

Young-Chang Joo

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115
papers

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h-index

45
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129
ext. papers

2,853
ext. citations

7.6
avg, IF

4.85
L-index

#	Paper	IF	Citations
115	Highly efficient and bending durable perovskite solar cells: toward a wearable power source. <i>Energy and Environmental Science</i> , 2015 , 8, 916-921	35.4	518
114	A Strain-Insensitive Stretchable Electronic Conductor: PEDOT:PSS/Acrylamide Organogels. <i>Advanced Materials</i> , 2016 , 28, 1636-43	24	176
113	A new hematite photoanode doping strategy for solar water splitting: oxygen vacancy generation. <i>Physical Chemistry Chemical Physics</i> , 2013 , 15, 2117-24	3.6	115
112	Tailoring of Electron-Collecting Oxide Nanoparticulate Layer for Flexible Perovskite Solar Cells. <i>Journal of Physical Chemistry Letters</i> , 2016 , 7, 1845-51	6.4	83
111	An iron oxide photoanode with hierarchical nanostructure for efficient water oxidation. <i>Journal of Materials Chemistry A</i> , 2014 , 2, 2297-2305	13	68
110	Electromigration-induced transgranular failure mechanisms in single-crystal aluminum interconnects. <i>Journal of Applied Physics</i> , 1997 , 81, 6062-6072	2.5	59
109	Crack nucleation during mechanical fatigue in thin metal films on flexible substrates. <i>Acta Materialia</i> , 2013 , 61, 3473-3481	8.4	56
108	Microstructure Evolution and Defect Formation in Cu Through-Silicon Vias (TSVs) During Thermal Annealing. <i>Journal of Electronic Materials</i> , 2012 , 41, 712-719	1.9	55
107	Temperature Effect on Intermetallic Compound Growth Kinetics of Cu Pillar/Sn Bumps. <i>Journal of Electronic Materials</i> , 2009 , 38, 2228-2233	1.9	53
106	Stretching-Induced Growth of PEDOT-Rich Cores: A New Mechanism for Strain-Dependent Resistivity Change in PEDOT:PSS Films. <i>Advanced Functional Materials</i> , 2013 , 23, 4020-4027	15.6	45
105	Fatigue-free, electrically reliable copper electrode with nanohole array. <i>Small</i> , 2012 , 8, 3300-6	11	42
104	Tunable Sn structures in porosity-controlled carbon nanofibers for all-solid-state lithium-ion battery anodes. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 11021-11030	13	40
103	Improved mechanical performance of solution-processed MWCNT/Ag nanoparticle composite films with oxygen-pressure-controlled annealing. <i>Carbon</i> , 2012 , 50, 98-106	10.4	36
102	A Stretchable Ionic Diode from Copolyelectrolyte Hydrogels with Methacrylated Polysaccharides. <i>Advanced Functional Materials</i> , 2019 , 29, 1806909	15.6	36
101	Electrochemical upgrade of CO ₂ from amine capture solution. <i>Nature Energy</i> , 2021 , 6, 46-53	62.3	36
100	Intermetallic Compound Growth and Reliability of Cu Pillar Bumps Under Current Stressing. <i>Journal of Electronic Materials</i> , 2010 , 39, 2281-2285	1.9	35
99	Effect of film thickness on the stretchability and fatigue resistance of Cu films on polymer substrates. <i>Journal of Materials Research</i> , 2014 , 29, 2827-2834	2.5	33

98	Effect of Ionization Characteristics on Electrochemical Migration Lifetimes of Sn-3.0Ag-0.5Cu Solder in NaCl and Na ₂ SO ₄ Solutions. <i>Journal of Electronic Materials</i> , 2008 , 37, 1111-1118	1.9	31
97	Ion-to-ion amplification through an open-junction ionic diode. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 13807-13815	11.5	27
96	High performance ZnSnO thin film transistors with Cu source/drain electrode. <i>Physica Status Solidi - Rapid Research Letters</i> , 2013 , 7, 196-198	2.5	27
95	Synthetic Mechanism Discovery of Monophase Cuprous Oxide for Record High Photoelectrochemical Conversion of CO to Methanol in Water. <i>ACS Nano</i> , 2018 , 12, 8187-8196	16.7	24
94	Long-term reliable physical health monitoring by sweat pore-inspired perforated electronic skins. <i>Science Advances</i> , 2021 , 7,	14.3	24
93	Structural-relaxation-driven electron doping of amorphous oxide semiconductors by increasing the concentration of oxygen vacancies in shallow-donor states. <i>NPG Asia Materials</i> , 2016 , 8, e250-e250	10.3	24
92	One-step structure modulation of electrospun metal-loaded carbon nanofibers: Redox reaction controlled calcination. <i>Carbon</i> , 2015 , 82, 273-281	10.4	23
91	Effect of Bias Voltage on the Electrochemical Migration Behaviors of Sn and Pb. <i>IEEE Transactions on Device and Materials Reliability</i> , 2009 , 9, 483-488	1.6	23
90	Growth Mechanism of Strain-Dependent Morphological Change in PEDOT:PSS Films. <i>Scientific Reports</i> , 2016 , 6, 25332	4.9	22
89	Designing thermal and electrochemical oxidation processes for EMnO ₂ nanofibers for high-performance electrochemical capacitors. <i>Journal of Materials Chemistry A</i> , 2014 , 2, 7197-7204	13	22
88	Effects of bending fatigue on the electrical resistance in metallic films on flexible substrates. <i>Metals and Materials International</i> , 2010 , 16, 947-951	2.4	22
87	Reliability Issues and Solutions in Flexible Electronics Under Mechanical Fatigue. <i>Electronic Materials Letters</i> , 2018 , 14, 387-404	2.9	21
86	Computational wrapping: A universal method to wrap 3D-curved surfaces with nonstretchable materials for conformal devices. <i>Science Advances</i> , 2020 , 6, eaax6212	14.3	21
85	Bending Strain and Bending Fatigue Lifetime of Flexible Metal Electrodes on Polymer Substrates. <i>Materials</i> , 2019 , 12,	3.5	20
84	A Bendable Li-Ion Battery with a Nano-Hairy Electrode: Direct Integration Scheme on the Polymer Substrate. <i>Advanced Energy Materials</i> , 2015 , 5, 1400611	21.8	18
83	Thermodynamically driven self-formation of copper-embedded nitrogen-doped carbon nanofiber catalysts for a cascade electroreduction of carbon dioxide to ethylene. <i>Journal of Materials Chemistry A</i> , 2020 , 8, 11632-11641	13	17
82	Electrochemical Migration Characteristics of Eutectic Sn-Pb Solder Alloy in NaCl and Na ₂ SO ₄ Solutions. <i>Journal of Electronic Materials</i> , 2009 , 38, 691-699	1.9	17
81	Quasi-graphitic carbon shell-induced Cu confinement promotes electrocatalytic CO reduction toward C products. <i>Nature Communications</i> , 2021 , 12, 3765	17.4	17

80	Predictive fabrication of Ni phosphide embedded in carbon nanofibers as active and stable electrocatalysts. <i>Journal of Materials Chemistry A</i> , 2019 , 7, 7451-7458	13	17
79	Evolution of electromigration-induced voids in single crystalline aluminum lines with different crystallography orientations. <i>Materials Research Society Symposia Proceedings</i> , 1993 , 309, 351		16
78	Electrical and Mechanical Properties of Through-Silicon Vias and Bonding Layers in Stacked Wafers for 3D Integrated Circuits. <i>Journal of Electronic Materials</i> , 2012 , 41, 232-240	1.9	15
77	Investigation of crystallization behaviors of nitrogen-doped Ge ₂ Sb ₂ Te ₅ films by thermomechanical characteristics. <i>Applied Physics Letters</i> , 2009 , 94, 061904	3.4	15
76	Metal-organic Framework-driven Porous Cobalt Disulfide Nanoparticles Fabricated by Gaseous Sulfurization as Bifunctional Electrocatalysts for Overall Water Splitting. <i>Scientific Reports</i> , 2019 , 9, 19539	4.9	15
75	Interfacial Reaction Effect on Electrical Reliability of Cu Pillar/Sn Bumps. <i>Journal of Electronic Materials</i> , 2010 , 39, 2368-2374	1.9	14
74	Line length dependence of threshold current density and driving force in eutectic SnPb and SnAgCu solder electromigration. <i>Journal of Applied Physics</i> , 2008 , 103, 073701	2.5	14
73	Nanofiber Channel Organic Electrochemical Transistors for Low-Power Neuromorphic Computing and Wide-Bandwidth Sensing Platforms. <i>Advanced Science</i> , 2021 , 8, 2001544	13.6	14
72	Densely charged polyelectrolyte-stuffed nanochannel arrays for power generation from salinity gradient. <i>Scientific Reports</i> , 2016 , 6, 26416	4.9	14
71	Composition, Microstructure, and Electrical Performance of Sputtered SnO Thin Films for p-Type Oxide Semiconductor. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 3810-3821	9.5	13
70	Coupled self-assembled monolayer for enhancement of Cu diffusion barrier and adhesion properties. <i>RSC Advances</i> , 2014 , 4, 60123-60130	3.7	13
69	Effects of Wafer Cleaning and Annealing on Glass/Silicon Wafer Direct Bonding. <i>Journal of Electronic Packaging, Transactions of the ASME</i> , 2004 , 126, 120-123	2	13
68	Effect of isothermal aging on intermetallic compounds and Kirkendall void growth kinetics of Au stud bumps. <i>Metals and Materials International</i> , 2009 , 15, 819-823	2.4	12
67	Controlled Molybdenum Disulfide Assembly inside Carbon Nanofiber by Boudouard Reaction Inspired Selective Carbon Oxidation. <i>Advanced Materials</i> , 2017 , 29, 1605327	24	11
66	Influences of semiconductor morphology on the mechanical fatigue behavior of flexible organic electronics. <i>Applied Physics Letters</i> , 2013 , 103, 241904	3.4	11
65	Relationship between grain structures and texture of damascene Cu lines. <i>Journal of Electronic Materials</i> , 2004 , 33, 48-52	1.9	11
64	Selective crack suppression during deformation in metal films on polymer substrates using electron beam irradiation. <i>Nature Communications</i> , 2019 , 10, 4454	17.4	10
63	Gaseous Nanocarving-Mediated Carbon Framework with Spontaneous Metal Assembly for Structure-Tunable Metal/Carbon Nanofibers. <i>Advanced Materials</i> , 2017 , 29, 1702958	24	10

62	The effect of energetically coated ZrOx on enhanced electrochemical performances of Li(Ni _{1/3} Co _{1/3} Mn _{1/3})O ₂ cathodes using modified radio frequency (RF) sputtering. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 12982-12991	13	10
61	In-Situ Observation of Electromigration in Eutectic SnPb Solder Lines: Atomic Migration and Hillock Formation. <i>Journal of Electronic Materials</i> , 2007 , 36, 562-567	1.9	10
60	Three-dimensional simulation of microstructure evolution in damascene interconnects: Effect of overburden thickness. <i>Journal of Electronic Materials</i> , 2005 , 34, 559-563	1.9	10
59	Improved Battery Performance of Nanocrystalline Si Anodes Utilized by Radio Frequency (RF) Sputtered Multifunctional Amorphous Si Coating Layers. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 2242-2248	9.5	9
58	Anion Extraction-Induced Polymorph Control of Transition Metal Dichalcogenides. <i>Nano Letters</i> , 2019 , 19, 8644-8652	11.5	9
57	Microstructure evolution in Cu pillar/eutectic SnPb solder system during isothermal annealing. <i>Metals and Materials International</i> , 2009 , 15, 815-818	2.4	9
56	Effect of capping layer on hillock formation in thin Al films. <i>Metals and Materials International</i> , 2008 , 14, 147-150	2.4	9
55	Extremely Versatile Deformability beyond Materiality: A New Material Platform through Simple Cutting for Rugged Batteries. <i>Advanced Engineering Materials</i> , 2019 , 21, 1900206	3.5	8
54	New pathway for the formation of metallic cubic phase Ge-Sb-Te compounds induced by an electric current. <i>Scientific Reports</i> , 2016 , 6, 21466	4.9	8
53	Electromigration Characteristics and Morphological Evolution of Cu Interconnects on CVD Co and Ru Liners for 10-nm Class VLSI Technology. <i>IEEE Electron Device Letters</i> , 2018 , 39, 1050-1053	4.4	8
52	Bonding structure and etching characteristics of amorphous carbon for a hardmask deposited by DC sputtering. <i>Carbon</i> , 2019 , 154, 277-284	10.4	8
51	Improvement of Electrochemical Migration Resistance by Cu/Sn Intermetallic Compound Barrier on Cu in Printed Circuit Board. <i>IEEE Transactions on Device and Materials Reliability</i> , 2014 , 14, 382-389	1.6	8
50	Effect of the composition of Sn-Pb alloys on the microstructure of filaments and the electrochemical migration characteristics. <i>Metals and Materials International</i> , 2011 , 17, 617-621	2.4	8
49	Photoelectrochemical CO ₂ Reduction via Cu ₂ O/CuFeO ₂ Hierarchical nanorods photocatalyst. <i>ChemCatChem</i> , 2020 , 12, 5185-5191	5.2	7
48	Fabrication of a hydrogen sensor using palladium-coated silver dendrites formed electrochemically. <i>Metals and Materials International</i> , 2010 , 16, 789-792	2.4	7
47	Effect of grain boundary energy on surface-energy induced abnormal grain growth in columnar-grained film. <i>Metals and Materials International</i> , 2002 , 8, 1-5	2.4	7
46	Cu Diffusion-Driven Dynamic Modulation of the Electrical Properties of Amorphous Oxide Semiconductors. <i>Advanced Functional Materials</i> , 2017 , 27, 1700336	15.6	6
45	Improvements of mechanical fatigue reliability of Cu interconnects on flexible substrates through MoTi alloy under-layer. <i>Electronic Materials Letters</i> , 2015 , 11, 149-154	2.9	6

44	Effect of twisting fatigue on the electrical reliability of a metal interconnect on a flexible substrate. <i>Journal of Materials Research</i> , 2018 , 33, 138-148	2.5	6
43	Effects of film thickness and deposition rate on the diffusion barrier performance of titanium nitride in Cu-through silicon vias. <i>Electronic Materials Letters</i> , 2014 , 10, 275-279	2.9	6
42	Measurement of poisson's ratio of a thin film on a substrate by combining x-ray diffraction with in situ substrate bending. <i>Electronic Materials Letters</i> , 2009 , 5, 51-54	2.9	6
41	Current-induced morphological evolution and reliability of Ag interconnects fabricated by a printing method based on nanoparticles. <i>RSC Advances</i> , 2017 , 7, 9719-9723	3.7	5
40	Direct observation and catalytic role of mediator atom in 2D materials. <i>Science Advances</i> , 2020 , 6, eaba4942	4.4	5
39	Thermomechanical In Situ Monitoring of Bi ₂ Te ₃ Thin Film and Its Relationship with Microstructure and Thermoelectric Performances. <i>Electronic Materials Letters</i> , 2018 , 14, 426-431	2.9	5
38	Effect of effective modulus on hillock formations in Al lines on glass. <i>Metals and Materials International</i> , 2009 , 15, 661-664	2.4	5
37	Effects of dopings on the electric-field-induced atomic migration and void formation in Ge ₂ Sb ₂ Te ₅ 2011 ,		5
36	Rapid and Reliable Formation of Highly Densified Bilayer Oxide Dielectrics on Silicon Substrates via DUV Photoactivation for Low-Voltage Solution-Processed Oxide Thin-Film Transistors. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 2820-2828	9.5	5
35	Hydrogel-Based Iontronics on a Polydimethylsiloxane Microchip. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 6606-6614	9.5	5
34	Effect of Thermoelectric Leg Thickness in a Planar Thin Film TEC Device on Different Substrates. <i>Electronic Materials Letters</i> , 2019 , 15, 686-692	2.9	4
33	Thermally Stable Amorphous Oxide-based Schottky Diodes through Oxygen Vacancy Control at Metal/Oxide Interfaces. <i>Scientific Reports</i> , 2019 , 9, 7872	4.9	4
32	PEDOT:PSS/Polyacrylamide Nanoweb: Highly Reliable Soft Conductors with Swelling Resistance. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 10099-10107	9.5	4
31	Study of Cu Migration-Induced Failure of Inter-Layer Dielectric 2006 ,		4
30	Effect of the Thermal Annealing on the Stretchability and Fatigue Failure of the Copper Film on the Polymer Substrate. <i>Journal of Electronic Materials</i> , 2019 , 48, 4582-4588	1.9	3
29	Operation Range-Optimized Silver Nanowire Through Junction Treatment. <i>Electronic Materials Letters</i> , 2020 , 16, 491-497	2.9	3
28	In Twisting Motion, Stress-Free Zone of Wearable Electronics. <i>Advanced Electronic Materials</i> , 2020 , 6, 1901239	6.4	3
27	Electromigration behavior of advanced metallization on the structural effects for memory devices. <i>Microelectronic Engineering</i> , 2016 , 156, 97-102	2.5	3

26	Electrical failure and damage analysis of multi-layer metal films on flexible substrate during cyclic bending deformation 2011 ,		3
25	Effect of initial anodic dissolution current on the electrochemical migration phenomenon of Sn solder 2009 ,		3
24	Electrochemical oxidation of boron-doped nickel-iron layered double hydroxide for facile charge transfer in oxygen evolution electrocatalysts.. <i>RSC Advances</i> , 2021 , 11, 8198-8206	3.7	3
23	Stable Interconnect System for Horizontal Thermoelectric Coolers by Thermodynamic-Based Prediction. <i>Electronic Materials Letters</i> , 2019 , 15, 654-662	2.9	2
22	The characteristics of Cu-drift induced dielectric breakdown under alternating polarity bias temperature stress 2009 ,		2
21	Dendritic palladium-silver nano-structure grown by electrochemical migration method for hydrogen sensing device 2008 ,		2
20	Leakage Current Characteristic of Pre-Damaged Interlayer Dielectric During Voltage Ramp Method 2007 ,		2
19	The dielectric material dependence of stress and stress relaxation on the mechanism of stress-voiding of Cu interconnects		2
18	Dominant migration element in electrochemical migration of eutectic SnPb solder alloy		2
17	Effect of Microstructure and Dielectric Materials on Stress-Induced Damages in Damascene Cu/Low-k Interconnects. <i>Materials Research Society Symposia Proceedings</i> , 2005 , 863, B7.6-1		2
16	Measuring Thin Film Fracture Toughness Using the Indentation Sinking-in Effect and Focused Ion Beam. <i>Materials Research Society Symposia Proceedings</i> , 1999 , 594, 389		2
15	Electrical Reliability and Bending Test Methodologies of Metal Electrode on Flexible Substrate. <i>Journal of Nanoscience and Nanotechnology</i> , 2020 , 20, 470-477	1.3	2
14	Dimensionality reduction and unsupervised clustering for EELS-SI. <i>Ultramicroscopy</i> , 2021 , 231, 113314	3.1	2
13	Density Functional Theory Study of Edge-Induced Atomic-Scale Structural Phase Transitions of MoS ₂ Nanocrystals: Implications for a High-Performance Catalyst. <i>ACS Applied Nano Materials</i> , 2021 , 4, 5496-5502	5.6	2
12	Electrophoretic kinetics of concentrated TiO ₂ nanoparticle suspensions in aprotic solvent. <i>Electronic Materials Letters</i> , 2018 , 14, 79-82	2.9	2
11	Electromigration-limited reliability of advanced metallization for memory devices 2015 ,		1
10	Quantitative analysis of the size distributions and elements of the precipitates in Fe-3%Si alloy during secondary recrystallization annealing using HAADF imaging and XEDS. <i>Metals and Materials International</i> , 2009 , 15, 113-118	2.4	1
9	Electromigration-Induced Stress Interaction between Via and Polygranular Cluster. <i>Materials Research Society Symposia Proceedings</i> , 2000 , 612, 8111		1

- 8 Thermodynamically driven self-formation of Ag nanoparticles in Zn-embedded carbon nanofibers for efficient electrochemical CO reduction.. *RSC Advances*, **2021**, 11, 24702-24708 3.7 1
- 7 In-situ Study on Effects of Annealing Temperature and Mo Interlayer on Stress Relaxation Behaviors of Pure Al Films on Glass Substrates. *Materials Research Society Symposia Proceedings*, **2006**, 924, 1
- 6 Effect of Dielectric Materials on Stress-Induced Damage Modes in Damascene Cu Lines. *Materials Research Society Symposia Proceedings*, **2003**, 795, 403
- 5 Stress Relaxation during Isothermal Annealing at Elevated Temperatures in Electroplated Cu Films. *Materials Research Society Symposia Proceedings*, **2003**, 795, 328
- 4 The Simulation of Copper Drift in SiO₂ during Bias Temperature Stress (BTS) Test. *Materials Research Society Symposia Proceedings*, **2002**, 731, 8171
- 3 Fabrication of Ni Nanoparticle-Embedded Porous Carbon Nanofibers Through Selective Etching of Selectively Oxidized MgO. *Electronic Materials Letters*, **2022**, 18, 198 2.9
- 2 Grain Boundary Characteristics and Stress-induced Damage Morphologies in Sputtered and Electroplated Copper Films. *Materials Research Society Symposia Proceedings*, **2003**, 766, 231
- 1 Phase Engineering of Transition Metal Dichalcogenides via a Thermodynamically Designed Gas-Solid Reaction. *Journal of Physical Chemistry Letters*, **2021**, 12, 8430-8439 6.4