

# Xiaodong Li

## List of Publications by Year in descending order

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135  
papers

8,743  
citations

36303

51  
h-index

45317

90  
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138  
all docs

138  
docs citations

138  
times ranked

9808  
citing authors

#	ARTICLE	IF	CITATIONS
1	Unveiling damage mechanisms of chromium-coated zirconium-based fuel claddings at LWR operating temperature by in-situ digital image correlation. <i>Surface and Coatings Technology</i> , 2022, 429, 127909.	4.8	5
2	Cotton-Derived Fe/Fe <sub>3</sub> C-Encapsulated Carbon Nanotubes for High-Performance Lithium-Sulfur Batteries. <i>Nano Letters</i> , 2022, 22, 1217-1224.	9.1	51
3	Recent advances in biomass-derived graphene and carbon nanotubes. <i>Materials Today Sustainability</i> , 2022, 18, 100138.	4.1	27
4	Carbon fibers derived from commodity polymers: A review. <i>Carbon</i> , 2022, 196, 422-439.	10.3	24
5	Upcycling of paper waste for high-performance lithium-sulfur batteries. <i>Materials Today Energy</i> , 2021, 19, 100591.	4.7	20
6	Low-temperature carbonization of polyacrylonitrile/graphene carbon fibers: A combined ReaxFF molecular dynamics and experimental study. <i>Carbon</i> , 2021, 174, 345-356.	10.3	55
7	Analysis of SiC/SiC composites for energy applications at ambient conditions. <i>Journal of the American Ceramic Society</i> , 2021, 104, 481-491.	3.8	8
8	Probing the local creep mechanisms of SiC/SiC ceramic matrix composites with high-temperature nanoindentation. <i>Journal of Materials Research</i> , 2021, 36, 2420-2433.	2.6	5
9	In Situ Observation of Fracture Behavior of Bamboo Culm. <i>Jom</i> , 2021, 73, 1705-1713.	1.9	10
10	Yeast-Derived Carbon Nanotube-Coated Separator for High Performance Lithium-Sulfur Batteries. <i>Jom</i> , 2021, 73, 2516-2524.	1.9	17
11	Characterizing environment-dependent fracture mechanisms of ceramic matrix composites via digital image correlation. <i>Journal of the American Ceramic Society</i> , 2021, 104, 6545-6562.	3.8	9
12	3D digital image correlation evaluation of arthrodesis implants. <i>Clinical Biomechanics</i> , 2020, 71, 29-36.	1.2	7
13	Converting PBO fibers into carbon fibers by ultrafast carbonization. <i>Carbon</i> , 2020, 159, 432-442.	10.3	25
14	Unveiling hermetic failure of ceramic tubes by digital image correlation and acoustic emission. <i>Journal of the American Ceramic Society</i> , 2020, 103, 2146-2159.	3.8	13
15	Unveiling damage mechanisms of chromium-coated zirconium-based fuel claddings by coupling digital image correlation and acoustic emission. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 774, 138850.	5.6	15
16	Low energy electroplasticity in aluminum alloys. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 798, 140235.	5.6	15
17	Tailoring nanocomposite interfaces with graphene to achieve high strength and toughness. <i>Science Advances</i> , 2020, 6, .	10.3	40
18	Prediction of microstructural defects in additive manufacturing from powder bed quality using digital image correlation. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2020, 794, 140002.	5.6	48

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19	Quantifying the effect of tow architecture variability on the performance of biaxially braided composite tubes. <i>Composites Part B: Engineering</i> , 2020, 201, 108383.	12.0	13
20	Graphene reinforced carbon fibers. <i>Science Advances</i> , 2020, 6, eaaz4191.	10.3	87
21	Analysis of tow architecture variability in biaxially braided composite tubes. <i>Composites Part B: Engineering</i> , 2020, 190, 107938.	12.0	19
22	Size and Crystal Orientation-Dependent Thermal Behaviors of ZnO Nanobelts. <i>Journal of Physical Chemistry C</i> , 2020, 124, 27222-27229.	3.1	2
23	The Art of Curved Reinforcing in Biological Armors – Seashells. <i>Journal of Bionic Engineering</i> , 2019, 16, 711-718.	5.0	15
24	Converting eggs to flexible, all-solid supercapacitors. <i>Nano Energy</i> , 2019, 65, 104045.	16.0	60
25	Particle clustering effects on damage mechanisms in elastomeric syntactic foams. <i>Composites Part B: Engineering</i> , 2019, 175, 107160.	12.0	8
26	Unveiling Carbon Ring Structure Formation Mechanisms in Polyacrylonitrile-Derived Carbon Fibers. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 42288-42297.	8.0	36
27	Hard-particle rotation enabled soft-hard integrated auxetic mechanical metamaterials. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2019, 475, 20190234.	2.1	14
28	Bioinspired, graphene-enabled Ni composites with high strength and toughness. <i>Science Advances</i> , 2019, 5, eaav5577.	10.3	55
29	Dynamic self-strengthening of a bio-nanostructured armor – conch shell. <i>Materials Science and Engineering C</i> , 2019, 103, 109820.	7.3	26
30	An overview of residual stresses in metal powder bed fusion. <i>Additive Manufacturing</i> , 2019, 27, 131-149.	3.0	228
31	Lithiation-Aided Conversion of End-of-Life Lithium-Ion Battery Anodes to High-Quality Graphene and Graphene Oxide. <i>Nano Letters</i> , 2019, 19, 512-519.	9.1	106
32	Damage mechanisms in elastomeric foam composites: Multiscale X-ray computed tomography and finite element analyses. <i>Composites Science and Technology</i> , 2019, 169, 195-202.	7.8	26
33	B4C nanoskeleton enabled, flexible lithium-sulfur batteries. <i>Nano Energy</i> , 2019, 58, 30-39.	16.0	82
34	Revealing mechanisms of residual stress development in additive manufacturing via digital image correlation. <i>Additive Manufacturing</i> , 2018, 22, 1-12.	3.0	70
35	Scalable measurements of tow architecture variability in braided ceramic composite tubes. <i>Journal of the American Ceramic Society</i> , 2018, 101, 4297-4307.	3.8	11
36	Ferromagnetic Nanoparticle-Assisted Polysulfide Trapping for Enhanced Lithium-Sulfur Batteries. <i>Advanced Functional Materials</i> , 2018, 28, 1800563.	14.9	109

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37	Targeted production of reactive oxygen species in mitochondria to overcome cancer drug resistance. Nature Communications, 2018, 9, 562.	12.8	242
38	Unveiling polytype transformation assisted growth mechanism in boron carbide nanowires. Journal of Crystal Growth, 2018, 481, 11-17.	1.5	9
39	Uniting Strength and Toughness of Al Matrix Composites with Coordinated Al <sub>3</sub> Ni and Al <sub>3</sub> Ti Reinforcements. Advanced Engineering Materials, 2018, 20, 1700605.	3.5	28
40	In situ defect detection in selective laser melting via full-field infrared thermography. Additive Manufacturing, 2018, 24, 595-605.	3.0	59
41	Graphene and its derivatives in lithium-sulfur batteries. Materials Today Energy, 2018, 9, 319-335.	4.7	138
42	Carbon Nanotubes Derived from Yeast-Fermented Wheat Flour and Their Energy Storage Application. ACS Sustainable Chemistry and Engineering, 2018, 6, 11386-11396.	6.7	67
43	Bioinspired, Multiscale Reinforced Composites with Exceptionally High Strength and Toughness. Nano Letters, 2018, 18, 5812-5820.	9.1	21
44	High-temperature delamination mechanisms of thermal barrier coatings: In-situ digital image correlation and finite element analyses. Acta Materialia, 2017, 128, 54-63.	7.9	70
45	Atomistic Origin of Deformation Twinning in Biomineral Aragonite. Physical Review Letters, 2017, 118, 105501.	7.8	25
46	Towards flexible lithium-sulfur battery from natural cotton textile. Electrochimica Acta, 2017, 246, 507-516.	5.2	137
47	Quantifying the three-dimensional damage and stress redistribution mechanisms of braided SiC/SiC composites by in situ volumetric digital image correlation. Scripta Materialia, 2017, 130, 238-241.	5.2	37
48	New Insights into Mossy Li Induced Anode Degradation and Its Formation Mechanism in Li-S Batteries. ACS Energy Letters, 2017, 2, 2696-2705.	17.4	90
49	Bioinspired, Graphene/Al <sub>2</sub> O <sub>3</sub> Doubly Reinforced Aluminum Composites with High Strength and Toughness. Nano Letters, 2017, 17, 6907-6915.	9.1	128
50	Capillarity Compositing Recycled Paper/Graphene Scaffold for Lithium-Sulfur Batteries with Enhanced Capacity and Extended Lifespan. Small, 2017, 13, 1701927.	10.0	78
51	Biomass-derived renewable carbon materials for electrochemical energy storage. Materials Research Letters, 2017, 5, 69-88.	8.7	402
52	Cloning Nacre's 3D Interlocking Skeleton in Engineering Composites to Achieve Exceptional Mechanical Properties. Advanced Materials, 2016, 28, 5099-5105.	21.0	119
53	High-performance supercapacitors and batteries derived from activated banana-peel with porous structures. Electrochimica Acta, 2016, 222, 1257-1266.	5.2	147
54	Cotton-textile-enabled flexible self-sustaining power packs via roll-to-roll fabrication. Nature Communications, 2016, 7, 11586.	12.8	282

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55	In situ observation of fracture behavior of canine cortical bone under bending. <i>Materials Science and Engineering C</i> , 2016, 62, 361-367.	7.3	21
56	Modeling and simulation of an ultrasensitive electron tunneling position/force nanosensor. <i>RSC Advances</i> , 2016, 6, 8297-8302.	3.6	0
57	Unveiling residual stresses in air plasma spray coatings by digital image correlation. <i>Extreme Mechanics Letters</i> , 2016, 7, 126-135.	4.1	29
58	Nanomechanical Measurements in Harsh Environments. <i>Jom</i> , 2015, 67, 2900-2901.	1.9	0
59	Unveiling Ultra-High Temperature Wear and Indentation Damage Mechanisms of Thermal Barrier Coatings. <i>Jom</i> , 2015, 67, 2921-2933.	1.9	4
60	A biopolymer-like metal enabled hybrid material with exceptional mechanical prowess. <i>Scientific Reports</i> , 2015, 5, 8357.	3.3	23
61	Microstructural design of hybrid CoO@NiO and graphene nano-architectures for flexible high performance supercapacitors. <i>Journal of Materials Chemistry A</i> , 2015, 3, 14833-14844.	10.3	177
62	Sliding Probe Methods for <i>In Situ</i> ; Nanorobotic Characterization of Individual Nanostructures. <i>IEEE Transactions on Robotics</i> , 2015, 31, 12-18.	10.3	6
63	Cotton textile enabled, all-solid-state flexible supercapacitors. <i>RSC Advances</i> , 2015, 5, 15438-15447.	3.6	103
64	Structural and Mechanical Characterization of Thermally Treated Conch Shells. <i>Jom</i> , 2015, 67, 720-725.	1.9	30
65	Flexible all-solid-state hierarchical NiCo <sub>2</sub> O <sub>4</sub> /porous graphene paper asymmetric supercapacitors with an exceptional combination of electrochemical properties. <i>Nano Energy</i> , 2015, 13, 306-317.	16.0	303
66	Internal Electron Tunneling Enabled Ultrasensitive Position/Force Peapod Sensors. <i>Nano Letters</i> , 2015, 15, 7281-7287.	9.1	11
67	Cotton-Textile-Enabled, Flexible Lithium-Ion Batteries with Enhanced Capacity and Extended Lifespan. <i>Nano Letters</i> , 2015, 15, 8194-8203.	9.1	200
68	Atomic-scale imaging correlation on the deformation and sensing mechanisms of SnO <sub>2</sub> nanowires. <i>Applied Physics Letters</i> , 2014, 105, .	3.3	15
69	Approaching Carbon Nanotube Reinforcing Limit in B <sub>4</sub> C Matrix Composites Produced by Chemical Vapor Infiltration. <i>Advanced Engineering Materials</i> , 2014, 16, 161-166.	3.5	16
70	Hidden energy dissipation mechanism in nacre. <i>Journal of Materials Research</i> , 2014, 29, 1573-1578.	2.6	47
71	Deformation and fracture behaviors of microporous polymer separators for lithium ion batteries. <i>RSC Advances</i> , 2014, 4, 14904.	3.6	57
72	Plastic Deformation Enabled Energy Dissipation in a Bionanowire Structured Armor. <i>Nano Letters</i> , 2014, 14, 2578-2583.	9.1	47

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73	Multiscale hierarchical assembly strategy and mechanical prowess in conch shells ( <i>Busycon carica</i> ). <i>Journal of Structural Biology</i> , 2013, 184, 409-416.	2.8	39
74	Enhanced nucleate boiling on horizontal hydrophobic-hydrophilic carbon nanotube coatings. <i>Applied Physics Letters</i> , 2013, 102, .	3.3	81
75	Origin of flaw-tolerance in nacre. <i>Scientific Reports</i> , 2013, 3, 1693.	3.3	81
76	Exploring the Energy Storage Mechanism of High Performance $\text{MnO}_2$ Electrochemical Capacitor Electrodes: An In Situ Atomic Force Microscopy Study in Aqueous Electrolyte. <i>Advanced Functional Materials</i> , 2013, 23, 4745-4751.	14.9	39
77	Atomistic investigation of scratching-induced deformation twinning in nanocrystalline Cu. <i>Journal of Applied Physics</i> , 2012, 112, .	2.5	21
78	Twin boundary spacing-dependent friction in nanotwinned copper. <i>Physical Review B</i> , 2012, 85, .	3.2	34
79	A new approach for the preparation of variable valence rare earth alloys from nano rare earth oxides at a low temperature in molten salt. <i>RSC Advances</i> , 2012, 2, 1585-1591.	3.6	9
80	Uncovering Aragonite Nanoparticle Self-assembly in Nacre—A Natural Armor. <i>Crystal Growth and Design</i> , 2012, 12, 4306-4310.	3.0	53
81	Mechanically robust Si nanorod arrays on Cu/Ti bilayer film coated Si substrate for high performance lithium-ion battery anodes. <i>Journal of Applied Physics</i> , 2012, 112, .	2.5	4
82	Order-Disorder Transition of Aragonite Nanoparticles in Nacre. <i>Physical Review Letters</i> , 2012, 109, 025501.	7.8	40
83	Structural and elastic properties of InN nanowires. <i>Physica Status Solidi (A) Applications and Materials Science</i> , 2012, 209, 718-723.	1.8	9
84	Towards Textile Energy Storage from Cotton T-shirts. <i>Advanced Materials</i> , 2012, 24, 3246-3252.	21.0	473
85	Carbon Nanotubes: Hydrogen Passivation Induced Dispersion of Multi-Walled Carbon Nanotubes (Adv.) <i>Tj ETQq1</i> 1.0.784314 rgBT /O 21.0 1	21.0	473
86	Electrospinning fabrication, structural and mechanical characterization of rod-like virus-based composite nanofibers. <i>Journal of Materials Chemistry</i> , 2011, 21, 8550.	6.7	47
87	Synthesis, structural, optical and mechanical characterization of $\text{SrB}_2\text{O}_4$ nanorods. <i>CrystEngComm</i> , 2011, 13, 5858.	2.6	34
88	In situ synthesis of ultrafine $\text{MnO}_2$ /polypyrrole nanorod composites for high-performance supercapacitors. <i>Journal of Materials Chemistry</i> , 2011, 21, 10965.	6.7	175
89	TiC Nanorods Derived from Cotton Fibers: Chloride-Assisted VLS Growth, Structure, and Mechanical Properties. <i>Crystal Growth and Design</i> , 2011, 11, 4422-4426.	3.0	74
90	Elastic modulus of biopolymer matrix in nacre measured using coupled atomic force microscopy bending and inverse finite element techniques. <i>Materials Science and Engineering C</i> , 2011, 31, 1852-1856.	7.3	71

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91	A generic bamboo-based carbothermal method for preparing carbide (SiC, B <sub>4</sub> C, TiC, TaC, NbC, Ti <sub>x</sub> Nb <sub>1-x</sub> C.) <i>Tj ETQg</i> , 2011, 1, 0.784314	8.7	76
92	Influence of Scanning Rotation on Nanoscale Artificial Strain in Open-Loop Atomic Force Microscopy. <i>Experimental Mechanics</i> , 2011, 51, 619-624.	2.0	7
93	Deformation Strengthening of Biopolymer in Nacre. <i>Advanced Functional Materials</i> , 2011, 21, 3883-3888.	14.9	121
94	TaC Nanowire/Activated Carbon Microfiber Hybrid Structures from Bamboo Fibers. <i>Advanced Energy Materials</i> , 2011, 1, 534-539.	19.5	87
95	Uncovering high-strain rate protection mechanism in nacre. <i>Scientific Reports</i> , 2011, 1, 148.	3.3	87
96	Multiple robot simultaneous localization and mapping. , 2011, , .		2
97	Multiple-objective motion planning for unmanned aerial vehicles. , 2011, , .		4
98	B <sub>4</sub> C Nanowires/Carbon Microfiber Hybrid Structures and Composites from Cotton T-shirts. <i>Advanced Materials</i> , 2010, 22, 2055-2059.	21.0	104
99	Determination of interfacial properties of thermal barrier coatings by shear test and inverse finite element method. <i>Acta Materialia</i> , 2010, 58, 5972-5979.	7.9	50
100	In situ electrical property characterization of individual nanostructures using a sliding probe inside a transmission electron microscope. , 2010, , .		2
101	Adhesion at diamond/metal interfaces: A density functional theory study. <i>Journal of Applied Physics</i> , 2010, 107, .	2.5	46
102	Nano/micro-mechanical and tribological characterization of Ar, C, N, and Ne ion-implanted Si. <i>Journal of Materials Research</i> , 2010, 25, 880-889.	2.6	10
103	Unveiling the Formation Mechanism of Pseudo-Single-Crystal Aragonite Platelets in Nacre. <i>Physical Review Letters</i> , 2009, 102, 075502.	7.8	88
104	Enhance diamond coating adhesion by oriented interlayer microcracking. <i>Journal of Applied Physics</i> , 2009, 106, 123514.	2.5	2
105	Nanoclay-reinforced Polyacrylamide Composite: Synthesis, Structural and Mechanical Characterization. <i>Materials Research Society Symposia Proceedings</i> , 2009, 1239, 1.	0.1	0
106	Determination of mechanical properties of Al-Mg alloys dissimilar friction stir welded interface by indentation methods. <i>Journal of Materials Science</i> , 2009, 44, 4140-4147.	3.7	75
107	In Situ Observation of Small-Scale Deformation in a Lead-Free Solder Alloy. <i>Journal of Electronic Materials</i> , 2009, 38, 400-409.	2.2	20
108	Nanoscale structural and mechanical characterization of heat treated nacre. <i>Materials Science and Engineering C</i> , 2009, 29, 1803-1807.	7.3	41

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109	Tobacco mosaic virus templated synthesis of one dimensional inorganic-polymer hybrid fibres. Journal of Materials Chemistry, 2009, 19, 2841.	6.7	48
110	Low temperature, organic-free synthesis of $\text{Ba}_3\text{B}_6\text{O}_9(\text{OH})_6$ nanorods and $\text{Ba}_2\text{O}_4$ nanospindles. Journal of Materials Chemistry, 2009, 19, 983-987.	6.7	50
111	Nanoindentation for measuring individual phase mechanical properties of lead free solder alloy. Journal of Materials Science: Materials in Electronics, 2008, 19, 514-521.	2.2	47
112	Nanomechanical characterization of polyaniline coated tobacco mosaic virus nanotubes. Journal of Biomedical Materials Research - Part A, 2008, 87A, 8-14.	4.0	28
113	$\text{B}/\text{SiO}_x$ Nanonecklace Reinforced Nanocomposites by Unique Mechanical Interlocking Mechanism. Advanced Materials, 2008, 20, 4091-4096.	21.0	47
114	Mapping nanoscale wear field by combined atomic force microscopy and digital image correlation techniques. Acta Materialia, 2008, 56, 6304-6309.	7.9	28
115	Predicting Young's modulus of nanowires from first-principles calculations on their surface and bulk materials. Journal of Applied Physics, 2008, 104, .	2.5	60
116	Predicting the hydrogen pressure to achieve ultralow friction at diamond and diamondlike carbon surfaces from first principles. Applied Physics Letters, 2008, 92, .	3.3	29
117	In Situ Nanoscale In-Plane Deformation Studies of Ultrathin Polymeric Films During Tensile Deformation Using Atomic Force Microscopy and Digital Image Correlation Techniques. IEEE Nanotechnology Magazine, 2007, 6, 4-12.	2.0	35
118	Reinforcing Mechanisms of Single-Walled Carbon Nanotube-Reinforced Polymer Composites. Journal of Nanoscience and Nanotechnology, 2007, 7, 2309-2317.	0.9	82
119	Size dependency of the elastic modulus of ZnO nanowires: Surface stress effect. Applied Physics Letters, 2007, 91, .	3.3	63
120	Microindentation test for assessing the mechanical properties of cartilaginous tissues. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2007, 80B, 25-31.	3.4	45
121	Whisker nucleation in indentation residual stress field on tin plated component leads. Journal of Materials Science: Materials in Electronics, 2007, 18, 599-604.	2.2	18
122	Nanoscale structural and mechanical characterization of natural nanocomposites: Seashells. Jom, 2007, 59, 71-74.	1.9	62
123	In Situ Observation of Nanograin Rotation and Deformation in Nacre. Nano Letters, 2006, 6, 2301-2304.	9.1	294
124	Sample size effect on nanoindentation of micro-/nanostructures. Acta Materialia, 2006, 54, 1699-1703.	7.9	46
125	The effect of protein adsorption on the friction behavior of ultra-high molecular weight polyethylene. Tribology Letters, 2006, 22, 181-188.	2.6	41
126	Polycrystalline $\text{Si}_{1-x}\text{Ge}_x$ thin film deposition by rapid thermal chemical vapor deposition. Journal of Materials Science: Materials in Electronics, 2006, 17, 27-33.	2.2	0



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127	Elastic modulus of single-crystal GaN nanowires. <i>Journal of Materials Research</i> , 2006, 21, 2882-2887.	2.6	39
128	Micro/nanoscale mechanical and tribological characterization of SiC for orthopedic applications. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2005, 72B, 353-361.	3.4	81
129	Interfacial modification of amorphous substrates for microcrystalline silicon growth within situ hydrogen plasma pretreatment. <i>Physica Status Solidi A</i> , 2005, 202, 2448-2453.	1.7	5
130	AFM Imaging of Water, Cells and Tissues. <i>Materials Research Society Symposia Proceedings</i> , 2005, 874, 1.	0.1	0
131	Structural and mechanical characterization of nanoclay-reinforced agarose nanocomposites. <i>Nanotechnology</i> , 2005, 16, 2020-2029.	2.6	81
132	Mechanical Properties of ZnS Nanobelts. <i>Nano Letters</i> , 2005, 5, 1982-1986.	9.1	121
133	Micro/nanomechanical characterization of a natural nanocomposite material—the shell of Pectinidae. <i>Nanotechnology</i> , 2004, 15, 211-217.	2.6	80
134	Nanoscale Structural and Mechanical Characterization of a Natural Nanocomposite Material: The Shell of Red Abalone. <i>Nano Letters</i> , 2004, 4, 613-617.	9.1	545
135	Micro/nanomechanical characterization of ceramic films for microdevices. <i>Thin Solid Films</i> , 1999, 340, 210-217.	1.8	131