

Tohru Sugahara

List of Publications by Year in descending order

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Version: 2024-02-01

129
papers

4,493
citations

109321

35
h-index

110387

64
g-index

132
all docs

132
docs citations

132
times ranked

5309
citing authors

#	ARTICLE	IF	CITATIONS
1	Chalcopyrite CuGaTe ₂ : A High Efficiency Bulk Thermoelectric Material. <i>Advanced Materials</i> , 2012, 24, 3622-3626.	21.0	311
2	A highly sensitive and flexible pressure sensor with electrodes and elastomeric interlayer containing silver nanowires. <i>Nanoscale</i> , 2015, 7, 2926-2932.	5.6	249
3	Facile synthesis of very-long silver nanowires for transparent electrodes. <i>Journal of Materials Chemistry A</i> , 2014, 2, 6326-6330.	10.3	241
4	Strongly adhesive and flexible transparent silver nanowire conductive films fabricated with a high-intensity pulsed light technique. <i>Journal of Materials Chemistry</i> , 2012, 22, 23561.	6.7	209
5	Uniformly connected conductive networks on cellulose nanofiber paper for transparent paper electronics. <i>NPG Asia Materials</i> , 2014, 6, e93-e93.	7.9	204
6	Low haze transparent electrodes and highly conducting air dried films with ultra-long silver nanowires synthesized by one-step polyol method. <i>Nano Research</i> , 2014, 7, 236-245.	10.4	161
7	One-Step Fabrication of Stretchable Copper Nanowire Conductors by a Fast Photonic Sintering Technique and Its Application in Wearable Devices. <i>ACS Applied Materials & Interfaces</i> , 2016, 8, 6190-6199.	8.0	146
8	Facile fabrication of stretchable Ag nanowire/polyurethane electrodes using high intensity pulsed light. <i>Nano Research</i> , 2016, 9, 401-414.	10.4	128
9	Silver Nanowire Electrodes: Conductivity Improvement Without Post-treatment and Application in Capacitive Pressure Sensors. <i>Nano-Micro Letters</i> , 2015, 7, 51-58.	27.0	118
10	High thermal stability of optical transparency in cellulose nanofiber paper. <i>Applied Physics Letters</i> , 2013, 102, .	3.3	112
11	Thermoelectric properties of Ag _{1-x} GaTe ₂ with chalcopyrite structure. <i>Applied Physics Letters</i> , 2011, 99, .	3.3	108
12	High-intensity pulse light sintering of silver nanowire transparent films on polymer substrates: the effect of the thermal properties of substrates on the performance of silver films. <i>Nanoscale</i> , 2013, 5, 11820.	5.6	100
13	Low-temperature and pressureless sinter joining of Cu with micron/submicron Ag particle paste in air. <i>Journal of Alloys and Compounds</i> , 2019, 780, 435-442.	5.5	98
14	The effect of light and humidity on the stability of silver nanowire transparent electrodes. <i>RSC Advances</i> , 2015, 5, 27657-27664.	3.6	94
15	Transparent Electrodes Fabricated via the Self-Assembly of Silver Nanowires Using a Bubble Template. <i>Langmuir</i> , 2012, 28, 9298-9302.	3.5	91
16	Cu Salt Ink Formulation for Printed Electronics using Photonic Sintering. <i>Langmuir</i> , 2013, 29, 11192-11197.	3.5	82
17	Printable and Flexible Copper-Silver Alloy Electrodes with High Conductivity and Ultrahigh Oxidation Resistance. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 24711-24721.	8.0	79
18	Die Bonding Performance Using Bimodal Cu Particle Paste Under Different Sintering Atmospheres. <i>Journal of Electronic Materials</i> , 2017, 46, 4575-4581.	2.2	78

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19	Macroscale and microscale fracture toughness of microporous sintered Ag for applications in power electronic devices. <i>Acta Materialia</i> , 2017, 129, 41-51.	7.9	74
20	Mechanical Deformation of Sintered Porous Ag Die Attach at High Temperature and Its Size Effect for Wide-Bandgap Power Device Design. <i>Journal of Electronic Materials</i> , 2017, 46, 1576-1586.	2.2	72
21	Die-attaching silver paste based on a novel solvent for high-power semiconductor devices. <i>Journal of Materials Science</i> , 2016, 51, 3422-3430.	3.7	70
22	Thin-Film Copper Indium Gallium Selenide Solar Cell Based on Low-Temperature All-Printing Process. <i>ACS Applied Materials & Interfaces</i> , 2014, 6, 16297-16303.	8.0	60
23	Microstructural stability of Ag sinter joining in thermal cycling. <i>Journal of Materials Science: Materials in Electronics</i> , 2013, 24, 1332-1340.	2.2	59
24	Highly Reliable Silver Nanowire Transparent Electrode Employing Selectively Patterned Barrier Shaped by Self-Masked Photolithography. <i>ACS Applied Materials & Interfaces</i> , 2015, 7, 23297-23304.	8.0	57
25	Ultra-fast photonic curing of electrically conductive adhesives fabricated from vinyl ester resin and silver micro-flakes for printed electronics. <i>RSC Advances</i> , 2014, 4, 15914-15922.	3.6	55
26	Electrically conductive bacterial cellulose composite membranes produced by the incorporation of graphite nanoplatelets in pristine bacterial cellulose membranes. <i>EXPRESS Polymer Letters</i> , 2013, 7, 756-766.	2.1	54
27	Fast fabrication of copper nanowire transparent electrodes by a high intensity pulsed light sintering technique in air. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 31110-31116.	2.8	50
28	Ultra thermal stability of LED die-attach achieved by pressureless Ag stress-migration bonding at low temperature. <i>Acta Materialia</i> , 2015, 89, 133-140.	7.9	47
29	Thermoelectric properties of double-perovskite oxide $\text{Sr}_{1-x}\text{M}_x\text{FeMoO}_{6-y}$ ($\text{M} = \text{Ba, La}$). <i>Journal of the Ceramic Society of Japan</i> , 2008, 116, 1278-1282.		
30	Alloying and Embedding of Cu-Core/Ag-Shell Nanowires for Ultrastable Stretchable and Transparent Electrodes. <i>ACS Applied Materials & Interfaces</i> , 2019, 11, 18540-18547.	8.0	45
31	Online Thermal Resistance and Reliability Characteristic Monitoring of Power Modules With Ag Sinter Joining and Pb, Pb-Free Solders During Power Cycling Test by SiC TEG Chip. <i>IEEE Transactions on Power Electronics</i> , 2021, 36, 4977-4990.	7.9	41
32	Self-healing of cracks in Ag joining layer for die-attachment in power devices. <i>Applied Physics Letters</i> , 2016, 109, .	3.3	40
33	Metastable pitting and its correlation with electronic properties of passive films on Sn-xZn solder alloys. <i>Corrosion Science</i> , 2015, 99, 154-163.	6.6	39
34	Using the Friedman method to study the thermal degradation kinetics of photonicallly cured electrically conductive adhesives. <i>Journal of Thermal Analysis and Calorimetry</i> , 2015, 119, 425-433.	3.6	37
35	Mitigation of Sn Whisker Growth by Small Bi Additions. <i>Journal of Electronic Materials</i> , 2014, 43, 1-8.	2.2	35
36	Growth and Extension of One-Step Sol-Gel Derived Molybdenum Trioxide Nanorods via Controlling Citric Acid Decomposition Rate. <i>Crystal Growth and Design</i> , 2015, 15, 4536-4542.	3.0	34

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37	Thermoelectric properties of Ga-added CoSb ₃ based skutterudites. Journal of Applied Physics, 2011, 110, 013521.	2.5	33
38	Ag particles for sinter bonding: Flakes or spheres?. Applied Physics Letters, 2019, 114, .	3.3	33
39	Ag nanowires: large-scale synthesis via a trace-salt-assisted solvothermal process and application in transparent electrodes. Journal of Nanoparticle Research, 2013, 15, 1.	1.9	31
40	Structure and thermoelectric properties of double-perovskite oxides: Sr ₂ La ₂ CoMoO ₁₂ and Sr ₂ La ₂ FeMoO ₁₂ . Journal of the Ceramic Society of Japan, 2012, 120, 211-216.	2.9	29
41	Electrodeposition and growth mechanism of preferentially orientated nanotwinned Cu on silicon wafer substrate. Journal of Materials Science and Technology, 2018, 34, 1885-1890.	10.7	29
42	The comprehensive effects of visible light irradiation on silver nanowire transparent electrode. Nanotechnology, 2018, 29, 435701.	2.6	28
43	Structural and semiconductor-to-metal transitions of double-perovskite cobalt oxide Sr ₂ La ₂ CoTiO ₆ with enhanced thermoelectric capability. Applied Physics Letters, 2011, 99, .	3.3	27
44	Structure and thermoelectric properties of Ca _{2-x} Sr _x FeMoO ₆ (0 ≤ x ≤ 0.3) double-perovskite oxides. Materials Chemistry and Physics, 2012, 133, 630-634.	4.0	27
45	High-temperature thermoelectric properties of Cu ₂ Ga ₄ Te ₇ with defect zinc-blende structure. Applied Physics Letters, 2011, 98, 172104.	3.3	26
46	Effect of the Amount of Vacancies on the Thermoelectric Properties of Cu _{2-x} Ga _{4-x} Te ₇ Ternary Compounds. Materials Transactions, 2012, 53, 1212-1215.	1.2	26
47	Fabrication with Semiconductor Packaging Technologies and Characterization of a Large-Scale Flexible Thermoelectric Module. Advanced Materials Technologies, 2019, 4, 1800556.	5.8	26
48	Enhanced ductility and oxidation resistance of Zn through the addition of minor elements for use in wide-gap semiconductor die-bonding materials. Journal of Alloys and Compounds, 2012, 542, 236-240.	5.5	25
49	High-temperature thermoelectric properties of non-stoichiometric Ag _{1-x} InTe ₂ with chalcopyrite structure. Materials Science and Engineering B: Solid-State Materials for Advanced Technology, 2012, 177, 999-1002.	3.5	23
50	Retarding intermetallic compounds growth of Zn high-temperature solder and Cu substrate by trace element addition. Journal of Materials Science: Materials in Electronics, 2013, 24, 4704-4712.	2.2	22
51	Improvement of the Bond Strength of Ag Sinter-Joining on Electroless Ni/Au Plated Substrate by a One-Step Preheating Treatment. Journal of Electronic Materials, 2019, 48, 1106-1115.	2.2	22
52	Sol-Gel-Derived High-Performance Stacked Transparent Conductive Oxide Thin Films. Journal of the American Ceramic Society, 2014, 97, 3238-3243.	3.8	21
53	Hillock growth dynamics for Ag stress migration bonding. Materials Letters, 2014, 137, 170-173.	2.6	21
54	Diverse Adsorption/Desorption Abilities Originating from the Nanostructural Morphology of VOC Gas Sensing Devices Based on Molybdenum Trioxide Nanorod Arrays. Advanced Materials Interfaces, 2016, 3, 1600252.	3.7	21

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55	Thin Film of Amorphous Zinc Hydroxide Semiconductor for Optical Devices with an Energy-Efficient Beneficial Coating by Metal Organic Decomposition Process. <i>Scientific Reports</i> , 2018, 8, 10839.	3.3	20
56	Photonic sintering of thin film prepared by dodecylamine capped CuIn Ga _{1-x} Se ₂ nanoparticles for printed photovoltaics. <i>Thin Solid Films</i> , 2014, 565, 11-18.	1.8	19
57	Fabrication of a flexible copper pattern based on a sub-micro copper paste by a low temperature plasma technique. <i>RSC Advances</i> , 2015, 5, 90202-90208.	3.6	19
58	Least lead addition to mitigate tin whisker for ambient storage. <i>Journal of Materials Science: Materials in Electronics</i> , 2013, 24, 3108-3115.	2.2	17
59	La doped effects on structure and thermoelectric properties of Sr ₂ MnMoO ₆ double-perovskite oxides. <i>Journal of Asian Ceramic Societies</i> , 2013, 1, 282-288.	2.3	17
60	Thermal shock reliability of a GaN die-attach module on DBA substrate with Ti/Ag metallization by using micron/submicron Ag sinter paste. <i>Japanese Journal of Applied Physics</i> , 2019, 58, SBB15.	1.5	17
61	Development of thermal shock-resistant of GaN/DBC die-attached module by using Ag sinter paste and thermal stress relaxation structure. <i>Microelectronics Reliability</i> , 2018, 88-90, 779-787.	1.7	16
62	Refinement of the Microstructure of Sn-Ag-Bi-In Solder, by Addition of SiC Nanoparticles, to Reduce Electromigration Damage Under High Electric Current. <i>Journal of Electronic Materials</i> , 2014, 43, 4428-4434.	2.2	15
63	High performance heat curing copper-silver powders filled electrically conductive adhesives. <i>Electronic Materials Letters</i> , 2015, 11, 315-322.	2.2	15
64	Modifying the valence state of molybdenum in the efficient oxide buffer layer of organic solar cells via a mild hydrogen peroxide treatment. <i>Journal of Materials Chemistry C</i> , 2017, 5, 889-895.	5.5	15
65	Development of high-strength and superior thermal shock-resistant GaN/DBA die attach structure with Ag sinter joining by thick Ni metallization. <i>Microelectronics Reliability</i> , 2019, 100-101, 113380.	1.7	15
66	Flexible Ceramic Film Sensors for Free-Form Devices. <i>Sensors</i> , 2022, 22, 1996.	3.8	15
67	Formation of Metal-Organic Decomposition Derived Nanocrystalline Structure Titanium Dioxide by Heat Sintering and Photosintering Methods for Advanced Coating Process, and Its Volatile Organic Compounds TM Gas-Sensing Properties. <i>ACS Applied Electronic Materials</i> , 2020, 2, 1670-1678.	4.3	14
68	Effect of Void Volume and Silver Loading on Strain Response of Electrical Resistance in Silver Flakes/Polyurethane Composite for Stretchable Conductors. <i>Japanese Journal of Applied Physics</i> , 2012, 51, 11PD01.	1.5	14
69	Ag/TiO ₂ core-shell nanocables prepared with a one-step polyol process. <i>Journal of Nanoparticle Research</i> , 2012, 14, 1.	1.9	13
70	Enhanced reliability of Sn-Ag-Bi-In joint under electric current stress by adding Co/Ni elements. <i>Journal of Materials Science: Materials in Electronics</i> , 2014, 25, 3090-3095.	2.2	13
71	Strongly anisotropic thermal conductivity and adequate breathability of bilayered films for heat management of on-skin electronics. <i>2D Materials</i> , 2018, 5, 035013.	4.4	13
72	Synthesis and thermal conductivities of ZnIn ₂ Te ₄ and CdIn ₂ Te ₄ with defect-chalcopyrite structure. <i>Journal of Alloys and Compounds</i> , 2011, 509, 7484-7487.	5.5	12

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73	Targeted kinetic strategy for improving the thermal conductivity of epoxy composite containing percolating multi-layer graphene oxide chains. EXPRESS Polymer Letters, 2015, 9, 608-623.	2.1	12
74	Effects of microstructure of Ni barrier on bonding interface diffusion behaviors of Bi-Te-based thermoelectric material. Journal of Alloys and Compounds, 2020, 817, 152731.	5.5	12
75	Fabrication and Characterization of Ultra-Lightweight, Compact, and Flexible Thermoelectric Device Based on Highly Refined Chip Mounting. Advanced Materials Technologies, 2020, 5, 1901128.	5.8	12
76	Low-pressure sintering bonding with Cu and CuO flake paste for power devices. , 2014, , .		11
77	Facile identification of the critical content of multi-layer graphene oxide for epoxy composite with optimal thermal properties. RSC Advances, 2015, 5, 20376-20385.	3.6	10
78	Dry-growth of silver single-crystal nanowires from porous Ag structure. Applied Physics Letters, 2016, 108, 263105.	3.3	10
79	Ethanol gas sensing performance of high-dimensional fuzzy metal oxide nanostructure. Japanese Journal of Applied Physics, 2018, 57, 040316.	1.5	10
80	Using Ozawa method to study the curing kinetics of electrically conductive adhesives. Journal of Thermal Analysis and Calorimetry, 2014, 117, 1365-1373.	3.6	9
81	Thermal stability improvement of sintered Ag die-attach materials by addition of transition metal compound particles. Applied Physics Letters, 2019, 114, .	3.3	9
82	Synthesis and high-temperature thermoelectric properties of Ni ₃ GaSb and Ni ₃ InSb. Journal of Alloys and Compounds, 2011, 509, 4014-4017.	5.5	7
83	Mechanical stabilities of ultrasonic Al ribbon bonding on electroless nickel immersion gold finished Cu substrates. Japanese Journal of Applied Physics, 2014, 53, 04EP06.	1.5	7
84	Heel crack propagation mechanism of cold-rolled Cu/Al clad ribbon bonding in harsh environment. Journal of Materials Science: Materials in Electronics, 2015, 26, 7277-7289.	2.2	7
85	Thermoelectric properties and microstructures of AgSbTe ₂ -added p-type Pb _{0.16} Ge _{0.84} Te. Physica Status Solidi (A) Applications and Materials Science, 2012, 209, 167-170.	1.8	6
86	Silver sinter joining and stress migration bonding for WBG die-attach. , 2016, , .		6
87	Chrysanthemum petal™ arrangements of silver nano wires. Nanotechnology, 2014, 25, 485705.	2.6	5
88	Surface modification of Cu flakes through Ag precipitation for low-temperature pressureless sintering bonding. Materials Letters, 2015, 151, 68-71.	2.6	5
89	Low-Stress Design for SiC Power Modules with Sintered Porous Ag Interconnection. , 2016, , .		5
90	Nanoridge patterns on polymeric film by a photodegradation copying method for metallic nanowire networks. RSC Advances, 2018, 8, 40740-40747.	3.6	5

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91	Effects of additive NH ₃ with citric acid in the precursor and controlling the deposited thickness for growing molybdenum oxide crystals and nanorods. Materials Chemistry Frontiers, 2021, 5, 386-395.	5.9	5
92	High-strength Si wafer bonding by self-regulated eutectic reaction with pure Zn. Scripta Materialia, 2013, 68, 591-594.	5.2	4
93	Silver nanowires transparent conductive films: Fabrication using different sintering techniques. , 2013, , .		4
94	Solidification and thermal degradation of printable, stretchable electrical conductor from waterborne polyurethane and silver flakes. Journal of Thermal Analysis and Calorimetry, 2015, 122, 295-305.	3.6	4
95	First failure point of a SiC power module with sintered Ag die-attach on reliability tests. , 2017, , .		4
96	Effect of Void Volume and Silver Loading on Strain Response of Electrical Resistance in Silver Flakes/Polyurethane Composite for Stretchable Conductors. Japanese Journal of Applied Physics, 2012, 51, 11PD01.	1.5	3
97	Pressure-less plasma sintering of Cu paste for SiC die-attach of high-temperature power device manufacturing. , 2014, , .		3
98	The effect of ultraviolet radiation on silver nanowire transparent electrode based on flexible polymeric film substrate. , 2015, , .		3
99	Nanoscale Dynamic Mechanical Analysis on Heat-Resistant Silsesquioxane Nanocomposite for Power-Device Packaging. Materials Science Forum, 0, 821-823, 923-926.	0.3	3
100	Silver sinter joining for WBG die-attach. , 2017, , .		3
101	Effect of size and shape of Ag particles for mechanical properties of sintered Ag joints evaluated by micro-compression test. , 2017, , .		3
102	Prominent interface structure and bonding material of power module for high temperature operation. , 2017, , .		3
103	Highly Conductive Stretchable Wirings Composed of Ag Foils and Elastomer. , 2018, , .		3
104	(Invited) Packaging Material Technology for Wide Band Gap Power Devices and Its Performance/Reliability Evaluation. ECS Transactions, 2018, 86, 17-22.	0.5	3
105	Nano-SiC added Ag paste sintering die-attach for SiC power devices. , 2014, , .		2
106	Reliability of silver nanowire transparent electrode under atmospheric environment. , 2015, , .		2
107	Thermostable electroless plating optimized for Ag sinter die-attach realizing high T<inf>J</inf> device packaging. , 2016, , .		2
108	Ag sinter joining and wiring for high power electronics. , 2017, , .		2

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109	Investigation on the melting and tensile properties of Bi-containing SAC105 lead-free solder alloys. , 2017, , .		2
110	In situ TEM observation of sintered Ag die-attach layer with added tungsten carbide particles while heating to high temperature. Japanese Journal of Applied Physics, 2019, 58, 100910.	1.5	2
111	3D imaging of backside metallization of SiC-SBD influenced by annealing. Journal of Materials Science: Materials in Electronics, 2019, 30, 10848-10856.	2.2	2
112	Effect of W content in Co-W-P metallization on both oxidation resistance and resin adhesion. Journal of Materials Science, 2020, 55, 644-659.	3.7	2
113	Thermodynamic Equilibrium Calculations on the Oxidation Behavior of the Mo-Ru-Rh-Pd Alloys. Transactions of the Atomic Energy Society of Japan, 2012, 11, 30-36.	0.3	2
114	Effects of additional Ni and Co on microstructural evolution in Sn-Ag-Bi-In solder under current stressing. , 2012, , .		1
115	Thermal stress driven Sn whisker growth: in air and in vacuum. Journal of Materials Science: Materials in Electronics, 2013, 24, 3897-3904.	2.2	1
116	Effect of electromigration on mechanical shock behavior in solder joints of surface mounted chip components. Japanese Journal of Applied Physics, 2014, 53, 04EB02.	1.5	1
117	Phase State and Physical Properties of the Mo-Ru-Ph-Pd Alloys. Materials Research Society Symposia Proceedings, 2011, 1298, 41.	0.1	0
118	Influence of tin plating thickness on whisker growth during thermal cycling. , 2012, , .		0
119	Oxidation resistance and joining properties of Cr-doped Zn bonding for SiC die-attachment. , 2013, , .		0
120	Silver nanowire: Synthesis, conductivity improvement and application to pressure sensor. , 2014, , .		0
121	Pressureless Ag Thin-Film Die-Attach for SiC Devices. Materials Science Forum, 0, 821-823, 919-922.	0.3	0
122	Gas Sensors: Diverse Adsorption/Desorption Abilities Originating from the Nanostructural Morphology of VOC Gas Sensing Devices Based on Molybdenum Trioxide Nanorod Arrays (Adv. Mater.) Tj ETQq0 0 0.7gBT /Overlock 10 T		0
123	A new micro-silver paste for high power semiconductor devices. , 2016, , .		0
124	High temperature SiC power device realized by electroless plating diffusion barrier for Ag sinter die-attach. , 2017, , .		0
125	Composition of Copper Nanowires and Preparation of Transparent Conductive Film by Intense Pulse Light Sintering. Nippon Kinzoku Gakkaishi/Journal of the Japan Institute of Metals, 2017, 81, 383-388.	0.4	0
126	Heat-resistant packaging technology for wide bandgap power devices and thermal reliability testing. , 2018, , .		0

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127	Nearly perfect Ag joints prepared by Ag stress-migration-bonding (SMB) process. , 2018, , .		0
128	A nearly-perfect Ag joints prepared by novel Ag to Ag direct bonding. , 2018, , .		0
129	Evaluation of Stretchable Conductor for Measuring Clothing Pressure. Lecture Notes in Computer Science, 2014, , 191-197.	1.3	0