

# Natalia Sobczak

## List of Publications by Year in descending order

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128  
papers

2,267  
citations

304602

22  
h-index

276775

41  
g-index

134  
all docs

134  
docs citations

134  
times ranked

1927  
citing authors

#	ARTICLE	IF	CITATIONS
1	Measurement of contact angle and work of adhesion at high temperature. Journal of Materials Science, 2005, 40, 2271-2280.	1.7	162
2	Metallic Functionally Graded Materials: A Specific Class of Advanced Composites. Journal of Materials Science and Technology, 2013, 29, 297-316.	5.6	159
3	High-temperature wettability measurements in metal/ceramic systems – Some methodological issues. Current Opinion in Solid State and Materials Science, 2005, 9, 241-253.	5.6	120
4	Lightweight, free-standing 3D interconnected carbon nanotube foam as a flexible sulfur host for high performance lithium-sulfur battery cathodes. Energy Storage Materials, 2018, 10, 206-215.	9.5	91
5	Wetting and bonding strength in Al/Al <sub>2</sub> O <sub>3</sub> system. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2002, 324, 162-167.	2.6	89
6	Effect of pressure on solidification of metallic materials. International Journal of Cast Metals Research, 2012, 25, 1-14.	0.5	85
7	Experimental complex for investigations of high temperature capillarity phenomena. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2008, 495, 43-49.	2.6	75
8	Thermophysical Properties of Liquid AlTi-Based Alloys. International Journal of Thermophysics, 2010, 31, 949-965.	1.0	48
9	Wetting and interfacial phenomena in Ni–HfB <sub>2</sub> systems. Acta Materialia, 2009, 57, 356-364.	3.8	47
10	High-temperature wetting and interfacial interaction between liquid Al and TiB <sub>2</sub> ceramic. Journal of Materials Science, 2015, 50, 2682-2690.	1.7	45
11	Wetting behavior and interfacial microstructure of palladium- and silver-based braze alloys with C and SiC composites. Journal of Materials Science, 2010, 45, 4276-4290.	1.7	44
12	Surface tension of $\beta$ -TiAl-based alloys. Journal of Materials Science, 2010, 45, 1993-2001.	1.7	40
13	Factors affecting wettability and bond strength of solder joint couples. Pure and Applied Chemistry, 2007, 79, 1755-1769.	0.9	38
14	Inhomogeneities in silicon carbide distribution in stirred liquids – a water model study for synthesis of composites. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1998, 252, 98-108.	2.6	36
15	Phase Investigations Under Steam Oxidation Process at 800 °C for 1000 h of Advanced Steels and Ni-Based Alloys. Oxidation of Metals, 2017, 87, 139-158.	1.0	34
16	Gasars: a class of metallic materials with ordered porosity. Materials Science and Technology, 2006, 22, 1135-1147.	0.8	31
17	The effect of temperature, matrix alloying and substrate coatings on wettability and shear strength of Al/Al <sub>2</sub> O <sub>3</sub> couples. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2004, 35, 911-923.	1.1	29
18	A comprehensive model of ordered porosity formation. Acta Materialia, 2007, 55, 6459-6471.	3.8	29

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19	AMADEUS: Next generation materials and solid state devices for ultra high temperature energy storage and conversion. AIP Conference Proceedings, 2018, , .	0.3	29
20	Wettability of AlSi7Mg alloy on alumina, spinel, mullite and rutile and its influence on the aluminum melt filtration efficiency. Materials and Design, 2018, 150, 75-85.	3.3	27
21	Phase separation in monotectic alloys as a route for liquid state fabrication of composite materials. Journal of Materials Science, 2012, 47, 8360-8366.	1.7	26
22	Preparation and characterization of CVD-TiN-coated carbon fibers for applications in metal matrix composites. Thin Solid Films, 2015, 589, 479-486.	0.8	25
23	Wetting Behavior and Reactivity of Molten Silicon with h-BN Substrate at Ultrahigh Temperatures up to 1750Å°C. Journal of Materials Engineering and Performance, 2018, 27, 5040-5053.	1.2	25
24	Thermophysical Properties of Ag and Ag-Cu Liquid Alloys at 1098K to 1573K. International Journal of Thermophysics, 2010, 31, 1165-1174.	1.0	24
25	Wettability and interfacial reactions in Al/TiO2. Surface and Interface Analysis, 2004, 36, 1067-1070.	0.8	23
26	X-ray photoelectron spectroscopy study of the chemical interaction between BN and Ti/TiN. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1997, 15, 505-512.	0.9	22
27	Microscopy and electron spectroscopic study of the interfacial chemistry in Al-Ti alloy/graphite systems. Journal of Materials Science, 1998, 33, 4147-4158.	1.7	21
28	Numerical simulation of macrostructure formation in centrifugal casting of particle reinforced metal matrix composites. Part 1: model description. Modelling and Simulation in Materials Science and Engineering, 2003, 11, 635-649.	0.8	21
29	Thermodynamic, surface and structural properties of liquid Co-Si alloys. Journal of Molecular Liquids, 2016, 221, 346-353.	2.3	21
30	Sedimentation phenomenon and viscosity of water-SiC suspension under gravity conditions—a water model study for composites synthesis. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2002, 197, 203-211.	2.3	19
31	Further Development of Testing Procedures for High Temperature Surface Tension Measurements. Journal of Materials Engineering and Performance, 2013, 22, 3381-3388.	1.2	19
32	Effects of PCB Substrate Surface Finish and Flux on Solderability of Lead-Free SAC305 Alloy. Journal of Materials Engineering and Performance, 2013, 22, 2247-2252.	1.2	19
33	Microstructure and chemistry of the SAC/ENIG interconnections. Materials Chemistry and Physics, 2013, 139, 276-280.	2.0	19
34	Graphene Translucency and Interfacial Interactions in the Gold/Graphene/SiC System. Journal of Physical Chemistry Letters, 2018, 9, 3850-3855.	2.1	19
35	Design of refractory SiC/ZrSi2 composites: Wettability and spreading behavior of liquid Si-10Zr alloy in contact with SiC at high temperatures. Journal of the European Ceramic Society, 2020, 40, 953-960.	2.8	19
36	Mathematical modelling and numerical simulation of ordered porosity metal materials formation. Journal of Computer-Aided Materials Design, 2003, 10, 35-54.	0.7	17

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37	Effect of metal purity and testing procedure on surface tension measurements of liquid tin. Journal of Materials Science, 2010, 45, 2009-2014.	1.7	17
38	Thermodynamic and surface properties of liquid Ge-Si alloys. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2014, 44, 95-101.	0.7	17
39	TEM examination of the effect of titanium on the Al/C interface structure. Materials Chemistry and Physics, 2003, 81, 319-322.	2.0	16
40	TEM characterization of the reaction products in aluminium-fly ash couples. Materials Chemistry and Physics, 2003, 81, 296-300.	2.0	16
41	Wettability and Reactivity between Molten Aluminum and Selected Oxides. Solid State Phenomena, 2005, 101-102, 221-226.	0.3	16
42	Overview on Wetting and Joining in Transition Metals Diborides. Advances in Science and Technology, 2010, 64, 98-107.	0.2	16
43	Steam Oxidation Behavior of Advanced Steels and Ni-Based Alloys at 800°C. Journal of Materials Engineering and Performance, 2017, 26, 1044-1056.	1.2	16
44	Interaction Between Porous Graphite Substrate and Liquid or Semi-Liquid Aluminium Alloys Containing Titanium. Materials Science Forum, 1996, 217-222, 153-158.	0.3	15
45	Numerical simulation of macrostructure formation in centrifugal casting of particle reinforced metal matrix composites. Part 2: simulations and practical applications. Modelling and Simulation in Materials Science and Engineering, 2003, 11, 651-674.	0.8	15
46	Thermophysical Properties of Cu-Matrix Composites Manufactured Using Cu Powder Coated with Graphene. Journal of Materials Engineering and Performance, 2016, 25, 3146-3151.	1.2	15
47	Wetting, reactivity, and phase formation at interfaces between Ni-Al melts and TiB <sub>2</sub> ultrahigh-temperature ceramic. Journal of the American Ceramic Society, 2018, 101, 911-918.	1.9	15
48	Interactions between molten aluminum and Y <sub>2</sub> O <sub>3</sub> studied with TEM techniques. Journal of Microscopy, 2010, 237, 253-257.	0.8	14
49	Interaction between liquid aluminum and yttria substrate: microstructure characterization and thermodynamic considerations. Journal of Materials Science, 2010, 45, 2042-2050.	1.7	12
50	Interfacial interactions between liquid Ti-Al alloys and TiB <sub>2</sub> ceramic. Journal of Materials Science, 2016, 51, 1779-1787.	1.7	12
51	Measurements of temperature and heat of phase transformation of pure silicon by using differential scanning calorimetry. Journal of Thermal Analysis and Calorimetry, 2019, 138, 4215-4221.	2.0	12
52	Silicon as a Phase Change Material: Performance of h-BN Ceramic During Multi-Cycle Melting/Solidification of Silicon. Jom, 2019, 71, 1492-1498.	0.9	12
53	Thermal Fatigue Resistance of Discontinuously Reinforced Cast Aluminum-Matrix Composites. Journal of Materials Engineering and Performance, 2002, 11, 595-602.	1.2	11
54	Interaction between liquid aluminum and NiO single crystals. Journal of Materials Science, 2005, 40, 2313-2318.	1.7	11

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55	Modelling of structural formation in ordered porosity metal materials. Modelling and Simulation in Materials Science and Engineering, 2006, 14, 663-675.	0.8	11
56	Wetting in high-temperature materials processing: The case of Ni/MgO and NiW10/MgO. Scripta Materialia, 2010, 62, 949-954.	2.6	11
57	Structural Characterization of Reaction Product Region in Al/MgO and Al/MgAl <sub>2</sub> O <sub>4</sub> ; Systems. Solid State Phenomena, 0, 172-174, 1273-1278.	0.3	11
58	Surface tension and density of Si-Ge melts. Journal of Chemical Physics, 2014, 140, 214704.	1.2	11
59	Effects of PCB Substrate Surface Finish, Flux, and Phosphorus Content on Ionic Contamination. Journal of Materials Engineering and Performance, 2015, 24, 754-758.	1.2	11
60	Effects of Carbon Allotropic Forms on Microstructure and Thermal Properties of Cu-C Composites Produced by SPS. Journal of Materials Engineering and Performance, 2016, 25, 3077-3083.	1.2	11
61	Effect of deposition temperature on the morphology, structure, surface chemistry and mechanical properties of magnetron sputtered TiO <sub>2</sub> -Al <sub>2</sub> O <sub>3</sub> thin films on steel substrate. Surface and Coatings Technology, 2001, 141, 252-261.	2.2	10
62	Experimental and thermodynamic assessment of the Gd-Ti system. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2013, 42, 19-26.	0.7	10
63	Wettability and Reactivity of ZrB <sub>2</sub> Substrates with Liquid Al. Journal of Materials Engineering and Performance, 2016, 25, 3310-3316.	1.2	10
64	Investigation of Ni-B Alloys for Joining of TiB <sub>2</sub> Ultra-High-Temperature Ceramic. Journal of Materials Engineering and Performance, 2016, 25, 3204-3210.	1.2	10
65	Interaction Between Liquid Silver and Graphene-Coated SiC Substrate. Journal of Materials Engineering and Performance, 2018, 27, 4140-4149.	1.2	10
66	Wetting and Spreading Behavior of Liquid Si-Ti Eutectic Alloy in Contact with Glassy Carbon and SiC at T = 1450 Å°C. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2019, 50, 4814-4826.	1.1	10
67	The Effect of Boron Content on Wetting Kinetics in Si-B Alloy/h-BN System. Journal of Materials Engineering and Performance, 2019, 28, 3819-3825.	1.2	10
68	Discussion of ?A theoretical study of Gasarite eutectic growth?. Scripta Materialia, 2005, 52, 799-801.	2.6	9
69	Influence of surface modification of alumina on bond strength in Al <sub>2</sub> O <sub>3</sub> /Al/Al <sub>2</sub> O <sub>3</sub> joints. Journal of Materials Science, 2005, 40, 2513-2517.	1.7	9
70	First stage of reaction of molten Al with MgO substrate. Materials Characterization, 2015, 103, 133-139.	1.9	9
71	The Effect of Surface Condition on Wetting of HASTELLOÏ® X by Brazing Filler Metal of Ni-Pd-Cr-B-Si System. Journal of Materials Engineering and Performance, 2019, 28, 3950-3959.	1.2	9
72	Bonding effect of liquid magnesium with open-celled carbon foam in interpenetrating phase composite. Journal of Magnesium and Alloys, 2021, 9, 156-165.	5.5	9

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73	Application of push-off shear test for evaluation of wetting-interface structure-bonding relationship of solder joints. <i>Journal of Materials Science</i> , 2005, 40, 2547-2551.	1.7	8
74	Changes in properties of aluminium matrix composite reinforced with SiC particles after multiple remelting. <i>Materials Research Innovations</i> , 2011, 15, s249-s252.	1.0	8
75	Structural Aspects of the Behavior of Lead-Free Solder in the Corrosive Solution. <i>Journal of Materials Engineering and Performance</i> , 2012, 21, 648-654.	1.2	8
76	Wear Resistance of Aluminum Matrix Composites Reinforced with Al <sub>2</sub> O <sub>3</sub> Particles After Multiple Remelting. <i>Journal of Materials Engineering and Performance</i> , 2016, 25, 3084-3090.	1.2	8
77	Wettability and work of adhesion of liquid sulfur on carbon materials for electrical energy storage applications. <i>Carbon</i> , 2016, 98, 702-707.	5.4	8
78	Ultra-High Temperature Interaction Between h-BN-Based Composite and Molten Silicon. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2019, 50, 997-1008.	1.1	8
79	Improved methodological concepts for processing liquid Mg at high temperature. <i>Journal of Magnesium and Alloys</i> , 2021, 9, 183-191.	5.5	8
80	A scanning photoemission microscope (SPEM) to study the interface chemistry of AlTi/C system. <i>Journal of Materials Science Letters</i> , 2000, 19, 123-126.	0.5	7
81	Effect of pH of Sulfate Solution on Electrochemical Behavior of Pb-Free Solder Candidates of SnZn and SnZnCu Systems. <i>Journal of Materials Engineering and Performance</i> , 2012, 21, 614-619.	1.2	7
82	Steam oxidation resistance and performance of newly developed coatings for Haynes® 282® Ni-based alloy. <i>Corrosion Science</i> , 2018, 138, 326-339.	3.0	7
83	Interaction Between Graphene-Coated SiC Single Crystal and Liquid Copper. <i>Journal of Materials Engineering and Performance</i> , 2018, 27, 2317-2329.	1.2	7
84	Improvements in experimental investigation of molten Mg-based materials. <i>Materials and Design</i> , 2018, 160, 915-917.	3.3	7
85	Studying the Wettability and Reactivity of Liquid Si-Ti Eutectic Alloy on Glassy Carbon. <i>Journal of Materials Engineering and Performance</i> , 2019, 28, 3460-3467.	1.2	7
86	Mathematical model for simultaneous growth of gas and solid phases in gas-eutectic reaction. <i>Journal of Materials Science</i> , 2005, 40, 2525-2529.	1.7	6
87	Phase separation in ternary Co-Gd-Ti liquids. <i>Journal of Physics Condensed Matter</i> , 2013, 25, 245104.	0.7	6
88	Gas evolution from heated bentonite bonded moulding sand. <i>International Journal of Cast Metals Research</i> , 2013, 26, 58-63.	0.5	6
89	Experimental study on the feasibility of using liquid-assisted processing in fabrication of Mo-Si-B alloys. <i>Materials Letters</i> , 2019, 253, 13-17.	1.3	6
90	Wetting and interfacial reactivity of Ni-Al alloys with Al <sub>2</sub> O <sub>3</sub> and ZrO <sub>2</sub> ceramics. <i>Journal of Materials Science</i> , 2021, 56, 7849-7861.	1.7	6

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91	Infiltration Processing of Ceramic-Metal Composites: The Role of Wettability, Reaction, and Capillary Flow. <i>Journal of the Korean Ceramic Society</i> , 2005, 42, 703-717.	1.1	6
92	Ultra-high temperature energy storage and conversion: A review of the AMADEUS project results. <i>AIP Conference Proceedings</i> , 2020, , .	0.3	6
93	Reactivity of molten aluminium with polycrystalline ZnO substrate. <i>Journal of Materials Science</i> , 2010, 45, 4291-4298.	1.7	5
94	Sessile drop study of Gd-Ti monotectic alloys on ceramic substrates: phase transformations, wetting, and reactivity. <i>Journal of Materials Science</i> , 2012, 47, 8381-8386.	1.7	5
95	Relationship Between Mechanical Properties of Lead-Free Solders and Their Heat Treatment Parameters. <i>Journal of Materials Engineering and Performance</i> , 2012, 21, 620-628.	1.2	5
96	Tem Investigation of Phases Formed During Aluminium Wetting of MgO at [100], [110] and [111] Orientations. <i>Archives of Metallurgy and Materials</i> , 2013, 58, 497-500.	0.6	5
97	Wettability and interfacial phenomena in the liquid-phase bonding of refractory diboride ceramics: Recent developments. <i>International Journal of Applied Ceramic Technology</i> , 2022, 19, 1029-1049.	1.1	5
98	The Influence of Fabrication Process on the Initial Stages of Steam Oxidation Performed on Haynes® 282® Alloy at 760°C. <i>Journal of Materials Engineering and Performance</i> , 2017, 26, 239-249.	1.2	4
99	Silicon-Boron Alloys as New Ultra-High Temperature Phase-Change Materials: Solid/Liquid State Interaction with the h-BN Composite. <i>Silicon</i> , 2020, 12, 1639-1649.	1.8	4
100	Wetting and interfacial phenomena in Ni-Cr-Hf/sapphire systems. <i>Journal of the European Ceramic Society</i> , 2020, 40, 521-528.	2.8	4
101	Microstructure Characteristics of the Reaction Product Region Formed due to the High Temperature Contact of Molten Aluminium and ZnO Single Crystal. <i>Solid State Phenomena</i> , 0, 172-174, 1267-1272.	0.3	3
102	Wettability of Low Weight Borides by Commercial Aluminum Alloys – A Basis for Metal Matrix Composite Fabrication. <i>Advanced Engineering Materials</i> , 2016, 18, 1884-1888.	1.6	3
103	Effect of HNT on the Microstructure, Thermal and Mechanical Properties of Al/FACS-HNT Composites Produced by GPI. <i>Journal of Materials Engineering and Performance</i> , 2016, 25, 3194-3203.	1.2	3
104	Microstructural Aspects of Fatigue Parameters of Lead-Free Sn-Zn Solders with Various Zn Content. <i>Archives of Foundry Engineering</i> , 2017, 17, 131-136.	0.4	3
105	High-Temperature Interaction of Liquid Gd with Y2O3. <i>Journal of Materials Engineering and Performance</i> , 2019, 28, 3912-3921.	1.2	3
106	Studies of the Joining-Relevant Interfacial Properties in the Si-Ti/C and Si-Ti/SiC Systems. <i>Journal of Materials Engineering and Performance</i> , 2020, 29, 4864-4871.	1.2	3
107	The Role of Wetting and Reactivity in Infiltration of Ceramic-Metal Composites. <i>Ceramic Engineering and Science Proceedings</i> , 0, , 248-261.	0.1	2
108	Fabrication of Nanosized Alumina Powders by a Simple Polymer Solution Route. <i>Journal of Nanoscience and Nanotechnology</i> , 2006, 6, 3633-3636.	0.9	2

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109	TEM characterization of the reaction products formed in Al-Cu/SiO <sub>2</sub> couples due to high temperature interaction. <i>Journal of Materials Science</i> , 2012, 47, 8464-8471.	1.7	2
110	Microstructure, chemistry and thermodynamics of Al/NiO couples obtained at 1273K. <i>Journal of Alloys and Compounds</i> , 2014, 615, S178-S182.	2.8	2
111	Wetting Behavior and Reactivity Between AlTi <sub>6</sub> Alloy and Carbon Nanotubes. <i>Journal of Materials Engineering and Performance</i> , 2016, 25, 3317-3329.	1.2	2
112	High-Temperature Interaction Between Molten AlSi <sub>10</sub> Alloy and Glass-Like Carbon Substrate. <i>Journal of Materials Engineering and Performance</i> , 2016, 25, 3348-3357.	1.2	2
113	High-temperature reactivity and wetting characteristics of Al/ZnO system related to the zinc oxide single crystal orientation. <i>Journal of Materials Science</i> , 2016, 51, 1692-1700.	1.7	2
114	Wetting behaviour and reactivity between liquid Gd and ZrO <sub>2</sub> substrate. <i>Journal of Mining and Metallurgy, Section B: Metallurgy</i> , 2017, 53, 285-293.	0.3	2
115	Microstructural Characterization of the Reaction Product Region Formed Due to the High Temperature Interaction of ZnO[0001] Single Crystal with Liquid Aluminum. <i>Archives of Metallurgy and Materials</i> , 2013, 58, 351-355.	0.6	2
116	Bond strength and microstructure investigation on Al <sub>2</sub> O <sub>3</sub> /Al/Al <sub>2</sub> O <sub>3</sub> joints. <i>Surface and Interface Analysis</i> , 2004, 36, 673-676.	0.8	1
117	TEM investigation of reaction zone products formed between molten Al and CoO monocrystalline substrate. <i>Journal of Microscopy</i> , 2010, 237, 299-303.	0.8	1
118	On Design of Metal-Matrix Composites Lighter than Air. <i>Materials Science Forum</i> , 0, 736, 55-71.	0.3	1
119	Nomograms for rapid assessment of particle sedimentation behaviour in liquid phase processing of particle reinforced metal composites. <i>International Journal of Cast Metals Research</i> , 2013, 26, 122-128.	0.5	1
120	Fatigue Life and Microstructure after Multiple Remelting of A359 Matrix Composites Reinforced with SiC Particles. <i>Archives of Metallurgy and Materials</i> , 2016, 61, 2123-2128.	0.6	1
121	Experimental and thermodynamic assessment of the Gd-Ti-Zr phase diagram. <i>Calphad: Computer Coupling of Phase Diagrams and Thermochemistry</i> , 2018, 61, 237-245.	0.7	1
122	Influence of the Wetting Behavior on the Aluminum Melt Filtration. <i>Minerals, Metals and Materials Series</i> , 2019, , 1071-1079.	0.3	1
123	Interface Design in Lightweight SiC/TiSi <sub>2</sub> Composites Fabricated by Reactive Infiltration Process: Interaction Phenomena between Liquid Si-Rich Si-Ti Alloys and Glassy Carbon. <i>Materials</i> , 2021, 14, 3746.	1.3	1
124	Effects of Titanium on Wettability and Interfaces in Aluminum/Ceramic Systems. <i>Ceramic Transactions</i> , 0, , 81-91.	0.1	1
125	Comparative Studies of Microstructure and Fatigue Life of Selected Lead-free Alloys. <i>Archives of Foundry Engineering</i> , 2017, 17, 111-116.	0.4	1
126	Making Artificial Heart Components – Selected Aspects Of Casting Technology. <i>Archives of Metallurgy and Materials</i> , 2015, 60, 2191-2208.	0.6	0



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127	The 73rd World Foundry Congress. Journal of Materials Engineering and Performance, 2019, 28, 3817-3818.	1.2	0
128	Solid/liquid interaction between Si-based phase change materials and refractories. , 2021, , 113-137.		0