

Norbert Huber

List of Publications by Year in descending order

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135
papers

4,348
citations

94269

37
h-index

128067

60
g-index

147
all docs

147
docs citations

147
times ranked

3394
citing authors

#	ARTICLE	IF	CITATIONS
1	On the analysis of plasticity induced crack closure in welded specimens: A mechanism controlled by the stress intensity factor resulting from residual stresses. <i>International Journal of Fatigue</i> , 2022, 162, 106940.	2.8	7
2	A Review of Non-Destructive Testing (NDT) Techniques for Defect Detection: Application to Fusion Welding and Future Wire Arc Additive Manufacturing Processes. <i>Materials</i> , 2022, 15, 3697.	1.3	32
3	A modeling approach to predict the mechanical response of materials to irradiation damage from external sources: Nanoindentation of Pb-implanted ZrSiO ₄ . <i>Materialia</i> , 2022, 24, 101506.	1.3	0
4	A Strategy for Dimensionality Reduction and Data Analysis Applied to Microstructure-Property Relationships of Nanoporous Metals. <i>Materials</i> , 2021, 14, 1822.	1.3	9
5	Hybrid Modelling by Machine Learning Corrections of Analytical Model Predictions towards High-Fidelity Simulation Solutions. <i>Materials</i> , 2021, 14, 1883.	1.3	10
6	Modelling the effect of intrinsic radiation damage on mechanical properties: The crystalline-to-amorphous transition in zircon. <i>Scripta Materialia</i> , 2021, 197, 113789.	2.6	7
7	Image segmentation and analysis for densification mapping of nanoporous gold after nanoindentation. <i>MRS Advances</i> , 2021, 6, 519-523.	0.5	3
8	In situ observation of competitive growth of β grains during $\beta \rightarrow \beta'$ transformation in laser beam manufactured TiAl alloys. <i>Materials Characterization</i> , 2021, 179, 111371.	1.9	9
9	On the prediction of fatigue crack growth based on weight functions in residual stress fields induced by laser shock peening and laser heating. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2021, 44, 3463.	1.7	1
10	Percolation transitions in pyrochlore: Radiation-damage and thermally induced structural reorganization. <i>Applied Physics Letters</i> , 2021, 119, .	1.5	4
11	Effect of laser heating on mechanical properties, residual stresses and retardation of fatigue crack growth in AA2024. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , 2021, 44, 887-900.	1.7	2
12	Giant electrochemical actuation in a nanoporous silicon-polypyrrole hybrid material. <i>Science Advances</i> , 2020, 6, .	4.7	26
13	Prediction of elastic-plastic deformation of nanoporous metals by FEM beam modeling: A bottom-up approach from ligaments to real microstructures. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 791, 139700.	2.6	15
14	A Review of Experimentally Informed Micromechanical Modeling of Nanoporous Metals: From Structural Descriptors to Predictive Structure-Property Relationships. <i>Materials</i> , 2020, 13, 3307.	1.3	23
15	Comment to "Skeletonization-based beam finite element models for stochastic bicontinuous materials: Application to simulations of nanoporous gold" by C. Soyarslan et al. [<i>J. Mater. Res.</i> 33(20), 3371 (2018)]. <i>Journal of Materials Research</i> , 2020, 35, 2831-2834.	1.2	2
16	Editorial: Machine Learning and Data Mining in Materials Science. <i>Frontiers in Materials</i> , 2020, 7, .	1.2	16
17	Electrochemical Actuation in Porous Silicon. <i>ECS Meeting Abstracts</i> , 2020, MA2020-02, 1216-1216.	0.0	0
18	Numerical Investigation of Polymer Coated Nanoporous Gold. <i>Materials</i> , 2019, 12, 2178.	1.3	12

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19	Application of design of experiments for laser shock peening process optimization. International Journal of Advanced Manufacturing Technology, 2019, 102, 1567-1581.	1.5	22
20	A Review of the Application of Machine Learning and Data Mining Approaches in Continuum Materials Mechanics. Frontiers in Materials, 2019, 6, .	1.2	223
21	Computation of Thickness and Mechanical Properties of Interconnected Structures: Accuracy, Deviations, and Approaches for Correction. Frontiers in Materials, 2019, 6, .	1.2	13
22	Understanding precipitate evolution during friction stir welding of Al-Zn-Mg-Cu alloy through in-situ measurement coupled with simulation. Acta Materialia, 2018, 148, 163-172.	3.8	64
23	Improving the fatigue performance of airframe structures by combining geometrical modifications and laser heating. Fatigue and Fracture of Engineering Materials and Structures, 2018, 41, 1183-1195.	1.7	3
24	Connections Between Topology and Macroscopic Mechanical Properties of Three-Dimensional Open-Pore Materials. Frontiers in Materials, 2018, 5, .	1.2	38
25	Fatigue Life Extension of AA2024 Specimens and Integral Structures by Laser Shock Peening. MATEC Web of Conferences, 2018, 165, 18001.	0.1	6
26	Probabilistic fatigue-life assessment model for laser-welded Ti-6Al-4V butt joints in the high-cycle fatigue regime. International Journal of Fatigue, 2018, 116, 22-35.	2.8	40
27	Skeletonization, Geometrical Analysis, and Finite Element Modeling of Nanoporous Gold Based on 3D Tomography Data. Metals, 2018, 8, 282.	1.0	30
28	Deformation mechanisms in nanoporous metals: Effect of ligament shape and disorder. Computational Materials Science, 2017, 127, 194-203.	1.4	44
29	Effects of laser shock peening on the microstructure and fatigue crack propagation behaviour of thin AA2024 specimens. International Journal of Fatigue, 2017, 98, 223-233.	2.8	69
30	Artificial neural network for correction of effects of plasticity in equibiaxial residual stress profiles measured by hole drilling. Journal of Strain Analysis for Engineering Design, 2017, 52, 137-151.	1.0	33
31	Effect of nodal mass on macroscopic mechanical properties of nanoporous metals. International Journal of Mechanical Sciences, 2017, 134, 234-243.	3.6	18
32	Mechanical properties of laser beam welded similar and dissimilar aluminum alloys. Journal of Manufacturing Processes, 2017, 29, 272-280.	2.8	33
33	Plastic Poisson's Ratio of Nanoporous Metals: A Macroscopic Signature of Tension-Compression Asymmetry at the Nanoscale. Nano Letters, 2017, 17, 6258-6266.	4.5	55
34	Material Influence on Crenellation Effectiveness in Damage Tolerant Design. Procedia Structural Integrity, 2017, 5, 263-270.	0.3	0
35	Laser Weldability of High-Strength Al-Zn Alloys and Its Improvement by the Use of an Appropriate Filler Material. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2016, 47, 2830-2841.	1.1	9
36	Phase Transformations During Solidification of a Laser-Beam-Welded TiAl Alloy—An In Situ Synchrotron Study. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2016, 47, 5761-5770.	1.1	6

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37	Effect of elasto-plastic material behaviour on determination of residual stress profiles using the hole drilling method. <i>Journal of Strain Analysis for Engineering Design</i> , 2016, 51, 572-581.	1.0	26
38	Phase Transformation and Residual Stress in a Laser Beam Spot-Welded TiAl-Based Alloy. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2016, 47, 5750-5760.	1.1	8
39	Fibre laser welding of high-alloyed Al-Zn-Mg-Cu alloys. <i>Journal of Materials Processing Technology</i> , 2016, 237, 155-162.	3.1	43
40	Scaling laws of nanoporous gold under uniaxial compression: Effects of structural disorder on the solid fraction, elastic Poisson's ratio, Young's modulus and yield strength. <i>Journal of the Mechanics and Physics of Solids</i> , 2016, 92, 55-71.	2.3	60
41	Optimization of crenellation patterns for fatigue crack retardation via genetic algorithm and the reduction in computational cost. <i>Engineering Failure Analysis</i> , 2016, 63, 21-30.	1.8	5
42	Review of Residual Stress Modification Techniques for Extending the Fatigue Life of Metallic Aircraft Components. <i>Applied Mechanics Reviews</i> , 2015, 67, .	4.5	46
43	Crenellation Patterns for Fatigue Crack Retardation in Fuselage Panels Optimized via Genetic Algorithm. <i>Procedia Engineering</i> , 2015, 114, 248-254.	1.2	2
44	Influence of the geometry on the fatigue performance of crenellated fuselage panels. <i>Ciência & Tecnologia Dos Materiais</i> , 2015, 27, 100-107.	0.5	3
45	Damage modeling of small-scale experiments on dental enamel with hierarchical microstructure. <i>Acta Biomaterialia</i> , 2015, 15, 244-253.	4.1	27
46	Experimental and numerical crushing analyses of thin-walled magnesium profiles. <i>International Journal of Crashworthiness</i> , 2015, 20, 177-190.	1.1	27
47	In situ study of phase transformations during laser-beam welding of a TiAl alloy for grain refinement and mechanical property optimization. <i>Intermetallics</i> , 2015, 62, 27-35.	1.8	26
48	Mechanical characterization of oligo(ethylene glycol)-based hydrogels by dynamic nanoindentation experiments. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2015, 46, 1-10.	1.5	12
49	Single-sided laser beam welding of a dissimilar AA2024-AA7050 T-joint. <i>Materials & Design</i> , 2015, 76, 110-116.	5.1	43
50	Self-Assembled Ultra High Strength, Ultra Stiff Mechanical Metamaterials Based on Inverse Opals. <i>Advanced Engineering Materials</i> , 2015, 17, 1420-1424.	1.6	48
51	Design of Local Heat Treatment for Crack Retardation in Aluminium Alloys. <i>Procedia Engineering</i> , 2015, 114, 271-276.	1.2	7
52	A parametric study of laser spot size and coverage on the laser shock peening induced residual stress in thin aluminium samples. <i>Journal of Engineering</i> , 2015, 2015, 97-105.	0.6	17
53	Numerical prediction of the stress-strain response of a lamellar β -TiAl polycrystal using a two-scale modelling approach. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015, 620, 273-285.	2.6	12
54	Characterization and modeling of the influence of artificial aging on the microstructural evolution of age-hardenable AlSi10Mg(Cu) aluminum alloys. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2014, 610, 46-53.	2.6	26

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55	Effect of Post-weld Heat Treatment on Microstructure and Mechanical Properties of Laser Beam Welded TiAl-based Alloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2014, 45, 16-28.	1.1	8
56	A combined experimental-numerical approach for elasto-plastic fracture of individual grain boundaries. Journal of the Mechanics and Physics of Solids, 2014, 64, 455-467.	2.3	36
57	Increased room temperature formability of Mg AZ31 by high speed Friction Stir Processing. Materials & Design, 2014, 54, 980-988.	5.1	20
58	Scaling laws of nanoporous metals under uniaxial compression. Acta Materialia, 2014, 67, 252-265.	3.8	140
59	Effects of tool rotational and welding speed on microstructure and mechanical properties of bobbin-tool friction-stir welded Mg AZ31. Materials & Design, 2014, 64, 714-720.	5.1	111
60	The Development of the Rotational Friction Welding Process for the Welding of β -TiAl-Casting Alloy Ti-47Al-3.5(Mn+Cr+Nb)-0.8(B+Si) to Ti6Al4V. Praktische Metallographie/Practical Metallography, 2014, 51, 321-352.	0.1	0
61	On the interaction between different size effects in fibre reinforced PMMA: Towards composites with optimised fracture behaviour. Computational Materials Science, 2013, 80, 35-42.	1.4	9
62	Size effects in short fibre reinforced composites. Engineering Fracture Mechanics, 2013, 100, 17-27.	2.0	22
63	Comparative study of mechanical properties using standard and micro-specimens of base materials Inconel 625, Inconel 718 and Ti-6Al-4V. Journal of Materials Research and Technology, 2013, 2, 43-47.	2.6	33
64	Magnesium degradation as determined by artificial neural networks. Acta Biomaterialia, 2013, 9, 8722-8729.	4.1	57
65	Towards bio-inspired engineering materials: Modeling and simulation of the mechanical behavior of hierarchical bovine dental structure. Computational Materials Science, 2013, 79, 390-401.	1.4	30
66	Asymmetric mechanical properties and tensile behaviour prediction of aluminium alloy 5083 friction stir welding joints. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2013, 565, 44-50.	2.6	90
67	The influence of refill FSSW parameters on the microstructure and shear strength of 5042 aluminium welds. Journal of Materials Processing Technology, 2013, 213, 997-1005.	3.1	125
68	A study on local thermal and strain phenomena of high-speed friction stir-processed Mg AZ31. Welding in the World, Le Soudage Dans Le Monde, 2013, 57, 515-521.	1.3	8
69	Investigations of microstructural, thermal and local strain phenomena of high speed friction stir processed Mg AZ31. , 2013, , 59-65.		0
70	Retardation of fatigue crack growth in aircraft aluminium alloys via laser heating. International Journal of Structural Integrity, 2013, 4, 429-445.	1.8	7
71	Hierarchical flexural strength of enamel: transition from brittle to damage-tolerant behaviour. Journal of the Royal Society Interface, 2012, 9, 1265-1274.	1.5	55
72	Shear layer modelling for bobbin tool friction stir welding. Science and Technology of Welding and Joining, 2012, 17, 454-459.	1.5	23

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73	Use of spherical indentation technique for measurement of property variations of $\hat{\text{T}}\text{iAl}$. Journal of Materials Research, 2012, 27, 378-388.	1.2	7
74	Investigation of In Situ and Conventional Post-Weld Heat Treatments on Dual-Laser-Beam-Welded $\hat{\text{T}}\text{iAl}$ -Based Alloy. Advanced Engineering Materials, 2012, 14, 923-927.	1.6	14
75	Retardation of fatigue crack growth in aircraft aluminium alloys via laser heating – Numerical prediction of fatigue crack growth. Computational Materials Science, 2012, 65, 461-469.	1.4	16
76	Temperature and Texture Development during High Speed Friction Stir Processing of Magnesium AZ31. Advanced Engineering Materials, 2012, 14, 762-771.	1.6	8
77	Crack retardation mechanism due to overload in base material and laser welds of Al alloys. International Journal of Fatigue, 2012, 42, 95-103.	2.8	31
78	The influence of crack face contact on the prediction of fatigue crack propagation in residual stress fields. Engineering Fracture Mechanics, 2012, 84, 15-24.	2.0	28
79	A method to determine site-specific, anisotropic fracture toughness in biological materials. Scripta Materialia, 2012, 66, 515-518.	2.6	19
80	Retardation of fatigue crack growth in aircraft aluminium alloys via laser heating – Experimental proof of concept. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2012, 546, 8-14.	2.6	27
81	In Situ Experiments with Synchrotron High-Energy X-Rays and Neutrons. Advanced Engineering Materials, 2011, 13, 658-663.	1.6	80
82	Research with Neutron and Synchrotron Radiation on Aerospace and Automotive Materials and Components. Advanced Engineering Materials, 2011, 13, 637-657.	1.6	5
83	Compressive failure of UD-CFRP containing void defects: In situ SEM microanalysis. Composites Science and Technology, 2011, 71, 1242-1249.	3.8	58
84	Thermal models for bobbin tool friction stir welding. Journal of Materials Processing Technology, 2011, 211, 197-204.	3.1	63
85	On the feasibility of friction spot joining in magnesium/fiber-reinforced polymer composite hybrid structures. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2011, 528, 3841-3848.	2.6	209
86	On characterisation of local stress-strain properties in friction stir welded aluminium AA 5083 sheets using micro-tensile specimen testing and instrumented indentation technique. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2010, 527, 5018-5025.	2.6	31
87	Simulation of friction and wear in DLC/steel contacts for different loading histories and geometries: Ball-on-plate configuration and piston-cylinder-contacts. Tribology International, 2010, 43, 1410-1416.	3.0	6
88	Multi time scale simulations for wear prediction in micro-gears. Wear, 2010, 268, 316-324.	1.5	37
89	Modelling of unlubricated oscillating sliding wear of DLC-coatings considering surface topography, oxidation and graphitisation. Wear, 2010, 268, 1184-1194.	1.5	19
90	Transient simulation of wear in a lobe pump using the wear processor. WIT Transactions on Engineering Sciences, 2010, , .	0.0	0

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91	Fatigue behavior of thin Au and Al films on polycarbonate and polymethylmethacrylate for micro-optical components. <i>Thin Solid Films</i> , 2009, 517, 2702-2707.	0.8	27
92	Influence of specimen preparation, microstructure anisotropy, and residual stresses on stress-strain curves of rolled Al2024 T351 as derived from spherical indentation tests. <i>Journal of Materials Research</i> , 2009, 24, 907-917.	1.2	18
93	An indentation system for determination of viscoplastic stress-strain behavior of small metal volumes before and after irradiation. <i>Journal of Nuclear Materials</i> , 2008, 377, 352-358.	1.3	16
94	Tribological characterization and numerical wear simulation of microcomponents under sliding and rolling conditions. <i>Microsystem Technologies</i> , 2008, 14, 1839-1846.	1.2	11
95	On the effect of a general residual stress state on indentation and hardness testing. <i>Acta Materialia</i> , 2008, 56, 6205-6213.	3.8	134
96	A predictive modeling scheme for wear in tribometers. <i>Tribology International</i> , 2008, 41, 1020-1031.	3.0	84
97	Spherical indentation into elastoplastic materials: Indentation-response based definitions of the representative strain. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2007, 454-455, 1-13.	2.6	68
98	Neural networks for tip correction of spherical indentation curves from bulk metals and thin metal films. <i>Journal of the Mechanics and Physics of Solids</i> , 2007, 55, 391-418.	2.3	30
99	Identification of viscoplastic material parameters from spherical indentation data: Part II. Experimental validation of the method. <i>Journal of Materials Research</i> , 2006, 21, 677-684.	1.2	41
100	Identification of viscoplastic material parameters from spherical indentation data: Part I. Neural networks. <i>Journal of Materials Research</i> , 2006, 21, 664-676.	1.2	71
101	Further investigation on the definition of the representative strain in conical indentation. <i>Journal of Materials Research</i> , 2006, 21, 1810-1821.	1.2	44
102	Reliability studies of microoptical components in NEMO. , 2006, , .		0
103	Modeling and Simulation of Wear in a Pin on Disc Tribometer. , 2006, , 567.		12
104	Modeling and simulation of wear in a pin on disc tribometer. <i>Tribology Letters</i> , 2006, 24, 51-60.	1.2	71
105	Biaxial Fatigue Testing of Thin Films. <i>AIP Conference Proceedings</i> , 2006, , .	0.3	0
106	On the analysis of the stress-strain behaviour of thin metal films on substrates using nanoindentation. <i>Philosophical Magazine</i> , 2006, 86, 5505-5519.	0.7	3
107	Development and validation of an experimental setup for the biaxial fatigue testing of metal thin films. <i>Review of Scientific Instruments</i> , 2006, 77, 103902.	0.6	14
108	Failure assessment of alumina in unlubricated unidirectional sliding contact. <i>Materialwissenschaft Und Werkstofftechnik</i> , 2005, 36, 157-162.	0.5	3

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109	A Finite Element Based Technique for Simulating Sliding Wear. , 2005, , 731.		4
110	Reliability confidence intervals for ceramic components as obtained from bootstrap methods and neural networks. Computational Materials Science, 2005, 34, 1-13.	1.4	18
111	Finite element based simulation of dry sliding wear. Modelling and Simulation in Materials Science and Engineering, 2005, 13, 57-75.	0.8	113
112	Reliability Assessment of a Gas Microsensor. IEEE Transactions on Device and Materials Reliability, 2004, 4, 549-555.	1.5	1
113	An Investigation of Non-linear Stress-strain Behavior of Thin Metal Films. Materials Research Society Symposia Proceedings, 2004, 841, R12.2.1.	0.1	1
114	A new loading history for identification of viscoplastic properties by spherical indentation. Journal of Materials Research, 2004, 19, 101-113.	1.2	44
115	A new loading history for identification of viscoplastic properties by spherical indentation. , 2004, 19, 101.		1
116	Dynamic finite element analysis of a micro lobe pump. Microsystem Technologies, 2003, 9, 465-469.	1.2	13
117	Simulation of the Hertzian contact damage in ceramics. Modelling and Simulation in Materials Science and Engineering, 2003, 11, 477-486.	0.8	5
118	Identification of elastic-plastic material parameters from pyramidal indentation of thin films. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2002, 458, 1593-1620.	1.0	90
119	Experiment and theory of thermal transport properties of heterogeneous composites. High Temperatures - High Pressures, 2002, 34, 431-445.	0.3	0
120	Determination of Poisson's Ratio by Spherical Indentation Using Neural Networks" Part I: Theory. Journal of Applied Mechanics, Transactions ASME, 2001, 68, 218-223.	1.1	30
121	Determination of Poisson's Ratio by Spherical Indentation Using Neural Networks" Part II: Identification Method. Journal of Applied Mechanics, Transactions ASME, 2001, 68, 224-229.	1.1	18
122	A neural network tool for identifying the material parameters of a finite deformation viscoplasticity model with static recovery. Computer Methods in Applied Mechanics and Engineering, 2001, 191, 353-384.	3.4	68
123	Determination of constitutive properties of thin metallic films on substrates by spherical indentation using neural networks. International Journal of Solids and Structures, 2000, 37, 6499-6516.	1.3	37
124	Finite deformation viscoelasticity laws. Mechanics of Materials, 2000, 32, 1-18.	1.7	141
125	Discussion of Finite Deformation Viscoelasticity Laws with Reference to Torsion Loading. Continuum Mechanics and Thermodynamics, 2000, 12, 303-323.	1.4	3
126	THE EFFECT OF KINEMATIC HARDENING ON SPHERICAL INDENTATION. Journal of the Mechanical Behavior of Materials, 2000, 11, 55-58.	0.7	0

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127	Determination of constitutive properties from spherical indentation data using neural networks. Part i: the case of pure kinematic hardening in plasticity laws. Journal of the Mechanics and Physics of Solids, 1999, 47, 1569-1588.	2.3	126
128	Determination of constitutive properties from spherical indentation data using neural networks. Part ii: plasticity with nonlinear isotropic and kinematic hardening. Journal of the Mechanics and Physics of Solids, 1999, 47, 1589-1607.	2.3	112
129	Experimental and theoretical investigation of the effect of kinematic hardening on spherical indentation. Mechanics of Materials, 1998, 27, 241-248.	1.7	28
130	An experimental device for depth-sensing indentation tests in millimeter-scale. Journal of Materials Research, 1998, 13, 1650-1655.	1.2	5
131	A Finite Element Analysis of the Effect of Hardening Rules on the Indentation Test. Journal of Engineering Materials and Technology, Transactions of the ASME, 1998, 120, 143-148.	0.8	26
132	Determination of Young's modulus by spherical indentation. Journal of Materials Research, 1997, 12, 2459-2469.	1.2	32
133	Finite element simulation of microstructure demolding as part of the LIGA process. Microsystem Technologies, 1995, 2, 17-21.	1.2	5
134	Crashworthiness of Magnesium Sheet Structures. Materials Science Forum, 0, 765, 590-594.	0.3	10
135	<i>In Situ&/i> Experiment for Laser Beam Welding of Ti Alloys Using High-Energy X-Rays. Materials Science Forum, 0, 905, 114-119.	0.3	0