

Daniel Kiener

List of Publications by Year in descending order

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153
papers

6,791
citations

61984

43
h-index

66911

78
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157
all docs

157
docs citations

157
times ranked

4689
citing authors

#	ARTICLE	IF	CITATIONS
1	A further step towards an understanding of size-dependent crystal plasticity: In situ tension experiments of miniaturized single-crystal copper samples. <i>Acta Materialia</i> , 2008, 56, 580-592.	7.9	441
2	In situ observation of dislocation nucleation and escape in a submicrometre aluminium single crystal. <i>Nature Materials</i> , 2009, 8, 95-100.	27.5	400
3	FIB damage of Cu and possible consequences for miniaturized mechanical tests. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2007, 459, 262-272.	5.6	386
4	In situ nanocompression testing of irradiated copper. <i>Nature Materials</i> , 2011, 10, 608-613.	27.5	268
5	Source Truncation and Exhaustion: Insights from Quantitative in situ TEM Tensile Testing. <i>Nano Letters</i> , 2011, 11, 3816-3820.	9.1	207
6	Micro-compression testing: A critical discussion of experimental constraints. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2009, 505, 79-87.	5.6	192
7	Determination of Mechanical Properties of Copper at the Micron Scale. <i>Advanced Engineering Materials</i> , 2006, 8, 1119-1125.	3.5	191
8	Issues to consider using nano indentation on shallow ion beam irradiated materials. <i>Journal of Nuclear Materials</i> , 2012, 425, 136-139.	2.7	176
9	Synthesis and Biological Evaluation of a Bioresponsive and Endosomolytic siRNA~Polymer Conjugate. <i>Molecular Pharmaceutics</i> , 2009, 6, 752-762.	4.6	166
10	Fracture toughness investigations of tungsten alloys and SPD tungsten alloys. <i>Journal of Nuclear Materials</i> , 2007, 367-370, 800-805.	2.7	158
11	Source-controlled yield and hardening of Cu(100) studied by in situ transmission electron microscopy. <i>Acta Materialia</i> , 2011, 59, 1328-1337.	7.9	158
12	Decomposition pathways in age hardening of Ti-Al-N films. <i>Journal of Applied Physics</i> , 2011, 110, .	2.5	152
13	Reversible cyclic deformation mechanism of gold nanowires by twinning~detwinning transition evidenced from in situ TEM. <i>Nature Communications</i> , 2014, 5, 3033.	12.8	137
14	In situ TEM straining of single crystal Au films on polyimide: Change of deformation mechanisms at the nanoscale. <i>Acta Materialia</i> , 2007, 55, 5558-5571.	7.9	116
15	Bioinspired nacre-like alumina with a bulk-metallic glass-forming alloy as a compliant phase. <i>Nature Communications</i> , 2019, 10, 961.	12.8	106
16	Achieving the ideal strength in annealed molybdenum nanopillars. <i>Acta Materialia</i> , 2010, 58, 5160-5167.	7.9	101
17	An exploratory study to determine applicability of nano-hardness and micro-compression measurements for yield stress estimation. <i>Journal of Nuclear Materials</i> , 2008, 375, 135-143.	2.7	96
18	Cyclic response of copper single crystal micro-beams. <i>Scripta Materialia</i> , 2010, 63, 500-503.	5.2	93

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37	Advanced nanomechanics in the TEM: effects of thermal annealing on FIB prepared Cu samples. Philosophical Magazine, 2012, 92, 3269-3289.	1.6	48
38	Dislocation-induced crystal rotations in micro-compressed single crystal copper columns. Journal of Materials Science, 2008, 43, 2503-2506.	3.7	47
39	Local and non-local behavior and coordinated buckling of CNT turfs. Carbon, 2011, 49, 1430-1438.	10.3	47
40	Internal and external stresses: In situ TEM compression of Cu bicrystals containing a twin boundary. Scripta Materialia, 2015, 100, 94-97.	5.2	45
41	Anneal hardening and elevated temperature strain rate sensitivity of nanostructured metals: Their relation to intergranular dislocation accommodation. Acta Materialia, 2019, 165, 409-419.	7.9	45
42	Dislocation storage in single slip-oriented Cu micro-tensile samples: new insights via X-ray microdiffraction. Philosophical Magazine, 2011, 91, 1256-1264.	1.6	43
43	Universally scaling Hall-Petch-like relationship in metallic glass matrix composites. International Journal of Plasticity, 2018, 105, 225-238.	8.8	43
44	Ductilisation of tungsten (W) through cold-rolling: R-curve behaviour. International Journal of Refractory Metals and Hard Materials, 2016, 58, 22-33.	3.8	40
45	Nanoindentation creep behavior of Cu-Zr metallic glass films. Materials Research Letters, 2018, 6, 22-28.	8.7	40
46	Influence of Yttrium on the Thermal Stability of Ti-Al-N Thin Films. Materials, 2010, 3, 1573-1592.	2.9	38
47	Essential refinements of spherical nanoindentation protocols for the reliable determination of mechanical flow curves. Materials and Design, 2018, 146, 69-80.	7.0	37
48	Rate limiting deformation mechanisms of bcc metals in confined volumes. Acta Materialia, 2019, 166, 687-701.	7.9	37
49	Thermally activated deformation mechanisms and solid solution softening in W-Re alloys investigated via high temperature nanoindentation. Materials and Design, 2020, 189, 108499.	7.0	37
50	Nanoscale pore structure of Carboniferous coals from the Ukrainian Donets Basin: A combined HRTEM and gas sorption study. International Journal of Coal Geology, 2020, 224, 103484.	5.0	37
51	Towards predictive modeling of near-edge structures in electron energy-loss spectra of AlN-based ternary alloys. Physical Review B, 2011, 83, .	3.2	36
52	Fabrication and thermo-mechanical behavior of ultra-fine porous copper. Journal of Materials Science, 2015, 50, 634-643.	3.7	36
53	Perylene-labeled Silica Nanoparticles: Synthesis and Characterization of Three Novel Silica Nanoparticle Species for Live-cell Imaging. Small, 2010, 6, 2427-2435.	10.0	35
54	In Situ TEM Microcompression of Single and Bicrystalline Samples: Insights and Limitations. Jom, 2015, 67, 1704-1712.	1.9	35

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55	Cross-sectional structure-property relationship in a graded nanocrystalline Ti _{1-x} Al _x N thin film. <i>Acta Materialia</i> , 2016, 102, 212-219.	7.9	34
56	Fracture behavior and deformation mechanisms in nanolaminated crystalline/amorphous micro-cantilevers. <i>Acta Materialia</i> , 2019, 180, 73-83.	7.9	34
57	Interface dominated mechanical properties of ultra-fine grained and nanoporous Au at elevated temperatures. <i>Acta Materialia</i> , 2016, 121, 104-116.	7.9	32
58	Dominating deformation mechanisms in ultrafine-grained chromium across length scales and temperatures. <i>Acta Materialia</i> , 2017, 140, 176-187.	7.9	32
59	Interplay between sample size and grain size: Single crystalline vs. ultrafine-grained chromium micropillars. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2016, 674, 626-633.	5.6	31
60	Dynamic nanoindentation testing: is there an influence on a material's hardness?. <i>Materials Research Letters</i> , 2017, 5, 486-493.	8.7	31
61	Incipient plasticity and surface damage in LiTaO ₃ and LiNbO ₃ single crystals. <i>Materials and Design</i> , 2018, 153, 221-231.	7.0	31
62	The effect of size on the strength of FCC metals at elevated temperatures: annealed copper. <i>Philosophical Magazine</i> , 2016, 96, 3379-3395.	1.6	28
63	Disordered interfaces enable high temperature thermal stability and strength in a nanocrystalline aluminum alloy. <i>Acta Materialia</i> , 2021, 215, 116973.	7.9	27
64	Influence of external and internal length scale on the flow stress of copper. <i>International Journal of Materials Research</i> , 2007, 98, 1047-1053.	0.3	26
65	Strength distribution and fracture analyses of LiNbO ₃ and LiTaO ₃ single crystals under biaxial loading. <i>Journal of the European Ceramic Society</i> , 2017, 37, 4397-4406.	5.7	26
66	Tailoring ultra-strong nanocrystalline tungsten nanofoams by reverse phase dissolution. <i>Acta Materialia</i> , 2020, 182, 215-225.	7.9	26
67	Effects of thermal annealing on the microstructure of sputtered Al ₂ O ₃ coatings. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 2011, 29, .	2.1	25
68	Elevated temperature mechanical properties of novel ultra-fine grained Cu-Nb composites. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2015, 625, 296-302.	5.6	25
69	In-Situ Measurements of Free-Standing, Ultra-Thin Film Cracking in Bending. <i>Experimental Mechanics</i> , 2015, 55, 1681-1690.	2.0	25
70	Miniaturized fracture experiments to determine the toughness of individual films in a multilayer system. <i>Extreme Mechanics Letters</i> , 2016, 8, 235-244.	4.1	24
71	Microstructure and mechanical properties of Cu _x Nb _{1-x} alloys prepared by ball milling and high pressure torsion compacting. <i>Journal of Alloys and Compounds</i> , 2015, 630, 117-125.	5.5	23
72	In-situ observation of the initiation of plasticity by nucleation of prismatic dislocation loops. <i>Nature Communications</i> , 2020, 11, 2367.	12.8	23

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73	Time-dependent contact behavior between diamond and a CNT turf. <i>Nanotechnology</i> , 2011, 22, 295702.	2.6	22
74	Extraction of Flow Behavior and Hallâ€Petch Parameters Using a Nanoindentation Multiple Sharp Tip Approach. <i>Advanced Engineering Materials</i> , 2017, 19, 1600669.	3.5	22
75	Sample Preparation by Metallography and Focused Ion Beam for Nanomechanical Testing. <i>Praktische Metallographie/Practical Metallography</i> , 2012, 49, 343-355.	0.3	22
76	Revealing deformation mechanisms with nanoindentation. <i>Jom</i> , 2009, 61, 14-23.	1.9	21
77	Deformation twinning in Niâ€Mnâ€Ga micropillars with 10M martensite. <i>Journal of Applied Physics</i> , 2009, 106, 53906.	2.5	20
78	Thermally Activated Deformation Behavior of ufg-Au: Environmental Issues During Long-Term and High-Temperature Nanoindentation Testing. <i>Jom</i> , 2015, 67, 2934-2944.	1.9	20
79	Advanced characterisation of thermo-mechanical fatigue mechanisms of different copper film systems for wafer metallizations. <i>Thin Solid Films</i> , 2016, 612, 153-164.	1.8	20
80	Intrinsic toughness of the bulk-metallic glass Vitreloy 105 measured using micro-cantilever beams. <i>Acta Materialia</i> , 2020, 183, 242-248.	7.9	20
81	Strength, Hardening, and Failure Observed by In Situ TEM Tensile Testing. <i>Advanced Engineering Materials</i> , 2012, 14, 960-967.	3.5	19
82	Development and application of a heated in-situ SEM micro-testing device. <i>Measurement: Journal of the International Measurement Confederation</i> , 2017, 110, 356-366.	5.0	19
83	Impact of interfaces on the radiation response and underlying defect recovery mechanisms in nanostructured Cu-Fe-Ag. <i>Materials and Design</i> , 2018, 160, 1148-1157.	7.0	19
84	Young's Modulus and Poisson's Ratio Characterization of Tungsten Thin Films Via Laser Ultrasound. <i>Materials Today: Proceedings</i> , 2015, 2, 4289-4294.	1.8	18
85	Correlation between fracture characteristics and valence electron concentration of sputtered Hf-C-N based thin films. <i>Surface and Coatings Technology</i> , 2020, 399, 126212.	4.8	18
86	An analytical solution for the correct determination of crack lengths via cantilever stiffness. <i>Materials and Design</i> , 2020, 194, 108914.	7.0	18
87	Can micro-compression testing provide stressâ€strain data for thin films?. <i>Thin Solid Films</i> , 2009, 518, 1517-1521.	1.8	17
88	Atomistic origins of the differences in anisotropic fracture behaviour of LiTaO3 and LiNbO3 single crystals. <i>Acta Materialia</i> , 2018, 150, 373-380.	7.9	17
89	Crack arrest in thin metallic film stacks due to material- and residual stress inhomogeneities. <i>Thin Solid Films</i> , 2018, 668, 14-22.	1.8	16
90	The influence of microstructure on the cyclic deformation and damage of copper and an oxide dispersion strengthened steel studied via in-situ micro-beam bending. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2017, 687, 313-322.	5.6	15

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91	Fracture properties of ultrafine grain chromium correlated to single dislocation processes at room temperature. <i>Journal of Materials Research</i> , 2019, 34, 2370-2383.	2.6	14
92	Addressing Fracture Properties of Individual Constituents Within a Cu-WTi-SiOx-Si Multilayer. <i>Jom</i> , 2020, 72, 4551-4558.	1.9	14
93	Nanoindentation study of macerals in coals from the Ukrainian Donets Basin. <i>Advances in Geosciences</i> , 0, 45, 73-83.	12.0	14
94	An SEM compatible plasma cell for <i>in situ</i> studies of hydrogen-material interaction. <i>Review of Scientific Instruments</i> , 2020, 91, 043705.	1.3	13
95	In situ fracture observations of distinct interface types within a fully lamellar intermetallic TiAl alloy. <i>Journal of Materials Research</i> , 2021, 36, 2465-2478.	2.6	13
96	Initiation of fatigue damage in ultrafine grained metal films. <i>Acta Materialia</i> , 2021, 206, 116599.	7.9	13
97	In-situ TEM investigation of toughening in Silicon at small scales. <i>Materials Today</i> , 2021, 48, 29-37.	14.2	13
98	Accelerated thermo-mechanical fatigue of copper metallizations studied by pulsed laser heating. <i>Microelectronic Engineering</i> , 2017, 167, 110-118.	2.4	12
99	Open-cell tungsten nanofoams: Scaling behavior and structural disorder dependence of Young's modulus and flow strength. <i>Materials and Design</i> , 2021, 197, 109187.	7.0	12
100	Novel Methods for the Site Specific Preparation of Micromechanical Structures. <i>Praktische Metallographie/Practical Metallography</i> , 2015, 52, 131-146.	0.3	12
101	Dislocation plasticity of Al film on polyimide investigated by cross-sectional in situ transmission electron microscopy straining. <i>Scripta Materialia</i> , 2011, 65, 456-459.	5.2	11
102	Achieving work hardening by forming boundaries on the nanoscale in a Ti-based metallic glass matrix composite. <i>Journal of Materials Science and Technology</i> , 2020, 50, 192-203.	10.7	11
103	The effect of grain size on bubble formation and evolution in helium-irradiated Cu-Fe-Ag. <i>Materials Characterization</i> , 2021, 171, 110822.	4.4	11
104	Strength ranking for interfaces between a TiN hard coating and microstructural constituents of high speed steel determined by micromechanical testing. <i>Materials and Design</i> , 2021, 204, 109690.	7.0	11
105	High-speed nanoindentation mapping of organic matter-rich rocks: A critical evaluation by correlative imaging and machine learning data analysis. <i>International Journal of Coal Geology</i> , 2021, 247, 103847.	5.0	11
106	Conventional TEM Investigation Of The FIB Damage In Copper. <i>Microscopy and Microanalysis</i> , 2007, 13, 100-101.	0.4	10
107	Selective interface toughness measurements of layered thin films. <i>AIP Advances</i> , 2017, 7, .	1.3	10
108	Constituent constraining effects on the microstructural evolution, ductility, and fracture mode of crystalline/amorphous nanolaminates. <i>Journal of Alloys and Compounds</i> , 2018, 768, 88-96.	5.5	10

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109	Probing defect relaxation in ultra-fine grained Ta using micromechanical spectroscopy. <i>Acta Materialia</i> , 2020, 185, 309-319.	7.9	10
110	Addressing H-Material Interaction in Fast Diffusion Materials—A Feasibility Study on a Complex Phase Steel. <i>Materials</i> , 2020, 13, 4677.	2.9	10
111	Experimental and Numerical Investigation of the Deformation and Fracture Mode of Microcantilever Beams Made of Cr(Re)/Al ₂ O ₃ Metal—Matrix Composite. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2020, 51, 2377-2390.	2.2	10
112	Multi-method characterization approach to facilitate a strategy to design mechanical and electrical properties of sintered copper. <i>Materials and Design</i> , 2021, 197, 109188.	7.0	10
113	Helium-induced swelling and mechanical property degradation in ultrafine-grained W and W-Cu nanocomposites for fusion applications. <i>Scripta Materialia</i> , 2022, 213, 114641.	5.2	10
114	Correlative microstructure and topography informed nanoindentation of copper films. <i>Surface and Coatings Technology</i> , 2016, 308, 404-413.	4.8	9
115	Understanding the effect of surface flaws on the strength distribution of brittle single crystals. <i>Journal of the American Ceramic Society</i> , 2018, 101, 5705-5716.	3.8	9
116	Ultrafine-grained Tungsten by High-Pressure Torsion — Bulk precursor versus powder processing route. <i>IOP Conference Series: Materials Science and Engineering</i> , 2019, 580, 012051.	0.6	9
117	How grain boundary characteristics influence plasticity close to and above the critical temperature of ultra-fine grained bcc Ta _{2.5} W. <i>Acta Materialia</i> , 2021, 216, 117110.	7.9	9
118	Microstructural evolution of a focused ion beam fabricated Mg nanopillar at high temperatures: Defect annihilation and sublimation. <i>Scripta Materialia</i> , 2014, 86, 44-47.	5.2	7
119	Film thickness dependent microstructural changes of thick copper metallizations upon thermal fatigue. <i>Journal of Materials Research</i> , 2017, 32, 2022-2034.	2.6	7
120	Extracting flow curves from nano-sized metal layers in thin film systems. <i>Scripta Materialia</i> , 2017, 130, 143-147.	5.2	7
121	Extracting information from noisy data: strain mapping during dynamic in situ SEM experiments. <i>Journal of Materials Research</i> , 2021, 36, 2291-2304.	2.6	7
122	The influence of chemistry on the interface toughness in a WTi-Cu system. <i>Acta Materialia</i> , 2022, 230, 117813.	7.9	7
123	Tuning mechanical properties of ultrafine-grained tungsten by manipulating grain boundary chemistry. <i>Acta Materialia</i> , 2022, 232, 117939.	7.9	7
124	High Temperature Flow Behavior of Ultra-Strong Nanoporous Au assessed by Spherical Nanoindentation. <i>Nanomaterials</i> , 2018, 8, 366.	4.1	6
125	Prospects of Using Small Scale Testing to Examine Different Deformation Mechanisms in Nanoscale Single Crystals—A Case Study in Mg. <i>Crystals</i> , 2021, 11, 61.	2.2	6
126	How the interface type manipulates the thermomechanical response of nanostructured metals: A case study on nickel. <i>Materialia</i> , 2021, 15, 101020.	2.7	6

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127	Testing Thin Films by Microcompression: Benefits and Limits. BHM-Zeitschrift Fuer Rohstoffe Geotechnik Metallurgie Werkstoffe Maschinen-Und Anlagentechnik, 2008, 153, 257-262.	1.0	5
128	Yield and plastic flow of soft metals in small volumes loaded in tension and flexure. Philosophical Magazine, 2012, 92, 3199-3215.	1.6	5
129	Site Specific Microstructural Evolution of Thermo-mechanically Fatigued Copper Films. BHM-Zeitschrift Fuer Rohstoffe Geotechnik Metallurgie Werkstoffe Maschinen-Und Anlagentechnik, 2015, 160, 235-239.	1.0	5
130	Synthesis and Mechanical Characterisation of an Ultra-Fine Grained Ti-Mg Composite. Materials, 2016, 9, 688.	2.9	5
131	Substrate-Influenced Thermo-Mechanical Fatigue of Copper Metallizations: Limits of Stoney's Equation. Materials, 2017, 10, 1287.	2.9	5
132	High-Temperature Nanoindentation of an Advanced Nano-Crystalline W/Cu Composite. Nanomaterials, 2021, 11, 2951.	4.1	5
133	High-Throughput Micromechanical Testing Enabled by Optimized Direct Laser Writing. Advanced Engineering Materials, 2023, 25, .	3.5	5
134	In situ micromechanical analysis of a nano-crystalline W-Cu composite. Materials and Design, 2022, 220, 110848.	7.0	5
135	Open-cell tungsten nanofoams: Chloride ion induced structure modification and mechanical behavior. Results in Physics, 2020, 17, 103062.	4.1	4
136	Zr addition-dependent twin morphology evolution and strengthening response in nanostructured Al thin films. Materialia, 2021, 16, 101076.	2.7	4
137	Prospects of enhancing the understanding of material-hydrogen interaction by novel in-situ and in-operando methods. International Journal of Hydrogen Energy, 2022, 47, 10097-10111.	7.1	4
138	Controlling the high temperature deformation behavior and thermal stability of ultra-fine-grained W by re alloying. Journal of Materials Research, 2021, 36, 2408-2419.	2.6	3
139	A Perspective to Control Laser-Induced Periodic Surface Structure Formation at Glancing-Incident Femtosecond Laser-Processed Surfaces. Jom, 2021, 73, 4248-4257.	1.9	3
140	Extreme Ductility at the Nanoscale in Fe-based Alloys. Microscopy and Microanalysis, 2014, 20, 1876-1877.	0.4	2
141	Evaluation of the residual stress distribution in thin films by means of the ion beam layer removal method. , 2014, , .		2
142	Fracture mechanics of thin film systems on the sub-micron scale. , 2015, , .		2
143	Micro-Mechanical In Situ Measurements in Thin Film Systems Regarding the Determination of Residual Stress, Fracture Properties and Interface Toughness. Microscopy and Microanalysis, 2017, 23, 750-751.	0.4	2
144	Effect of crystal orientation on the hardness and strength of piezoelectric LiNbO3 substrates for microelectronic applications. Materials and Design, 2022, 213, 110306.	7.0	2

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145	Size-Induced Transition from Perfect to Partial Dislocation Plasticity in Single Crystal Au Films on Polyimide. <i>Microscopy and Microanalysis</i> , 2007, 13, 278-279.	0.4	1
146	<i>In situ</i> fracture observations of distinct interface types within a fully lamellar intermetallic TiAl alloy. <i>Journal of Materials Research</i> , 0, , 1-14.	2.6	1
147	Mitigating Focused Ion Beam Damage in Molybdenum Nanopillars by In Situ Annealing. <i>Microscopy and Microanalysis</i> , 2010, 16, 1748-1749.	0.4	0
148	Quantitative Approaches for in situ SEM and TEM Deformation Studies. <i>Microscopy and Microanalysis</i> , 2012, 18, 736-737.	0.4	0
149	Connecting in situ TEM mechanical testing with bulk properties of irradiated materials. <i>Microscopy and Microanalysis</i> , 2012, 18, 1344-1345.	0.4	0
150	Annealing Effects on the Structural Properties of FIB Prepared Cu Nanopillars - an in situ TEM study. <i>Microscopy and Microanalysis</i> , 2013, 19, 432-433.	0.4	0
151	Fracture and material behavior of thin film composites. , 2016, , .		0
152	Laser Ultrasonic Thin Film Characterization of Si-Cu-Al-Cu Multi-Layered Stacks. <i>Materials Today: Proceedings</i> , 2017, 4, 7122-7127.	1.8	0
153	Linking Macroscopic Fracture Properties to Single Dislocation Processes. <i>Microscopy and Microanalysis</i> , 2018, 24, 2184-2185.	0.4	0