

# Vesa Ho Vuorinen

## List of Publications by Year in descending order

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87  
papers

2,872  
citations

331670

21  
h-index

182427

51  
g-index

90  
all docs

90  
docs citations

90  
times ranked

1463  
citing authors

#	ARTICLE	IF	CITATIONS
1	Demonstrating 170 Å°C Low-Temperature Cu–In–Sn Wafer-Level Solid Liquid Interdiffusion Bonding. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2022, 12, 446-453.	2.5	3
2	Investigation of the microstructural evolution and detachment of Co in contact with Cu–Sn electroplated silicon chips during solid-liquid interdiffusion bonding. Journal of Alloys and Compounds, 2022, 890, 161852.	5.5	7
3	Finite Element Simulation of Solid–Liquid Interdiffusion Bonding Process: Understanding Process-Dependent Thermomechanical Stress. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2022, 12, 847-856.	2.5	4
4	Wafer Level Solid Liquid Interdiffusion Bonding: Formation and Evolution of Microstructures. Journal of Electronic Materials, 2021, 50, 818-824.	2.2	11
5	A humidity-induced novel failure mechanism in power semiconductor diodes. Microelectronics Reliability, 2021, 123, 114207.	1.7	11
6	MEMS reliability. , 2020, , 851-876.		6
7	Metallic alloy seal bonding. , 2020, , 609-625.		1
8	Study of Cu-Sn-In system for low temperature, wafer level solid liquid inter-diffusion bonding. , 2020, , .		3
9	(Invited) Low Temperature Wafer-Level Cu-in-Sn Solid-Liquid Interdiffusion Bonding. ECS Meeting Abstracts, 2020, MA2020-02, 1644-1644.	0.0	1
10	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
11	In-situ annealing characterization of atomic-layer-deposited Al <sub>2</sub> O <sub>3</sub> in N <sub>2</sub> , H <sub>2</sub> and vacuum atmospheres. Thin Solid Films, 2019, 682, 147-155.	1.8	6
12	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
13	Wafer-Level AuSn/Pt Solid–Liquid Interdiffusion Bonding. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2018, 8, 169-176.	2.5	13
14	Process Integration and Reliability of Wafer Level SLID Bonding for Poly-Si TSV capped MEMS. , 2018, , .		3
15	The effect of platinum contact metallization on Cu/Sn bonding. Journal of Materials Science: Materials in Electronics, 2018, 29, 15212-15222.	2.2	6
16	Interfacial Reactions Between ZnAl(Ge) Solders on Cu and Ni Substrates. Journal of Electronic Materials, 2017, 46, 2323-2333.	2.2	1
17	Gigahertz scanning acoustic microscopy analysis of voids in Cu-Sn micro-connects. Applied Physics Letters, 2017, 110, .	3.3	6
18	Interfacial void segregation of Cl in Cu-Sn micro-connects. Electronic Materials Letters, 2017, 13, 307-312.	2.2	6

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19	Vertical cracking of Cu-Sn solid-liquid interdiffusion bond under thermal shock test. Materials Today: Proceedings, 2017, 4, 7093-7100.	1.8	6
20	Blistering mechanisms of atomic-layer-deposited AlN and Al <sub>2</sub> O <sub>3</sub> films. Applied Physics Letters, 2017, 111, .	3.3	14
21	Thermodynamic-Kinetic Method on Microstructural Evolutions in Electronics. , 2017, , 101-147.		1
22	Chemically Stable Atomic-Layer-Deposited Al <sub>2</sub> O <sub>3</sub> Films for Processability. ACS Omega, 2017, 2, 3390-3398.	3.5	54
23	XRD and ToF-SIMS study of intermetallic void formation in Cu-Sn micro-connects. Microelectronics Reliability, 2017, 76-77, 390-394.	1.7	3
24	Effect of CoCr Counterface Roughness on the Wear of UHMWPE in the Noncyclic RandomPOD Simulation. Journal of Tribology, 2017, 139, .	1.9	6
25	Comparative study on radio frequency and reliability performance of electronically conductive adhesives. , 2016, , .		0
26	Microstructural Evolution and Mechanical Properties in (AuSn) <sub>eut</sub> -Cu Interconnections. Journal of Electronic Materials, 2016, 45, 5478-5486.	2.2	12
27	Key parameters influencing Cu-Sn interfacial void formation. , 2016, , .		0
28	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
29	Void formation and its impact on Cu Sn intermetallic compound formation. Journal of Alloys and Compounds, 2016, 677, 127-138.	5.5	47
30	Optimization of contact metallizations for reliable wafer level AuSn bonds. Microelectronics Reliability, 2016, 64, 676-680.	1.7	7
31	Thermodynamic reassessment of the Au-Pt-Sn system and microstructural evolution of the (AuSn) <sub>eut</sub> -Pt interconnection. Journal of Alloys and Compounds, 2016, 688, 388-398.	5.5	7
32	Microstructural Evolution and Mechanical Properties of Au-20wt.%Sn   Ni Interconnection. Journal of Electronic Materials, 2016, 45, 566-575.	2.2	15
33	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
34	Mechanical Analysis of Ultrasound-Activated Pins and Resorbable Screws. Journal of Craniofacial Surgery, 2015, 26, 1234-1237.	0.7	6
35	Metallic Alloy Seal Bonding. , 2015, , 626-639.		4
36	MEMS Reliability. , 2015, , 744-763.		3

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37	Analysis of UHMWPE wear particles produced in the simulation of hip and knee wear mechanisms with the RandomPOD system. <i>Biotribology</i> , 2015, 1-2, 30-34.	1.9	18
38	Microstructural Characterization and Mechanical Performance of Wafer-Level SLID Bonded Au-Sn and Cu-Sn Seal Rings for MEMS Encapsulation. <i>Journal of Electronic Materials</i> , 2015, 44, 4533-4548.	2.2	36
39	Void formation in Cu-Sn micro-connects. , 2015, , .		2
40	Solid-state reaction of electroplated thin film Au/Sn couple at low temperatures. <i>Journal of Alloys and Compounds</i> , 2015, 619, 325-331.	5.5	21
41	Reliability performance of Au-Sn and Cu-Sn wafer level SLID bonds for MEMS. , 2014, , .		7
42	Void formation in Cu-Sn SLID bonding for MEMS. , 2014, , .		4
43	Improved methods for development of high reliability electronics. , 2014, , .		0
44	Thermodynamics, Diffusion and the Kirkendall Effect in Solids. , 2014, , .		132
45	Thermodynamic reassessment of Au-Cu-Sn ternary system. <i>Journal of Alloys and Compounds</i> , 2014, 588, 449-460.	5.5	19
46	Thermodynamics, Phases, and Phase Diagrams. , 2014, , 1-86.		7
47	Development of Interdiffusion Zone in Different Systems. , 2014, , 141-166.		3
48	Phase Evolution in the AuCu/Sn System by Solid-State Reactive Diffusion. <i>Journal of Electronic Materials</i> , 2014, 43, 3357-3371.	2.2	4
49	Thermodynamic modeling of Au-Ce-Sn ternary system. <i>Calphad: Computer Coupling of Phase Diagrams and Thermochemistry</i> , 2013, 42, 38-50.	1.6	20
50	Thermodynamic reassessment of Au-Ni-Sn ternary system. <i>Calphad: Computer Coupling of Phase Diagrams and Thermochemistry</i> , 2013, 43, 61-70.	1.6	22
51	Wafer-level SLID bonding for MEMS encapsulation. <i>Advances in Manufacturing</i> , 2013, 1, 226-235.	6.1	37
52	Effect of isothermal annealing and electromigration pre-treatments on the reliability of solder interconnections under vibration loading. <i>Journal of Materials Science: Materials in Electronics</i> , 2013, 24, 644-653.	2.2	5
53	Interfacial reactions between SnAg1.0Ti and Ni metallization. <i>Journal of Materials Science: Materials in Electronics</i> , 2012, 23, 2030-2034.	2.2	0
54	Finite element modeling for reliability assessment of solder interconnections in a power transistor. , 2012, , .		0

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55	Analysis of microstructural evolution in SLID-bonding used for hermetic encapsulation of MEMS devices. , 2012, , .		1
56	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
57	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
58	Evolution of Different Types of Interfacial Structures. Microsystems, 2012, , 135-211.	0.3	0
59	Introduction to Thermodynamic-Kinetic Method. Microsystems, 2012, , 45-100.	0.3	1
60	Diffusion and Growth of the $\epsilon$ Phase (Ni <sub>6</sub> Nb <sub>7</sub> ) in the Ni-Nb System. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2011, 42, 1727-1731.	2.2	9
61	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
62	Reliability of Electronic Assemblies Under Mechanical Shock Loading. , 2011, , 197-225.		2
63	Impurity and alloying effects on interfacial reaction layers in Pb-free soldering. Materials Science and Engineering Reports, 2010, 68, 1-38.	31.8	288
64	On the role of electromigration in power cycling tests. , 2010, , .		0
65	Study on the Growth of Nb <sub>3</sub> Sn Superconductor in Cu(Sn)/Nb Diffusion Couple. Defect and Diffusion Forum, 2010, 297-301, 467-471.	0.4	0
66	Diffusion and growth mechanism of Nb <sub>3</sub> Sn superconductor grown by bronze technique. Applied Physics Letters, 2010, 96, .	3.3	29
67	Injection moulded lens array for high power LED modules. , 2010, , .		0
68	Combined Thermodynamic-Kinetic Analysis of the Interfacial Reactions between Ni Metallization and Various Lead-Free Solders. Materials, 2009, 2, 1796-1834.	2.9	23
69	Determination of diffusion parameters and activation energy of diffusion in V <sub>3</sub> Si phase with A15 crystal structure. Scripta Materialia, 2009, 60, 377-380.	5.2	21
70	Effect of Ag, Fe, Au and Ni on the growth kinetics of Sn $\epsilon$ -Cu intermetallic compound layers. Microelectronics Reliability, 2009, 49, 242-247.	1.7	94
71	Understanding materials compatibility issues in electronics packaging. , 2009, , .		0
72	Formation of Intermetallic Compounds Between Liquid Sn and Various CuNi <sub>x</sub> Metallizations. Journal of Electronic Materials, 2008, 37, 792-805.	2.2	92

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73	Effect of Ni on the Formation of $\text{Cu}_6\text{Sn}_5$ and $\text{Cu}_3\text{Sn}$ Intermetallics. IEEE Transactions on Electronics Packaging Manufacturing, 2007, 30, 293-298.	1.4	26
74	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
75	Solder/Substrate Interfacial Reactions in the Sn-Cu-Ni Interconnection System. Journal of Electronic Materials, 2007, 36, 136-146.	2.2	34
76	Solid-State Reactions between Cu(Ni) Alloys and Sn. Journal of Electronic Materials, 2007, 36, 1355-1362.	2.2	74
77	Phase formation between lead-free Sn-Ag-Cu solder and Ni(P)-Au finishes. Journal of Applied Physics, 2006, 99, 023530.	2.5	51
78	Interfacial reactions between lead-free solders and common base materials. Materials Science and Engineering Reports, 2005, 49, 1-60.	31.8	971
79	Analysis of the redeposition of AuSn <sub>4</sub> on Ni/Au contact pads when using SnPbAg, SnAg, and SnAgCu solders. Journal of Electronic Materials, 2005, 34, 103-111.	2.2	34
80	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
81	Analyses of interfacial reactions at different levels of interconnection. Materials Science in Semiconductor Processing, 2004, 7, 307-317.	4.0	20
82	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
83	Interconnections based on Bi-coated SnAg solder balls. IEEE Transactions on Advanced Packaging, 2001, 24, 515-520.	1.6	6
84	Phase relations in the Sn-Ag-Sb system at 220°C. Zeitschrift Fur Elektrotechnik Und Elektrochemie, 1998, 102, 1321-1325.	0.9	16
85	Effect of dissolution and intermetallic formation on the reliability of FC joints. Microelectronics International, 1998, 15, 20-24.	0.6	43
86	Intermetallic reactions between lead-free SnAgCu solder and Ni(P)/Au surface finish on PWBs. , 0, , .		29
87	Effect of Ni on the Formation of $\text{Cu}_6\text{Sn}_5$ and $\text{Cu}_3\text{Sn}$ Intermetallics. , 0, , .		12