Pd43Ni10Cu27P20. Applied Physics Letters, 2002, 80, 2069-2071.	1.5	29
80	Thermal and elastic properties of Cuâ€“Zrâ€“Be bulk metallic glass forming alloys. Applied Physics Letters, 2007, 90, 211901.	1.5	29
81	Hypervelocity Impact Phenomenon in Bulk Metallic Glasses and Composites**. Advanced Engineering Materials, 2014, 16, 85-93.	1.6	29
82	Strong Liquid Behavior of Zr-Ti-Cu-Ni-Be Bulk Metallic Glass Forming Alloys. Materials Research Society Symposia Proceedings, 1996, 455, 369.	0.1	27
83	Fragility of iron-based glasses. Applied Physics Letters, 2011, 99, .	1.5	27
84	Effect of cooling rate on the volume fraction of B2 phases in a CuZrAlCo metallic glass matrix composite. Intermetallics, 2013, 39, 89-93.	1.8	26
85	Crystallization of Mgâ€“Al and Al-based metallic liquids under ultra-high gravity. Intermetallics, 2002, 10, 1167-1175.	1.8	24
86	Structure and mechanical properties of bulk glass-forming Niâ€“Nbâ€“Sn alloys. Scripta Materialia, 2006, 54, 187-190.	2.6	24
87	Crystallization pathways of deeply undercooled Zr-Ti-Cu-Ni-Be melts. Scripta Materialia, 2001, 44, 1251-1255.	2.6	23
88	Rheology and ultrasonic properties of Pt57.5Ni5.3Cu14.7P22.5 liquid. Applied Physics Letters, 2007, 90, 171923.	1.5	23
89	Synthesis of single-component metallic glasses by thermal spray of nanodroplets on amorphous substrates. Applied Physics Letters, 2012, 100, .	1.5	23
90	Crystallization kinetics and glass-forming ability of bulk metallic glassesPd40Cu30Ni10P20andZr41.2Ti13.8Cu12.5Ni10Be22.5from classical theory. Physical Review B, 2006, 74, .	1.1	22

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91	Coarse-grained description of localized inelastic deformation in amorphous metals. Applied Physics Letters, 2009, 94, .	1.5	22
92	Crystallization of Zr₄₁Ti₁₄Cu₁₂Ni₁₀Be<SUB>23 Materials Transactions, JIM, 2000, 41, 1530-1537.		
93	Deformation of glass forming metallic liquids: Configurational changes and their relation to elastic softening. Applied Physics Letters, 2007, 90, 131912.	1.5	21
94	High porosity metallic glass foam: A powder metallurgy route. Applied Physics Letters, 2007, 91, 161903.	1.5	21
95	First-Order Phase Transition in Liquid Ag to the Heterogeneous G-Phase. Journal of Physical Chemistry Letters, 2020, 11, 632-645.	2.1	20
96	In situ composite formation in the Niâ€“(Cu)â€“Tiâ€“Zrâ€“Si system. Scripta Materialia, 2005, 53, 1467-1470.	2.6	19
97	Rheometry and Crystallization of Bulk Metallic Glass Forming Alloys at High Temperatures. Materials Science Forum, 1998, 269-272, 779-784.	0.3	18
98	Near-threshold fatigue crack growth in bulk metallic glass composites. Journal of Materials Research, 2009, 24, 3611-3619.	1.2	18
99	Expansion evolution during foaming of amorphous metals. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 449-451, 863-867.	2.6	16
100	Metallic-glass-matrix composite structures with benchmark mechanical performance. Applied Physics Letters, 2010, 97, .	1.5	16
101	Thermo-plastic expansion of amorphous metallic foam. Journal of Alloys and Compounds, 2007, 434-435, 92-96.	2.8	15
102	Superconductivity in metastable simple cubic alloys. Journal of Applied Physics, 1974, 45, 3683-3684.	1.1	14
103	Dynamic Failure Mechanisms in Beryllium-Bearing Bulk Metallic Glasses. Materials Research Society Symposia Proceedings, 1998, 554, 419.	0.1	14
104	Effect of processing on Charpy impact toughness of metallic glass matrix composites. Journal of Materials Research, 2011, 26, 1260-1268.	1.2	14
105	Enhanced temperature uniformity by tetrahedral laser heating. Review of Scientific Instruments, 2004, 75, 4523-4527.	0.6	13
106	Structural influence on atomic hopping and electronic states of Pd-based bulk metallic glasses. Applied Physics Letters, 2005, 86, 072104.	1.5	13
107	Description of millisecond Ohmic heating and forming of metallic glasses. Acta Materialia, 2013, 61, 3060-3067.	3.8	13
108	Designing color in metallic glass. Scientific Reports, 2019, 9, 3269.	1.6	13

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109	Observation of an apparent first-order glass transition in ultrafragile Ptâ€“Cuâ€“P bulk metallic glasses. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 2779-2787.	3.3	13
110	A twoâ€dimensional phase separation on the spherical surface of the metallic glass Au55Pb22.5Sb22.5. Applied Physics Letters, 1982, 41, 1054-1056.	1.5	11
111	Novel thermoplastic bonding using a bulk metallic glass solder. Scripta Materialia, 2008, 59, 905-908.	2.6	11
112	Calculating glass-forming ability in absence of key kinetic and thermodynamic parameters. Applied Physics Letters, 2010, 97, .	1.5	11
113	Heterogeneous influences on the crystallization of Pd 43 Ni 10 Cu 27 P 20. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 2002, 82, 1207-1217.	0.7	10
114	Improving Ductility in Nanostructured Materials and Metallic Glasses: â€œThree Lawsâ€• Materials Science Forum, 2009, 633-634, 657-663.	0.3	9
115	Compression-compression fatigue of Pd43Ni10Cu27P20 metallic glass foam. Journal of Applied Physics, 2010, 108, 023505.	1.1	9
116	Heterogeneous influences on the crystallization of Pd₄₃Ni₁₀Cu₂₇P₂₀. Philosophical Magazine A: Physics of Condensed Matter, Structure, Defects and Mechanical Properties, 2002, 82, 1207-1217.	0.7	8
117	Structure and properties of Ni60(Nb100â^'xTax)34Sn6 bulk metallic glass alloys. Journal of Non-Crystalline Solids, 2006, 352, 747-755.	1.5	8
118	Deformation and crystallization of Zr-based amorphous alloys in homogeneous flow regime. Journal of Materials Research, 2010, 25, 1137-1148.	1.2	7
119	Crystallization of Supercooled Zr41Ti14Cu12Ni10B23 Melts During Continuous Heating and Cooling. Materials Research Society Symposia Proceedings, 1998, 554, 263.	0.1	6
120	Effect of strain rate on the yielding mechanism of amorphous metal foam. Applied Physics Letters, 2010, 96, 021906.	1.5	6
121	Steady non-Newtonian flow of Vitreloy-1 in continuous extrusion. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2004, 375-377, 270-275.	2.6	5
122	Minimizing convection effects to measure diffusion in liquid droplets during high-temperature electrostatic levitation. Review of Scientific Instruments, 2005, 76, 033909.	0.6	5
123	Viscosity, Relaxation and Crystallization Kinetics In Zr-Ti-Cu-Ni-Be Strong Bulk Metallic Glass Forming Liquids. Materials Research Society Symposia Proceedings, 1998, 554, 223.	0.1	4
124	Critical Cooling Rate and Thermal Stability in Zr-Ti-Cu-Ni-Be Bulk Metallic Glasses. Materials Research Society Symposia Proceedings, 2000, 644, 461.	0.1	4
125	Interfacial instability-driven amorphizationâ•nanocrystallization in a bulkNi45Cu5Ti33Zr16Si1alloy during solidification. Physical Review B, 2005, 72, .	1.1	4
126	Structures and properties of bulk glass forming NiNbSn alloys and NiNbTaSn alloys. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2007, 449-451, 134-138.	2.6	4

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127	Solid State Reactions in the ZR-AL-CU-NI Bulk Metallic Glass Forming Alloy System. Materials Research Society Symposia Proceedings, 1995, 382, 63.	0.1	3
128	Probing Slow Atomic Motions in Metallic Glasses using NMR. Materials Research Society Symposia Proceedings, 1998, 554, 87.	0.1	3
129	Investigation of Metallic and Metallic Glass Hollow Spheres for Fusion Target Application. Materials Research Society Symposia Proceedings, 1981, 9, 105.	0.1	2
130	Molecular Dynamics Simulations of Supercooled Liquid Metals and Glasses. Materials Research Society Symposia Proceedings, 2000, 644, 231.	0.1	2
131	The Lâ€“G phase transition in binary Cuâ€“Zr metallic liquids. Physical Chemistry Chemical Physics, 2021, 24, 497-506.	1.3	2
132	A Study of Amorphous Erbium-Based Alloys Formed by Near-Isothermal Cold-Rolling of Elemental Composites. Materials Research Society Symposia Proceedings, 1985, 58, 27.	0.1	1
133	Deformation Behavior of FCC Crystalline Metallic Nanowires Under High Strain Rates. Materials Research Society Symposia Proceedings, 1998, 554, 367.	0.1	1
134	Transient Deformation and Flow in Bulk Metallic Glasses and Deeply Undercooled Glass Forming Liquids â€” A Self-Consistent Dynamic Free Volume Model. Materials Research Society Symposia Proceedings, 2002, 754, 1.	0.1	1
135	Study of Mushy-Zone Development in Dendritic Microstructures with Glass-Forming Eutectic Matrices Using Electrostatic Levitation. ISRN Materials Science, 2013, 2013, 1-7.	1.0	1
136	Shear Banding in Binary Cu-Zr Metallic Glass: Comparison of the G-Phase With L-Phase. Frontiers in Materials, 2022, 9, .	1.2	1
137	Atomic and Electronic Structure of Amorphous Alloys. Materials Research Society Symposia Proceedings, 1981, 7, 183.	0.1	0
138	Differential Scanning Calorimetry and Guinier Camera/High-Temperature X-Ray Diffraction Studies of the Oxygen Sublattice Phase Transition in the Yba2Cu3O7â˜'x System. Materials Research Society Symposia Proceedings, 1987, 99, 923.	0.1	0
139	The Shear Modulus of Vit 1 in the Supercooled Liquid and Glassy State. Materials Research Society Symposia Proceedings, 2000, 644, 1151.	0.1	0
140	Structural and Phase Transformations During Crystallization of Pd43Ni10Cu27P20 Metallic Glass. Materials Research Society Symposia Proceedings, 2000, 644, 1271.	0.1	0
141	Microstructures and properties of the tungsten wire/particle reinforced Zr57Nb5Al10Cu15.4Ni12.6 metallic glass composites. Materials Research Society Symposia Proceedings, 2002, 754, 1.	0.1	0
142	Fracture Toughness Study on Zr-based Bulk Metallic Glasses. Materials Research Society Symposia Proceedings, 2007, 1048, 4.	0.1	0
143	Back Cover Advanced Engineering Materials 1-2/2013. Advanced Engineering Materials, 2013, 15, 70-70.	1.6	0