Xiaowu Hu

List of Publications by Year
in descending order

99 papers	1,924 citations	279798 23 h-index	302126 39 g-index
99 all docs	99 docs citations	99 times ranked	586 citing authors

#	Article	IF	Citations
1	Effects of Ni modified MWCNTs on the microstructural evolution and shear strength of Sn-3.0Ag-0.5Cu composite solder joints. Materials Characterization, 2020, 163, 110287.	4.4	143
2	Microstructure evolution and shear fracture behavior of aged Sn3Ag0.5Cu/Cu solder joints. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2016, 673, 167-177.	5.6	124
3	Effect of Co addition into Ni film on shear strength of solder/Ni/Cu system: Experimental and theoretical investigations. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2020, 788, 139589.	5.6	95
4	Influences of Mono-Ni(P) and Dual-Cu/Ni(P) Plating on the Interfacial Microstructure Evolution of Solder Joints. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2019, 50, 480-492.	2.2	90
5	Shear strength and fracture behavior of reflowed Sn3.0Ag0.5Cu/Cu solder joints under various strain rates. Journal of Alloys and Compounds, 2017, 690, 720-729.	5.5	86
6	Interfacial reaction and IMC growth between Bi-containing Sn0.7Cu solders and Cu substrate during soldering and aging. Journal of Alloys and Compounds, 2014, 582, 341-347.	5.5	77
7	Developments of high strength Bi-containing Sn0.7Cu lead-free solder alloys prepared by directional solidification. Journal of Alloys and Compounds, 2015, 625, 241-250.	5.5	69
8	Enhanced thermal performance of phase-change materials supported by mesoporous silica modified with polydopamine/nano-metal particles for thermal energy storage. Renewable Energy, 2021, 178, 118-127.	8.9	69
9	Microstructure and shear strength of Sn37Pb/Cu solder joints subjected to isothermal aging. Microelectronics Reliability, 2014, 54, 1575-1582.	1.7	53
10	Microstructure evolution and mechanical properties of Sn0.7Cu0.7Bi lead-free solders produced by directional solidification. Journal of Alloys and Compounds, 2013, 566, 239-245.	5.5	43
11	Interfacial reaction and shear strength of ultrasonically-assisted Sn-Ag-Cu solder joint using composite flux. Journal of Manufacturing Processes, 2021, 62, 291-301.	5.9	41
12	Effect of Cu additions on mechanical properties of Ni3Sn4-based intermetallic compounds: First-principles calculations and nano-indentation measurements. Vacuum, 2019, 164, 7-14.	3.5	40
13	Enhanced thermal performance of phase-change material supported by nano-Ag coated eggplant-based biological porous carbon. Journal of Energy Storage, 2021, 43, 103174.	8.1	35
14	Interfacial reaction and growth behavior of IMCs layer between Snâ€“58Bi solders and a Cu substrate. Journal of Materials Science: Materials in Electronics, 2013, 24, 2027-2034.	2.2	34
15	Wetting kinetics and spreading phenomena of the precursor film and bulk liquid in the AgCuTi/TC4 system. Journal of Alloys and Compounds, 2019, 802, 345-354.	5.5	34
16	Microstructure and tensile properties of Snâ€“1Cu lead-free solder alloy produced by directional solidification. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2012, 556, 816-823.	5.6	33
17	The growth behavior of interfacial intermetallic compound between Snâ€“3.5Agâ€“0.5Cu solder and Cu substrate under different thermal-aged conditions. Journal of Materials Science: Materials in Electronics, 2017, 28, 18515-18528.	2.2	27
18	Effects of ultrasonic treatment on mechanical properties and microstructure evolution of the Cu/SAC305 solder joints. Journal of Manufacturing Processes, 2021, 64, 648-654.	5.9	27

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19	Growth behavior of interfacial Cuâ€“Sn intermetallic compounds of Sn/Cu reaction couples during dip soldering and aging. Journal of Materials Science: Materials in Electronics, 2014, 25, 936-945.	2.2	26
20	Study on the microstructure and mechanical property of Cu-foam modified Sn3.0Ag0.5Cu solder joints by ultrasonic-assisted soldering. Journal of Manufacturing Processes, 2021, 64, 508-517.	5.9	26
21	Effect of Ni addition to the Cu substrate on the interfacial reaction and IMC growth with Sn3.0Ag0.5Cu solder. Applied Physics A: Materials Science and Processing, 2018, 124, 1.	2.3	25
22	Shear strengths and fracture behaviors of Cu/Sn37Pb/Cu soldered joints subjected to different displacement rates. Journal of Alloys and Compounds, 2014, 600, 13-20.	5.5	23
23	Effects of post-reflow cooling rate and thermal aging on growth behavior of interfacial intermetallic compound between SAC305 solder and Cu substrate. Applied Physics A: Materials Science and Processing, 2016, 122, 1.	2.3	23
24	Shear strength and fracture surface analysis of lead-free solder joints with high fraction of IMCs. Vacuum, 2020, 180, 109611.	3.5	23
25	Enhanced thermal performance of phase change materials supported by hierarchical porous carbon modified with polydopamine/nano-Ag for thermal energy storage. Journal of Energy Storage, 2022, 49, 104129.	8.1	22
26	Effect of strain rate on interfacial fracture behaviors of Sn-58Bi/Cu solder joints. Journal of Materials Science: Materials in Electronics, 2014, 25, 57-64.	2.2	21
27	Interfacial microstructure evolution and shear strength of Sn0.7Cuâ€“xNi/Cu solder joints. Journal of Materials Science: Materials in Electronics, 2018, 29, 11314-11324.	2.2	21
28	Tensile properties of Cu/Snâ€“58Bi/Cu soldered joints subjected to isothermal aging. Journal of Materials Science: Materials in Electronics, 2014, 25, 2416-2425.	2.2	20
29	Effect of Ni addition into the Cu substrate on the interfacial IMC growth during the liquid-state reaction with Snâ€“58Bi solder. Journal of Materials Science: Materials in Electronics, 2019, 30, 1907-1918.	2.2	20
30	Shear strength and fracture surface analysis of Sn58Bi/Cu solder joints under a wide range of strain rates. Microelectronics Reliability, 2018, 86, 27-37.	1.7	19
31	The effects of Ni addition on microstructure evolution and mechanical properties of solder joints undergoing solid-liquid electromigration. Materials Letters, 2019, 256, 126609.	2.6	19
32	Interfacial reaction and IMC growth between Sn-37â€Pb and heterogeneous dual-phase substrate. Vacuum, 2019, 159, 112-124.	3.5	19
33	Form-stable phase change materials enhanced photothermic conversion and thermal conductivity by Ag-expanded graphite. Journal of Energy Storage, 2022, 52, 105060.	8.1	19
34	Microstructure and Mechanical Properties of Ultrasonic Welded Joint of 1060 Aluminum Alloy and T2 Pure Copper. Metals, 2017, 7, 361.	2.3	18
35	Effect of Cu6Sn5 nanoparticle on thermal behavior, mechanical properties and interfacial reaction of Sn3.0Ag0.5Cu solder alloys. Journal of Materials Science: Materials in Electronics, 2018, 29, 15983-15993.	2.2	18
36	Fe doped Niâ€“Co alloy by electroplating as protective coating for solid oxide fuel cell interconnect application. International Journal of Hydrogen Energy, 2021, 46, 39457-39468.	7.1	17

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37	Finite Element Analysis to the Constitutive Behavior of Sintered Silver Nanoparticles Under Nanoindentation. International Journal of Applied Mechanics, 2018, 10, 1850110.	2.2	16
38	Forming mechanism and growth of Kirkendall voids of Sn/Cu joints for electronic packaging: A recent review. Journal of Advanced Joining Processes, 2022, 6, 100125.	2.7	16
39	Effect of Bi Segregation on the Asymmetrical Growth of Cu-Sn Intermetallic Compounds in Cu/Sn-58Bi/Cu Sandwich Solder Joints During Isothermal Aging. Journal of Electronic Materials, 2013, 42, 3567-3572.	2.2	15
40	Interfacial Reaction and IMC Growth of an Ultrasonically Soldered Cu/SAC305/Cu Structure during Isothermal Aging. Materials, 2018, 11, 84.	2.9	15
41	Effect of Cu on the diffusion behavior and electrical properties of Ni-Co conversion coating for metallic interconnects in solid oxide fuel cells. Journal of Alloys and Compounds, 2021, 887, 161358.	5.5	15
42	Interfacial reaction and IMCs growth behavior of Sn3Ag0.5Cu/Ni solder bump during aging at various temperatures. Journal of Materials Science: Materials in Electronics, 2016, 27, 4245-4252.	2.2	14
43	Interfacial reaction and microstructure between the Sn3Ag0.5Cu solder and Cuâ€“Co dual-phase substrate. Applied Physics A: Materials Science and Processing, 2018, 124, 1.	2.3	14
44	Effects of the Ni electrodeposit on microstructure evolution and electrical resistance of the P-type Bi2Te3 solder joint. Journal of Alloys and Compounds, 2020, 832, 155006.	5.5	14
45	Effects of thermal aging on growth behavior of interfacial intermetallic compound of dip soldered Sn/Cu joints. Journal of Materials Science: Materials in Electronics, 2018, 29, 8863-8875.	2.2	13
46	Interfacial IMC growth of SAC305/Cu joint with a novel dual-layer of Ni(P)/Cu plating during solid-state aging. Microelectronic Engineering, 2018, 199, 69-79.	2.4	13
47	Interfacial reaction, wettability, and shear strength of ultrasonic-assisted lead-free solder joints prepared using Cuâ€“GNSs-doped flux. Journal of Materials Science: Materials in Electronics, 2021, 32, 24507-24523.	2.2	13
48	Growth behavior of IMCs layer of the Snâ€“35Biâ€“1Ag on Cu, Niâ€“P/Cu and Niâ€“Coâ€“P/Cu substrates during aging. Journal of Materials Science: Materials in Electronics, 2019, 30, 1519-1530.	2.2	12
49	Cu doped Niâ€“Co spinel protective coatings for solid oxide fuel cell interconnects application. International Journal of Hydrogen Energy, 2021, 46, 33580-33593.	7.1	12
50	A study on the interfacial reaction of Sn58Bi/Cu soldered joints under various cooling and aging conditions. Journal of Materials Science: Materials in Electronics, 2015, 26, 5140-5151.	2.2	11
51	Wetting kinetics and spreading phenomena of Sn-35Bi-1Ag solder on different substrates. Journal of Materials Science: Materials in Electronics, 2018, 29, 13914-13924.	2.2	11
52	Shear strength and fracture behavior of solder/Kovar joints with electroplated Cu film. Vacuum, 2019, 167, 428-437.	3.5	11
53	Investigations on elastic properties and electronic structures of Î±-CoSn3 doped with Ni via first-principles calculations and nano-indentation measurements. Results in Physics, 2019, 15, 102607.	4.1	11
54	Insights on interfacial IMCs growth and mechanical strength of asymmetrical Cu/SAC305/Cu-Co system. Vacuum, 2019, 167, 77-89.	3.5	11

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55	Effect of sample diameter on primary and secondary dendrite arm spacings during directional solidification of Pb-26wt.%Bi hypo-peritectic alloy. Rare Metals, 2011, 30, 424-431.	7.1	9
56	Effect of alloying Cu substrate on microstructure and coarsening behavior of Cu6Sn5 grains of soldered joints. Journal of Materials Science: Materials in Electronics, 2015, 26, 2782-2794.	2.2	9
57	Effect of Ni Addition to Sn0.7Cu Solder Alloy on Thermal Behavior, Microstructure, and Mechanical Properties. Journal of Materials Engineering and Performance, 2018, 27, 6564-6576.	2.5	9
58	Influence of Ni and Cu electrodeposits on the interfacial reaction between SAC305 solder and the Bi2(Te,Se)3 thermoelectric material. Journal of Materials Science: Materials in Electronics, 2019, 30, 14791-14804.	2.2	9
59	Influence of Ni foam/Sn composite solder foil on IMC growth and mechanical properties of solder joints bonded with solid-liquid electromigration. Intermetallics, 2021, 131, 107107.	3.9	9
60	Microstructure evolution and nano-phases strengthening of Al-5%Cu alloy by adding trace AlSiTiCrNiCu high entropy alloy. Materials Characterization, 2021, 175, 111100.	4.4	8
61	Effects of In addition on the wettability, interfacial characterization and properties of ternary Snâ€“Cuâ€“Ni solders. Journal of Materials Science: Materials in Electronics, 2018, 29, 18840-18851.	2.2	7
62	Effect of electroplating parameters on electroplated Cu film and microvoid formation of solder joints. Journal of Materials Science: Materials in Electronics, 2018, 29, 18404-18416.	2.2	7
63	Influence of additives on electroplated copper films and shear strength of SAC305/Cu solder joints. Journal of Materials Science: Materials in Electronics, 2020, 31, 2320-2330.	2.2	7
64	Influences of different barrier films on microstructures and electrical properties of Bi2Te3-based joints. Journal of Materials Science: Materials in Electronics, 2020, 31, 14714-14729.	2.2	7
65	Interfacial reaction between liquid-state Sn-xBi solder and Co substrate. Journal of Materials Science: Materials in Electronics, 2018, 29, 9155-9165.	2.2	6
66	Effect of Cu6Sn5 nanoparticles size on the properties of Sn0.3Ag0.7Cu nano-composite solders and joints. Journal of Materials Science: Materials in Electronics, 2019, 30, 14726-14735.	2.2	6
67	Effect of flux doped with Cu6Sn5 nanoparticles on the interfacial reaction of lead-free solder joints. Journal of Materials Science: Materials in Electronics, 2019, 30, 11552-11562.	2.2	6
68	Mechanical properties of CoSn2 and Î±-CoSn3 intermetallic compounds: first-principles calculations and nano-indentation measurements. Applied Physics A: Materials Science and Processing, 2019, 125, 1.	2.3	6
69	Effects of the surface roughness on wetting properties and interfacial reactions between SAC305 solder and Cu substrate with Niâ€“Wâ€“P coating. Journal of Materials Science: Materials in Electronics, 2020, 31, 15086-15096.	2.2	6
70	Influences of Ni addition into Cuâ€“xNi alloy on the microstructure evolution and mechanical property of Snâ€“58Bi/Cuâ€“xNi solder joint. Applied Physics A: Materials Science and Processing, 2020, 126, 1.	2.3	6
71	Influence of Zn additions on the interfacial reaction and microstructure of Sn37Pb/Cu solder joints. Applied Physics A: Materials Science and Processing, 2017, 123, 1.	2.3	5
72	Investigation of the interfacial reactions and growth behavior of interfacial intermetallic compound between Sn37Pb solder and Au/Ni/Kovar substrate. Materials Research Express, 2019, 6, 076306.	1.6	5

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73	Effects of germanium on the microstructural, mechanical and thermal properties of Sn-0.7Cu solder alloy. Materials Research Express, 2019, 6, 016556.	1.6	5
74	Effect of rare earth Ce on the thermal behavior, microstructure and mechanical properties of Znâ€“30Snâ€“2Cu high temperature lead-free solder alloy. Journal of Materials Science: Materials in Electronics, 2020, 31, 16437-16447.	2.2	5
75	Influence of Bi Addition on Pure Sn Solder Joints: Interfacial Reaction, Growth Behavior and Thermal Behavior. Journal Wuhan University of Technology, Materials Science Edition, 2019, 34, 668-675.	1.0	4
76	Effect of Cu concentration on the interfacial reactions between Sn-xCu solders and Cu substrate. Materials Research Express, 2019, 6, 076310.	1.6	4
77	Significant Inhibition of IMCs Growth between an Electroless Ni-W-P Metallization and SAC305 Solder During Soldering and Aging. Journal Wuhan University of Technology, Materials Science Edition, 2019, 34, 165-175.	1.0	4
78	Research on Bi contents addition into Snâ€“Cu-based lead-free solder alloy. Journal of Materials Science: Materials in Electronics, 2022, 33, 15586-15603.	2.2	4
79	Mechanical response of reaction phases of the TiAl/steel brazed joint under a tensile load. Journal of Materials Science, 2014, 49, 1114-1120.	3.7	3
80	Formation, evolution and final structure of interface in 2024Al joints fabricated by explosive welding. Journal Wuhan University of Technology, Materials Science Edition, 2017, 32, 1171-1178.	1.0	3
81	Theoretical and experimental investigations on mechanical properties of Co1â^'Ni Sn2 intermetallic compounds. Results in Physics, 2019, 14, 102439.	4.1	3
82	Fracture behavior and mechanical strength of sandwich structure solder joints with Cuâ€“Ni(P) coating during thermal aging. Journal of Materials Science: Materials in Electronics, 2020, 31, 3876-3889.	2.2	3
83	Influence of Co addition on microstructure evolution and mechanical strength of solder joints bonded with solidâ€“liquid electromigration. Journal of Materials Science: Materials in Electronics, 2021, 32, 17336-17348.	2.2	3
84	Rod-like structure and microhardness during directional solidification of Sn-1wt.%Cu eutectic alloy. International Journal of Materials Research, 2012, 103, 1332-1336.	0.3	2
85	Novel insights in growth of intermetallic compounds between Snâ€“3.0Agâ€“0.5Cu solder and flexible PCB substrates under strain. Journal of Materials Science: Materials in Electronics, 2019, 30, 9410-9420.	2.2	2
86	Influence of benzotriazole on electroplated Cu films and interfacial microstructure evolution of solder joints. Journal of Materials Science: Materials in Electronics, 2019, 30, 21126-21137.	2.2	2
87	Synergetic effect of strain rate and electroplated Cu film for shear strength of solder/Kovar joints. Journal of Materials Science: Materials in Electronics, 2019, 30, 1434-1449.	2.2	2
88	Effects of accelerator in a copper plating bath on interfacial microstructure and mechanical properties of SAC305/Cu solder joints. Journal of Materials Science: Materials in Electronics, 2020, 31, 22810-22819.	2.2	2
89	Effects of the Ni(P) plating thickness on microstructure evolution of interfacial IMCs in Snâ€“58Bi/Ni(P)/Cu solder joints. Journal of Materials Science: Materials in Electronics, 2020, 31, 11470-11481.	2.2	2
90	Effect of ultrasonic treatment on interfacial reactions and microstructure of SnCr/CuFeNiCoCr solder joints. Journal of Materials Science: Materials in Electronics, 2021, 32, 15352-15363.	2.2	2

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91	A study of the microstructure, thermal properties and wetting kinetics of Snâ€“3Agâ€“xZn lead-free solders. Applied Physics A: Materials Science and Processing, 2016, 122, 1.	2.3	1
92	Interfacial IMC Growth and Nanomechanical Characterizations of Solder in Sn-16Sb/Cu Joints during Solid-state Aging. Journal Wuhan University of Technology, Materials Science Edition, 2019, 34, 1210-1219.	1.0	1
93	Effects of aluminum addition (xÂ=Â0â€“1Âwt%) on the thermal behavior, microstructure and mechanical properties of Znâ€“30Sn high temperature lead-free solder alloy. Materials Research Express, 2019, 6, 0865d8.	1.6	1
94	Research on Interfacial Reaction and Growth Behavior of Intermetallic Compound of Dip-Soldered Sn/Ni System. Transactions of the Indian Institute of Metals, 2019, 72, 651-661.	1.5	1
95	Study on the performance of Cu foam with different porosity on SAC305 solder joints under ultrasonic-assisted soldering. Journal of Materials Science: Materials in Electronics, 2021, 32, 28108.	2.2	1
96	Enhanced mechanical properties and corrosion behavior of Znâ€“30Snâ€“2Cu high-temperature lead-free solder alloy by adding Sm. Journal of Materials Science: Materials in Electronics, 2022, 33, 6469.	2.2	1
97	Effect of Bi on microstructure and mechanical properties of Sn-10Sb-1.5Cu (SSC1015) solder alloys. Materials Research Express, 2019, 6, 026565.	1.6	0
98	Interfacial microstructure evolution of solder joints by doping Cu nanoparticles into Ni(P) electroless plating. Journal of Materials Science: Materials in Electronics, 2020, 31, 20232-20244.	2.2	0
99	Al-10Âwt.%Zn/Al2O3@ZnO Microcapsules for High-Temperature Thermal Storage: Preparation and Thermal Properties. Journal of Materials Engineering and Performance, 0, , 1.	2.5	0