Vesa Ho Vuorinen

List of Publications by Year
in descending order

87	2,872	331670	182427
papers	citations	21 h-index	51 g-index

90	90	90	1463
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Interfacial reactions between lead-free solders and common base materials. Materials Science and Engineering Reports, 2005, 49, 1-60.	31.8	971
2	Impurity and alloying effects on interfacial reaction layers in Pb-free soldering. Materials Science and Engineering Reports, 2010, 68, 1-38.	31.8	288
3	Thermodynamics, Diffusion and the Kirkendall Effect in Solids. , 2014, , .		132
4	Interfacial reactions between lead-free SnAgCu solder and Ni(P) surface finish on printed circuit boards. IEEE Transactions on Electronics Packaging Manufacturing, 2002, 25, 162-167.	1.4	112
5	Effect of Ag, Fe, Au and Ni on the growth kinetics of Snâ€“Cu intermetallic compound layers. Microelectronics Reliability, 2009, 49, 242-247.	1.7	94
6	Formation of Intermetallic Compounds Between Liquid Sn and Various CuNi x Metallizations. Journal of Electronic Materials, 2008, 37, 792-805.	2.2	92
7	Impact of printed wiring board coatings on the reliability of lead-free chip-scale package interconnections. Journal of Materials Research, 2004, 19, 3214-3223.	2.6	89
8	Solid-State Reactions between Cu(Ni) Alloys and Sn. Journal of Electronic Materials, 2007, 36, 1355-1362.	2.2	74
9	Evolution of microstructure and failure mechanism of lead-free solder interconnections in power cycling and thermal shock tests. Microelectronics Reliability, 2007, 47, 1135-1144.	1.7	68
10	Chemically Stable Atomic-Layer-Deposited Al₂O₃ Films for Processability. ACS Omega, 2017, 2, 3390-3398.	3.5	54
11	Phase formation between lead-free Snâ€“Agâ€“Cu solder and Ni(P)âˆ•Au finishes. Journal of Applied Physics, 2006, 99, 023530.	2.5	51
12	Void formation and its impact on Cu Sn intermetallic compound formation. Journal of Alloys and Compounds, 2016, 677, 127-138.	5.5	47
13	Effect of dissolution and intermetallic formation on the reliability of FC joints. Microelectronics International, 1998, 15, 20-24.	0.6	43
14	Wafer-level SLID bonding for MEMS encapsulation. Advances in Manufacturing, 2013, 1, 226-235.	6.1	37
15	Microstructural Characterization and Mechanical Performance of Wafer-Level SLID Bonded Au-Sn and Cu-Sn Seal Rings for MEMS Encapsulation. Journal of Electronic Materials, 2015, 44, 4533-4548.	2.2	36
16	Analysis of the redeposition of AuSn4 on Ni/Au contact pads when using SnPbAg, SnAg, and SnAgCu solders. Journal of Electronic Materials, 2005, 34, 103-111.	2.2	34
17	Solder/Substrate Interfacial Reactions in the Sn-Cu-Ni Interconnection System. Journal of Electronic Materials, 2007, 36, 136-146.	2.2	34
18	Intermetallic reactions between lead-free SnAgCu solder and Ni(P)/Au surface finish on PWBs. , 0, , .		29

#	Article	IF	Citations
19	Diffusion and growth mechanism of Nb3Sn superconductor grown by bronze technique. Applied Physics Letters, 2010, 96, .	3.3	29
20	Effect of Ni content on the diffusion-controlled growth of the product phases in the Cu(Ni)â€“Sn system. Philosophical Magazine, 2016, 96, 15-30.	1.6	28
21	Effect of Ni on the Formation of ${hbox {Cu}}_{6}{hbox {Sn}}_{5}$ and ${hbox {Cu}}_{3}{hbox {Sn}}$ Intermetallics. IEEE Transactions on Electronics Packaging Manufacturing, 2007, 30, 293-298.	1.4	26
22	Combined Thermodynamic-Kinetic Analysis of the Interfacial Reactions between Ni Metallization and Various Lead-Free Solders. Materials, 2009, 2, 1796-1834.	2.9	23
23	Thermodynamic reassessment of Auâ€“Niâ€“Sn ternary system. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2013, 43, 61-70.	1.6	22
24	Structural and chemical analysis of annealed plasma-enhanced atomic layer deposition aluminum nitride films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2016, 34, .	2.1	22
25	Determination of diffusion parameters and activation energy of diffusion in V3Si phase with A15 crystal structure. Scripta Materialia, 2009, 60, 377-380.	5.2	21
26	Solid-state reaction of electroplated thin film Au/Sn couple at low temperatures. Journal of Alloys and Compounds, 2015, 619, 325-331.	5.5	21
27	Analyses of interfacial reactions at different levels of interconnection. Materials Science in Semiconductor Processing, 2004, 7, 307-317.	4.0	20
28	Thermodynamic modeling of Auâ€“Ceâ€“Sn ternary system. Calphad: Computer Coupling of Phase Diagrams and Thermochemistry, 2013, 42, 38-50.	1.6	20
29	Thermodynamic reassessment of Auâ€“Cuâ€“Sn ternary system. Journal of Alloys and Compounds, 2014, 588, 449-460.	5.5	19
30	Analysis of UHMWPE wear particles produced in the simulation of hip and knee wear mechanisms with the RandomPOD system. Biotribology, 2015, 1-2, 30-34.	1.9	18
31	Phase relations in the Snâ€Agâ€Sb system at 220Â°C. Zeitschrift Fur Elektrotechnik Und Elektrochemie, 1998, 102, 1321-1325.	0.9	16
32	Effect of Ti on the interfacial reaction between Sn and Cu. Journal of Materials Science: Materials in Electronics, 2012, 23, 68-74.	2.2	16
33	Microstructural Evolution and Mechanical Properties of Au-20wt.%Sn	Ni Interconnection. Journal of Electronic Materials, 2016, 45, 566-575.	2.2	15
34	Effect of Constant and Cyclic Current Stressing on the Evolution of Intermetallic Compound Layers. Journal of Electronic Materials, 2011, 40, 1517-1526.	2.2	14
35	Blistering mechanisms of atomic-layer-deposited AlN and Al2O3 films. Applied Physics Letters, 2017, 111, .	3.3	14
36	Inorganic particulate matter in the lung tissue of idiopathic pulmonary fibrosis patients reflects population density and fine particle levels. Annals of Diagnostic Pathology, 2019, 40, 136-142.	1.3	14

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37	The Role of Ultrafine Crystalline Behavior and Trace Impurities in Copper on Intermetallic Void Formation. ACS Applied Electronic Materials, 2019, 1, 88-95.	4.3	14
38	Wafer-Level AuSn/Pt Solidâ€“Liquid Interdiffusion Bonding. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2018, 8, 169-176.	2.5	13
39	Effect of Ni on the Formation of Cu6Sn5 and Cu3Sn Intermetallics. , 0, , .		12
40	Microstructural Evolution and Mechanical Properties in (AuSn)eut-Cu Interconnections. Journal of Electronic Materials, 2016, 45, 5478-5486.	2.2	12
41	Wafer Level Solid Liquid Interdiffusion Bonding: Formation and Evolution of Microstructures. Journal of Electronic Materials, 2021, 50, 818-824.	2.2	11
42	A humidity-induced novel failure mechanism in power semiconductor diodes. Microelectronics Reliability, 2021, 123, 114207.	1.7	11
43	Diffusion and Growth of the Î¼ Phase (Ni6Nb7) in the Ni-Nb System. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2011, 42, 1727-1731.	2.2	9
44	Reliability performance of Au-Sn and Cu-Sn wafer level SLID bonds for MEMS. , 2014, , .		7
45	Thermodynamics, Phases, and Phase Diagrams. , 2014, , 1-86.		7
46	Optimization of contact metallizations for reliable wafer level AuSn bonds. Microelectronics Reliability, 2016, 64, 676-680.	1.7	7
47	Thermodynamic reassessment of the Au-Pt-Sn system and microstructural evolution of the (AuSn)eut-Pt interconnection. Journal of Alloys and Compounds, 2016, 688, 388-398.	5.5	7
48	Investigation of the microstructural evolution and detachment of Co in contact with Cuâ€“Sn electroplated silicon chips during solid-liquid interdiffusion bonding. Journal of Alloys and Compounds, 2022, 890, 161852.	5.5	7
49	Interconnections based on Bi-coated SnAg solder balls. IEEE Transactions on Advanced Packaging, 2001, 24, 515-520.	1.6	6
50	Effect of Isothermal Aging and Electromigration on the Microstructural Evolution of Solder Interconnections During Thermomechanical Loading. Journal of Electronic Materials, 2012, 41, 3179-3195.	2.2	6
51	Mechanical Analysis of Ultrasound-Activated Pins and Resorbable Screws. Journal of Craniofacial Surgery, 2015, 26, 1234-1237.	0.7	6
52	Gigahertz scanning acoustic microscopy analysis of voids in Cu-Sn micro-connects. Applied Physics Letters, 2017, 110, .	3.3	6
53	Interfacial void segregation of Cl in Cu-Sn micro-connects. Electronic Materials Letters, 2017, 13, 307-312.	2.2	6
54	Vertical cracking of Cu-Sn solid-liquid interdiffusion bond under thermal shock test. Materials Today: Proceedings, 2017, 4, 7093-7100.	1.8	6

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55	Effect of CoCr Counterface Roughness on the Wear of UHMWPE in the Noncyclic RandomPOD Simulation. Journal of Tribology, 2017, 139, .	1.9	6
56	The effect of platinum contact metallization on Cu/Sn bonding. Journal of Materials Science: Materials in Electronics, 2018, 29, 15212-15222.	2.2	6
57	In-situ annealing characterization of atomic-layer-deposited Al2O3 in N2, H2 and vacuum atmospheres. Thin Solid Films, 2019, 682, 147-155.	1.8	6
58	MEMS reliability. , 2020, , 851-876.		6
59	Effect of isothermal annealing and electromigration pre-treatments on the reliability of solder interconnections under vibration loading. Journal of Materials Science: Materials in Electronics, 2013, 24, 644-653.	2.2	5
60	Void formation in Cu-Sn SLID bonding for MEMS. , 2014, , .		4
61	Phase Evolution in the AuCu/Sn System by Solid-State Reactive Diffusion. Journal of Electronic Materials, 2014, 43, 3357-3371.	2.2	4
62	Metallic Alloy Seal Bonding. , 2015, , 626-639.		4
63	Finite Element Simulation of Solidâ€“Liquid Interdiffusion Bonding Process: Understanding Process-Dependent Thermomechanical Stress. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2022, 12, 847-856.	2.5	4
64	Development of Interdiffusion Zone in Different Systems. , 2014, , 141-166.		3
65	MEMS Reliability. , 2015, , 744-763.		3
66	XRD and ToF-SIMS study of intermetallic void formation in Cu-Sn micro-connects. Microelectronics Reliability, 2017, 76-77, 390-394.	1.7	3
67	Process Integration and Reliability of Wafer Level SLID Bonding for Poly-Si TSV capped MEMS. , 2018, , .		3
68	Demonstrating 170 Â°C Low-Temperature Cuâ€“Inâ€“Sn Wafer-Level Solid Liquid Interdiffusion Bonding. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2022, 12, 446-453.	2.5	3
69	Study of Cu-Sn-In system for low temperature, wafer level solid liquid inter-diffusion bonding. , 2020, , .		3
70	Void formation in Cu-Sn micro-connects. , 2015, , .		2
71	Reliability of Electronic Assemblies Under Mechanical Shock Loading. , 2011, , 197-225.		2
72	Analysis of microstructural evolution in SLID-bonding used for hermetic encapsulation of MEMS devices. , 2012, , .		1

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73	Interfacial Reactions Between ZnAl(Ge) Solders on Cu and Ni Substrates. Journal of Electronic Materials, 2017, 46, 2323-2333.	2.2	1
74	Thermodynamic-Kinetic Method on Microstructural Evolutions in Electronics. , 2017, , 101-147.		1
75	Introduction to Thermodynamic-Kinetic Method. Microsystems, 2012, , 45-100.	0.3	1
76	Metallic alloy seal bonding. , 2020, , 609-625.		1
77	(Invited) Low Temperature Wafer-Level Cu-in-Sn Solid-Liquid Interdiffusion Bonding. ECS Meeting Abstracts, 2020, MA2020-02, 1644-1644.	0.0	1
78	Understanding materials compatibility issues in electronics packaging. , 2009, , .		0
79	On the role of electromigration in power cycling tests. , 2010, , .		0
80	Study on the Growth of Nb₃Sn Superconductor in Cu(Sn)/Nb Diffusion Couple. Defect and Diffusion Forum, 2010, 297-301, 467-471.	0.4	0
81	Injection moulded lens array for high power LED modules. , 2010, , .		0
82	Interfacial reactions between SnAg1.0Ti and Ni metallization. Journal of Materials Science: Materials in Electronics, 2012, 23, 2030-2034.	2.2	0
83	Finite element modeling for reliability assessment of solder interconnections in a power transistor. , 2012, , .		0
84	Improved methods for development of high reliability electronics. , 2014, , .		0
85	Comparative study on radio frequency and reliability performance of electronically conductive adhesives. , 2016, , .		0
86	Key parameters influencing Cu-Sn interfacial void formation. , 2016, , .		0
87	Evolution of Different Types of Interfacial Structures. Microsystems, 2012, , 135-211.	0.3	0