

Chuan Seng Tan

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

267
papers

2,808
citations

26
h-index

40
g-index

339
ext. papers

3,526
ext. citations

2.9
avg, IF

5.33
L-index

#	Paper	IF	Citations
267	Morphology and Bond Strength of Copper Wafer Bonding. <i>Electrochemical and Solid-State Letters</i> , 2004 , 7, G14		116
266	Cu/Cu diffusion bonding enhancement at low temperature by surface passivation using self-assembled monolayer of alkane-thiol. <i>Applied Physics Letters</i> , 2009 , 95, 192108	3.4	101
265	Technology, performance, and computer-aided design of three-dimensional integrated circuits 2004 ,		95
264	Low-threshold optically pumped lasing in highly strained germanium nanowires. <i>Nature Communications</i> , 2017 , 8, 1845	17.4	80
263	Microstructure evolution and abnormal grain growth during copper wafer bonding. <i>Applied Physics Letters</i> , 2002 , 81, 3774-3776	3.4	70
262	Silicon Multilayer Stacking Based on Copper Wafer Bonding. <i>Electrochemical and Solid-State Letters</i> , 2005 , 8, G147		60
261	Bonding parameters of blanket copper wafer bonding. <i>Journal of Electronic Materials</i> , 2006 , 35, 230-234	1.9	49
260	Copper bonded layers analysis and effects of copper surface conditions on bonding quality for three-dimensional integration. <i>Journal of Electronic Materials</i> , 2005 , 34, 1464-1467	1.9	49
259	Growth and characterization of germanium epitaxial film on silicon (001) using reduced pressure chemical vapor deposition. <i>Thin Solid Films</i> , 2012 , 520, 2711-2716	2.2	47
258	Germanium-on-silicon nitride waveguides for mid-infrared integrated photonics. <i>Applied Physics Letters</i> , 2016 , 109, 241101	3.4	47
257	Effects of nanowire texturing on the performance of Si/organic hybrid solar cells fabricated with a 2.2 μm thin-film Si absorber. <i>Applied Physics Letters</i> , 2012 , 100, 103104	3.4	42
256	Low-temperature thermal oxide to plasma-enhanced chemical vapor deposition oxide wafer bonding for thin-film transfer application. <i>Applied Physics Letters</i> , 2003 , 82, 2649-2651	3.4	41
255	Reduction of threading dislocation density in Ge/Si using a heavily As-doped Ge seed layer. <i>AIP Advances</i> , 2016 , 6, 025028	1.5	41
254	Fabrication and characterization of germanium-on-insulator through epitaxy, bonding, and layer transfer. <i>Journal of Applied Physics</i> , 2014 , 116, 103506	2.5	40
253	Growth and characterization of germanium epitaxial film on silicon (001) with germane precursor in metal organic chemical vapour deposition (MOCVD) chamber. <i>AIP Advances</i> , 2013 , 3, 092123	1.5	39
252	High-efficiency GeSn/Ge multiple-quantum-well photodetectors with photon-trapping microstructures operating at 2 μm . <i>Optics Express</i> , 2020 , 28, 10280-10293	3.3	39
251	Achieving Stable Through-Silicon Via (TSV) Capacitance with Oxide Fixed Charge. <i>IEEE Electron Device Letters</i> , 2011 , 32, 668-670	4.4	38

250	High-efficiency normal-incidence vertical p-i-n photodetectors on a germanium-on-insulator platform. <i>Photonics Research</i> , 2017 , 5, 702	6	36
249	Defects reduction of Ge epitaxial film in a germanium-on-insulator wafer by annealing in oxygen ambient. <i>APL Materials</i> , 2015 , 3, 016102	5.7	36
248	Observation of interfacial void formation in bonded copper layers. <i>Applied Physics Letters</i> , 2005 , 87, 201909	3.09	34
247	Temperature and duration effects on microstructure evolution during copper wafer bonding. <i>Journal of Electronic Materials</i> , 2003 , 32, 1371-1374	1.9	32
246	Abnormal contact resistance reduction of bonded copper interconnects in three-dimensional integration during current stressing. <i>Applied Physics Letters</i> , 2005 , 86, 011903	3.4	31
245	Reliable 3-D Clock-Tree Synthesis Considering Nonlinear Capacitive TSV Model With Electrical/Thermal/Mechanical Coupling. <i>IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems</i> , 2013 , 32, 1734-1747	2.5	28
244	Overview of Wafer-Level 3D ICs. <i>Integrated Circuits and Systems</i> , 2008 , 1-11	0.2	28
243	Effects of surface treatment on the bonding quality of wafer-level Cu-to-Cu thermo-compression bonding for 3D integration. <i>Journal of Micromechanics and Microengineering</i> , 2013 , 23, 045025	2	27
242	Integration of GaAs, GaN, and Si-CMOS on a common 200 mm Si substrate through multilayer transfer process. <i>Applied Physics Express</i> , 2016 , 9, 086501	2.4	27
241	Condition Monitoring of DC-Link Capacitors Using Goertzel Algorithm for Failure Precursor Parameter and Temperature Estimation. <i>IEEE Transactions on Power Electronics</i> , 2020 , 35, 6386-6396	7.2	26
240	The role of AsH ₃ partial pressure on anti-phase boundary in GaAs-on-Ge grown by MOCVD □ Application to a 200 mm GaAs virtual substrate. <i>Journal of Crystal Growth</i> , 2015 , 421, 58-65	1.6	25
239	GeSn lateral p-i-n photodetector on insulating substrate. <i>Optics Express</i> , 2018 , 26, 17312-17321	3.3	25
238	Three-Dimensional Wafer Stacking Using Cu/Cu Bonding for Simultaneous Formation of Electrical, Mechanical, and Hermetic Bonds. <i>IEEE Transactions on Device and Materials Reliability</i> , 2012 , 12, 194-200	1.6	25
237	GeSn-on-insulator substrate formed by direct wafer bonding. <i>Applied Physics Letters</i> , 2016 , 109, 022106	3.4	25
236	Novel three-dimensional carbon nanotube networks as high performance thermal interface materials. <i>Carbon</i> , 2018 , 132, 359-369	10.4	23
235	. <i>IEEE Electron Device Letters</i> , 2012 , 33, 1747-1749	4.4	23
234	Online Condition Monitoring System for DC-Link Capacitor in Industrial Power Converters. <i>IEEE Transactions on Industry Applications</i> , 2018 , 54, 4775-4785	4.3	23
233	Single-mode surface-emitting concentric-circular-grating terahertz quantum cascade lasers. <i>Applied Physics Letters</i> , 2013 , 102, 031119	3.4	22

232	. <i>IEEE Transactions on Electron Devices</i> , 2011 , 58, 2500-2506	2.9	22
231	Enhanced copper micro/nano-particle mixed paste sintered at low temperature for 3D interconnects. <i>Applied Physics Letters</i> , 2016 , 108, 263103	3.4	22
230	Fabrication and characterization of single junction GaAs solar cells on Si with As-doped Ge buffer. <i>Solar Energy Materials and Solar Cells</i> , 2017 , 172, 140-144	6.4	21
229	Process development and bonding quality investigations of silicon layer stacking based on copper wafer bonding. <i>Applied Physics Letters</i> , 2005 , 87, 031909	3.4	21
228	Dark current analysis of germanium-on-insulator vertical p-i-n photodetectors with varying threading dislocation density. <i>Journal of Applied Physics</i> , 2020 , 127, 203105	2.5	20
227	Comparative Studies of the Growth and Characterization of Germanium Epitaxial Film on Silicon (001) with 0° and 6° Offcut. <i>Journal of Electronic Materials</i> , 2013 , 42, 1133-1139	1.9	20
226	Low Temperature Cu-to-Cu Bonding for Wafer-Level Hermetic Encapsulation of 3D Microsystems. <i>Electrochemical and Solid-State Letters</i> , 2011 , 14, H470		20
225	Low-Temperature Direct CVD Oxides to Thermal Oxide Wafer Bonding in Silicon Layer Transfer. <i>Electrochemical and Solid-State Letters</i> , 2005 , 8, G1		20
224	Germanium-Tin (GeSn) P-Channel Fin Field-Effect Transistor Fabricated on a Novel GeSn-on-Insulator Substrate. <i>IEEE Transactions on Electron Devices</i> , 2018 , 65, 3754-3761	2.9	19
223	Optimization and thermal characterization of uniform silicon micropillar based evaporators. <i>International Journal of Heat and Mass Transfer</i> , 2018 , 127, 51-60	4.9	19
222	Low temperature wafer-level bonding for hermetic packaging of 3D microsystems. <i>Journal of Micromechanics and Microengineering</i> , 2011 , 21, 075006	2	19
221	Thin Film Silicon Nanowire/PEDOT:PSS Hybrid Solar Cells with Surface Treatment. <i>Nanoscale Research Letters</i> , 2016 , 11, 311	5	18
220	Force-induced optical nonlinearity and Kerr-like coefficient in opto-mechanical ring resonators. <i>Optics Express</i> , 2012 , 20, 18005-15	3.3	18
219	Integrating GeSn photodiode on a 200 mm Ge-on-insulator photonics platform with Ge CMOS devices for advanced OEIC operating at 2 μ m band. <i>Optics Express</i> , 2019 , 27, 26924-26939	3.3	18
218	The effect of forming gas anneal on the oxygen content in bonded copper layer. <i>Journal of Electronic Materials</i> , 2005 , 34, 1598-1602	1.9	17
217	Spiral Waveguides on Germanium-on-Silicon Nitride Platform for Mid-IR Sensing Applications. <i>IEEE Photonics Journal</i> , 2018 , 10, 1-7	1.8	17
216	Monolithic Integration of Si-CMOS and III-V-on-Si Through Direct Wafer Bonding Process. <i>IEEE Journal of the Electron Devices Society</i> , 2018 , 6, 571-578	2.3	16
215	High-performance GeSn photodetector and fin field-effect transistor (FinFET) on an advanced GeSn-on-insulator platform. <i>Optics Express</i> , 2018 , 26, 10305-10314	3.3	16

214	Carrierless design for handling and processing of ultrathin wafers 2010 ,		16
213	Graphene/NT hetero-structure for next generation interconnects. <i>RSC Advances</i> , 2016 , 6, 53054-53061	3.7	15
212	The first GeSn FinFET on a novel GeSnOI substrate achieving lowest S of 79 mV/decade and record high G _m , int of 807 S/μm for GeSn P-FETs 2017 ,		15
211	The GaAs/GaAs/Si solar cell Towards current matching in an integrated two terminal tandem. <i>Solar Energy Materials and Solar Cells</i> , 2017 , 160, 94-100	6.4	15
210	Enhancing Cu-Cu Diffusion Bonding at Low Temperature Via Application of Self-assembled Monolayer Passivation. <i>Journal of the Electrochemical Society</i> , 2011 , 158, H1057	3.9	15
209	Color tunable hybrid AC powder electroluminescent devices with organic fluorescent materials. <i>Optical Materials Express</i> , 2016 , 6, 2879	2.6	15
208	Low temperature bump-less Cu-Cu bonding enhancement with self assembled monolayer (SAM) passivation for 3-D integration 2010 ,		14
207	Metal-Semiconductor-Metal GeSn Photodetectors on Silicon for Short-Wave Infrared Applications. <i>Micromachines</i> , 2020 , 11,	3.3	14
206	Band structure of Ge _{1-x} Sn _x alloy: a full-zone 30-band k p model. <i>New Journal of Physics</i> , 2019 , 21, 073037	2.9	13
205	Thermal Characteristics of InP-Al ₂ O ₃ /Si Low Temperature Heterogeneous Direct Bonding for Photonic Device Integration. <i>ECS Journal of Solid State Science and Technology</i> , 2013 , 2, N169-N174	2	13
204	High speed and ultra-low dark current Ge vertical p-i-n photodetectors on an oxygen-annealed Ge-on-insulator platform with GeO surface passivation. <i>Optics Express</i> , 2020 , 28, 23978-23990	3.3	13
203	Modulation of light absorption in flexible GeSn metal-semiconductor-metal photodetectors by mechanical bending. <i>Journal of Materials Chemistry C</i> , 2020 , 8, 13557-13562	7.1	13
202	High Performance Flexible Visible-Blind Ultraviolet Photodetectors with Two-Dimensional Electron Gas Based on Unconventional Release Strategy. <i>ACS Nano</i> , 2021 , 15, 8386-8396	16.7	13
201	Integration of III-V materials and Si-CMOS through double layer transfer process. <i>Japanese Journal of Applied Physics</i> , 2015 , 54, 030209	1.4	12
200	(Invited) Cu Surface Passivation with Self-Assembled Monolayer (SAM) and Its Application for Wafer Bonding at Moderately Low Temperature. <i>ECS Transactions</i> , 2013 , 50, 115-123	1	12
199	Low Temperature PE-TEOS Oxide Bonding Assisted by a Thin Layer of High-κ Dielectric. <i>Electrochemical and Solid-State Letters</i> , 2009 , 12, H408		12
198	Wafer-level hermetic packaging of 3D microsystems with low-temperature Cu-to-Cu thermo-compression bonding and its reliability. <i>Journal of Micromechanics and Microengineering</i> , 2012 , 22, 105004	2	12
197	Photo detection and modulation from 1,550 to 2,000 nm realized by a GeSn/Ge multiple-quantum-well photodiode on a 300-mm Si substrate. <i>Optics Express</i> , 2020 , 28, 34772-34786	3.3	12

196	(Invited) SiGe and III-V Materials and Devices: New HEMT and LED Elements in 0.18-Micron CMOS Process and Design. <i>ECS Transactions</i> , 2016 , 75, 439-446	1	12
195	. <i>IEEE Electron Device Letters</i> , 2012 , 33, 875-877	4.4	11
194	Thermal reliability of fine pitch Cu-Cu bonding with self assembled monolayer (SAM) passivation for Wafer-on-Wafer 3D-Stacking 2011 ,		11
193	Wafer-on-Wafer Stacking by Bumpless Cu-Cu Bonding and Its Electrical Characteristics. <i>IEEE Electron Device Letters</i> , 2011 , 32, 943-945	4.4	11
192	Microelectronics Thin Film Handling and Transfer Using Low-Temperature Wafer Bonding. <i>Electrochemical and Solid-State Letters</i> , 2005 , 8, G362		11
191	Suppression of interfacial voids formation during silane (SiH ₄)-based silicon oxide bonding with a thin silicon nitride capping layer. <i>Journal of Applied Physics</i> , 2018 , 123, 015302	2.5	10
190	Enhanced Si-Ge interdiffusion in high phosphorus-doped germanium on silicon. <i>Semiconductor Science and Technology</i> , 2015 , 30, 105008	1.8	10
189	Hetero-epitaxy of high quality germanium film on silicon substrate for optoelectronic integrated circuit applications. <i>Journal of Materials Research</i> , 2017 , 32, 4025-4040	2.5	10
188	Opto-impedance spectroscopy and equivalent circuit analyses of AC powder electroluminescent devices. <i>Optics Express</i> , 2017 , 25, A454-A466	3.3	10
187	PE-TEOS Wafer Bonding Enhancement at Low Temperature with a High-Dielectric Capping Layer of Al ₂ O ₃ . <i>Journal of the Electrochemical Society</i> , 2011 , 158, H137	3.9	10
186	Achieving low temperature Cu to Cu diffusion bonding with self assembly monolayer (SAM) passivation 2009 ,		10
185	Study of Hydrophilic Si Direct Bonding with Ultraviolet Ozone Activation for 3D Integration. <i>ECS Journal of Solid State Science and Technology</i> , 2012 , 1, P291-P296	2	10
184	Resonant-cavity-enhanced responsivity in germanium-on-insulator photodetectors. <i>Optics Express</i> , 2020 , 28, 23739-23747	3.3	10
183	Implementation of carbon nanotube bundles in sub-5 micron diameter through-silicon-via structures for three-dimensionally stacked integrated circuits. <i>Materials Today Communications</i> , 2015 , 2, e16-e25	2.5	9
182	Impacts of doping on epitaxial germanium thin film quality and Si-Ge interdiffusion. <i>Optical Materials Express</i> , 2018 , 8, 1117	2.6	9
181	Thermal design optimization of evaporator micropillar wicks. <i>International Journal of Thermal Sciences</i> , 2018 , 134, 179-187	4.1	9
180	Homogeneous Chip to Wafer Bonding of InP-Al ₂ O ₃ -Si Using UV/O ₃ Activation. <i>ECS Journal of Solid State Science and Technology</i> , 2014 , 3, P43-P47	2	9
179	Novel development of the micro-tensile test at elevated temperature using a test structure with integrated micro-heater. <i>Journal of Micromechanics and Microengineering</i> , 2012 , 22, 085015	2	9

178	Thermal-reliable 3D clock-tree synthesis considering nonlinear electrical-thermal-coupled TSV model 2013 ,		9
177	Low Temperature Wafer Bonding of Low- Γ Carbon-Doped Oxide for Application in 3D Integration. <i>Electrochemical and Solid-State Letters</i> , 2010 , 13, H27		9
176	Void Density Reduction at the Cu/Cu Bonding Interface by Means of Prebonding Surface Passivation with Self-Assembled Monolayer. <i>Electrochemical and Solid-State Letters</i> , 2010 , 13, H412		9
175	Mitigating heat dissipation and thermo-mechanical stress challenges in 3-D IC using thermal through silicon via (TTSV) 2010 ,		9
174	A review of silicon-based wafer bonding processes, an approach to realize the monolithic integration of Si-CMOS and III-V-on-Si wafers. <i>Journal of Semiconductors</i> , 2021 , 42, 023106	2-3	9
173	Monolithic integration of III-V HEMT and Si-CMOS through TSV-less 3D wafer stacking 2015 ,		8
172	Heat transfer suppression by suspended droplets on microstructured surfaces. <i>Applied Physics Letters</i> , 2020 , 116, 233703	3-4	8
171	High density bump-less Cu-Cu bonding with enhanced quality achieved by pre-bonding temporary passivation for 3D wafer stacking 2011 ,		8
170	Integration of Low- κ Dielectric Liner in Through Silicon Via and Thermomechanical Stress Relief. <i>Applied Physics Express</i> , 2012 , 5, 126601	2-4	8
169	Surface Passivation of Cu for Low Temperature 3D Wafer Bonding. <i>ECS Solid State Letters</i> , 2012 , 1, P11-P14		8
168	Thermal characteristic of Cu/Cu bonding layer in 3-D integrated circuits stack. <i>Microelectronic Engineering</i> , 2010 , 87, 682-685	2-5	8
167	Characterization of the Young's modulus, residual stress and fracture strength of Cu ₃ N thin films using combinatorial deposition and micro-cantilevers. <i>Journal of Micromechanics and Microengineering</i> , 2015 , 25, 035023	2	7
166	. <i>IEEE Transactions on Device and Materials Reliability</i> , 2015 , 15, 142-148	1-6	7
165	Cu/Cu Hermetic Seal Enhancement Using Self-Assembled Monolayer Passivation. <i>Journal of Electronic Materials</i> , 2013 , 42, 502-506	1-9	7
164	. <i>IEEE Transactions on Electron Devices</i> , 2013 , 60, 56-62	2-9	7
163	Online equivalent series resistance estimation method for condition monitoring of DC-link capacitors 2017 ,		7
162	Temperature enhanced spontaneous emission rate spectra in GeSn/Ge quantum wells. <i>Optical Materials Express</i> , 2017 , 7, 800	2-6	7
161	1D photonic crystal direct bandgap GeSn-on-insulator laser. <i>Applied Physics Letters</i> , 2021 , 119, 201101	3-4	7

160	Surface plasmon enhanced GeSn photodetectors operating at 2 μ m. <i>Optics Express</i> , 2021 , 29, 8498-8509	3.3	7
159	Low-power and high-detectivity Ge photodiodes by in-situ heavy As doping during Ge-on-Si seed layer growth. <i>Optics Express</i> , 2021 , 29, 2940-2952	3.3	7
158	High-performance AlGaInP light-emitting diodes integrated on silicon through a superior quality germanium-on-insulator. <i>Photonics Research</i> , 2018 , 6, 290	6	6
157	Effect of bonding temperature on hermetic seal and mechanical support of wafer-level Cu-to-Cu thermo-compression bonding for 3D integration. <i>Microsystem Technologies</i> , 2013 , 19, 661-667	1.7	6
156	Dielectric relaxation in AC powder electroluminescent devices. <i>Solid State Communications</i> , 2017 , 250, 53-56	1.6	6
155	Thermal stability of germanium-tin (GeSn) fins. <i>Applied Physics Letters</i> , 2017 , 111, 252103	3.4	6
154	Uncooled resonant infrared detector based on aluminum nitride piezoelectric film through charge generations and lattice absorptions. <i>Applied Physics Letters</i> , 2014 , 104, 201110	3.4	6
153	Application of self-assembled monolayer (SAM) in low temperature bump-less Cu-Cu bonding for advanced 3D IC 2010 ,		6
152	Dopant profile control of epitaxial emitter for silicon solar cells by low temperature epitaxy. <i>Applied Physics Letters</i> , 2011 , 99, 011102	3.4	6
151	Optical design considerations of rear-side dielectric for higher efficiency of PERC solar cells. <i>Optics Express</i> , 2019 , 27, A758-A765	3.3	6
150	Cu-Cu Bonding in Ambient Environment by Ar/N ₂ Plasma Surface Activation and Its Characterization. <i>IEEE Transactions on Components, Packaging and Manufacturing Technology</i> , 2019 , 9, 596-605	1.7	6
149	High-Performance Back-Illuminated Ge _{0.92} Sn _{0.08} /Ge Multiple-Quantum-Well Photodetector on Si Platform For SWIR Detection. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2022 , 28, 1-9	3.8	6
148	Strain relaxation of germanium-tin (GeSn) fins. <i>AIP Advances</i> , 2018 , 8, 025111	1.5	5
147	Through-substrate via (TSV) with embedded capacitor as an on-chip energy storage element 2016 ,		5
146	Physical and Electrical Characterization of 3D Embedded Capacitor: A High-Density MIM Capacitor Embedded in TSV 2017 ,		5
145	Strategy for TSV scaling with consideration on thermo-mechanical stress and acceptable delay 2012 ,		5
144	Study of the evolution of Cu-Cu bonding interface imperfection under direct current stressing for three dimensional integrated circuits 2011 ,		5
143	Low Temperature Wafer Bonding of Low-Carbon Doped Oxide (CDO) for High Performance 3D IC Application. <i>Journal of the Electrochemical Society</i> , 2011 , 158, H1107	3.9	5

142	Impact of thermal through silicon via (TTSV) on the temperature profile of multi-layer 3-D device stack 2009 ,		5
141	Fine-pitch bump-less Cu-Cu bonding for wafer-on-wafer stacking and its quality enhancement 2010 ,		5
140	Growth and Characterizations of GeSn Films with High Sn Composition by Chemical Vapor Deposition (CVD) Using Ge ₂ H ₆ and SnCl ₄ for Mid-IR Applications. <i>ECS Transactions</i> , 2020 , 98, 91-98	1	5
139	(Invited) Novel Integrated Circuit Platforms Employing Monolithic Silicon CMOS + GaN Devices. <i>ECS Transactions</i> , 2016 , 75, 31-37	1	5
138	Performance of AlGaInP LEDs on silicon substrates through low threading dislocation density (TDD) germanium buffer layer. <i>Semiconductor Science and Technology</i> , 2018 , 33, 104004	1.8	5
137	Characterization of Hetero-Epitaxial Ge Films on Si Using Multiwavelength Micro-Raman Spectroscopy. <i>ECS Journal of Solid State Science and Technology</i> , 2015 , 4, P9-P15	2	4
136	UV/O ₃ assisted InP/Al ₂ O ₃ /Al ₂ O ₃ /Si low temperature die to wafer bonding. <i>Microsystem Technologies</i> , 2015 , 21, 1015-1020	1.7	4
135	Direct copper-copper wafer bonding with Ar/N ₂ plasma activation 2015 ,		4
134	Modeling, Fabrication, and Characterization of 3-D Capacitor Embedded in Through-Silicon Via. <i>IEEE Transactions on Components, Packaging and Manufacturing Technology</i> , 2018 , 8, 1524-1532	1.7	4
133	Experiment and modeling of microstructured capillary wicks for thermal management of electronics 2013 ,		4
132	Effect of direct current stressing to Cu/Cu bond interface imperfection for three dimensional integrated circuits. <i>Microelectronic Engineering</i> , 2013 , 106, 149-154	2.5	4
131	Cu/Cu Bond Quality Enhancement Through the Inclusion of a Hermetic Seal for 3-D IC. <i>IEEE Transactions on Electron Devices</i> , 2013 , 60, 1444-1450	2.9	4
130	Germanium-on-insulator virtual substrate for InGaP epitaxy. <i>Materials Science in Semiconductor Processing</i> , 2017 , 58, 15-21	4.3	4
129	Reliability Evaluation of Copper (Cu) Through-Silicon Vias (TSV) Barrier and Dielectric Liner by Electrical Characterization and Physical Failure Analysis (PFA) 2017 ,		4
128	Effect of Prebonding Anneal on the Microstructure Evolution and Cu/Cu Diffusion Bonding Quality for Three-Dimensional Integration. <i>Journal of Electronic Materials</i> , 2012 , 41, 2567-2572	1.9	4
127	Study of Hydrophilic Si Direct Bonding with Ultraviolet Ozone Activation for 3D Integration. <i>ECS Transactions</i> , 2013 , 50, 17-27	1	4
126	High throughput Cu-Cu bonding by non-thermo-compression method 2013 ,		4
125	2011 ,		4

124	3D integration of MEMS and CMOS via Cu-Cu bonding with simultaneous formation of electrical, mechanical and hermetic bonds 2012 ,		4
123	Thermal mitigation using thermal through silicon via (TTSV) in 3-D ICs 2009 ,		4
122	Insights into the Origins of Guided Microtrenches and Microholes/rings from Sn Segregation in Germanium in Epilayers. <i>Journal of Physical Chemistry C</i> , 2020 , 124, 20035-20045	3.8	4
121	TSV-integrated surface electrode ion trap for scalable quantum information processing. <i>Applied Physics Letters</i> , 2021 , 118, 124003	3.4	4
120	Sub-mA/cm ² Dark Current Density, Buffer-Less Germanium (Ge) Photodiodes on a 200-mm Ge-on-Insulator Substrate. <i>IEEE Transactions on Electron Devices</i> , 2021 , 68, 1730-1737	2.9	4
119	Cu-Cu Die to Die Surface Activated Bonding in Atmospheric Environment Using Ar and Ar/N ₂ Plasma. <i>ECS Transactions</i> , 2016 , 75, 109-116	1	4
118	Assembly Process and Electrical Properties of Top-Transferred Graphene on Carbon Nanotubes for Carbon-Based 3-D Interconnects. <i>IEEE Transactions on Components, Packaging and Manufacturing Technology</i> , 2020 , 10, 516-524	1.7	4
117	A highly ordered and damage-free Ge inverted pyramid array structure for broadband antireflection in the mid-infrared. <i>Journal of Materials Chemistry C</i> , 2021 , 9, 9884-9891	7.1	4
116	Effects of Copper Migration on the Reliability of Through-Silicon Via (TSV). <i>IEEE Transactions on Device and Materials Reliability</i> , 2018 , 18, 520-528	1.6	4
115	In _{0.49} Ga _{0.51} P/GaAs heterojunction bipolar transistors (HBTs) on 200 mm Si substrates: Effects of base thickness, base and sub-collector doping concentrations. <i>AIP Advances</i> , 2018 , 8, 115132	1.5	4
114	GeSn-on-insulator dual-waveband resonant-cavity-enhanced photodetectors at the 2 μm and 1.55 μm optical communication bands. <i>Optics Letters</i> , 2021 , 46, 3809-3812	3	4
113	Highly Tensile-Strained Self-Assembled Ge Quantum Dots on InP Substrates for Integrated Light Sources. <i>ACS Applied Nano Materials</i> , 2021 , 4, 897-906	5.6	4
112	Deposited poly-Si as on-demand linewidth compensator for on-chip Fabry-Pérot interferometer and vertical linear variable optical filter bandpass and passband manipulation. <i>Journal of Micromechanics and Microengineering</i> , 2019 , 29, 047001	2	3
111	Enabling the integrated circuits of the future 2015 ,		3
110	Design and Development of Single-Qubit Ion Trap on Glass and Si Substrates With RF Analysis and Performance Benchmarking. <i>IEEE Transactions on Components, Packaging and Manufacturing Technology</i> , 2020 , 10, 1221-1231	1.7	3
109	High-efficiency normal-incidence vertical p-i-n photodetectors on a germanium-on-insulator platform: publisher's note. <i>Photonics Research</i> , 2018 , 6, 46	6	3
108	Graphene-Metal Nanoparticles for Enhancing Thermoelectric Power Factor. <i>IEEE Nanotechnology Magazine</i> , 2019 , 18, 1114-1118	2.6	3
107	Observations of copper (Cu) transport in through-silicon vias (TSV) structure by electrical characterization for its reliability evaluation 2017 ,		3

106	Optimization of Biporous Micropillar Array for Enhanced Heat Transfer Performance 2015,		3
105	Integration of CNTs in 3D-IC interconnects: a non-destructive approach for the precise characterization and elucidation of interfacial properties. <i>Journal of Materials Chemistry A</i> , 2015 , 3, 2082-2089	1.3	3
104	Experimental characterization of Si micropillar based evaporator for advanced vapor chambers 2014,		3
103	Design, Simulation and Characterization of Wheatstone Bridge Structured Metal Thin Film Uncooled Microbolometer. <i>Procedia Engineering</i> , 2014 , 94, 6-13		3
102	High- κ Al ₂ O ₃ material in low temperature wafer-level bonding for 3D integration application. <i>AIP Advances</i> , 2014 , 4, 031311	1.5	3
101	Thermal characterization of TSV array as heat removal element in 3D IC stacking 2012,		3
100	Design, fabrication and electrical characterization of TSV 2010,		3
99	Metal-semiconductor-metal photodetectors on a GeSn-on-insulator platform 2019,		3
98	Thermocompression Cu-Cu Bonding of Blanket and Patterned Wafers 161-180		3
97	Gourd-shaped hole array germanium (Ge)-on-insulator photodiodes with improved responsivity and specific detectivity at 1,550 nm. <i>Optics Express</i> , 2021 , 29, 16520-16533	3.3	3
96	Epitaxy and characterization of GaInP/AlInP light-emitting diodes on As-doped Ge/Si substrates. <i>Optics Express</i> , 2016 , 24, 23129-23135	3.3	3
95	Experiments on the ultrathin silicon vapor chamber for enhanced heat transfer performance 2016,		3
94	Non-destructive degradation study of copper wire bond for its temperature cycling reliability evaluation. <i>Microelectronics Reliability</i> , 2016 , 61, 56-63	1.2	3
93	. <i>IEEE Sensors Journal</i> , 2021 , 1-1	4	3
92	Fabrication and Characterization of Surface Electrode Ion Trap for Quantum Computing 2018,		3
91	MOCVD growth of InGaP/GaAs heterojunction bipolar transistors on 200 mm Si wafers for heterogeneous integration with Si CMOS. <i>Semiconductor Science and Technology</i> , 2018 , 33, 115011	1.8	3
90	3D Integration of CMOS-Compatible Surface Electrode Ion Trap and Silicon Photonics for Scalable Quantum Computing 2019,		2
89	Red InGaP light-emitting diodes epitaxially grown on engineered Ge-on-Si substrates 2016,		2

88	High-Efficiency Planar Thin-Film Si/PEDOT:PSS Hybrid Solar Cell. <i>IEEE Journal of Photovoltaics</i> , 2016 , 6, 217-222	3-7	2
87	GaN HEMTs with Breakdown Voltage of 2200 V Realized on a 200 mm GaN-on-Insulator(GNOI)-on-Si Wafer 2019 ,		2
86	Fabrication of germanium-on-insulator (GOI) with improved threading dislocation density (TDD) via buffer-less epitaxy and bonding 2014 ,		2
85	TSV-less 3D stacking of MEMS and CMOS via low temperature Al-Au direct bonding with simultaneous formation of hermetic seal 2014 ,		2
84	Detection of Ge and Si Intermixing in Ge/Si Using Multiwavelength Micro-Raman Spectroscopy. <i>ECS Transactions</i> , 2014 , 64, 79-88	1	2
83	Extension of Germanium-on-insulator optical absorption edge using CMOS-compatible silicon nitride stressor 2017 ,		2
82	Growth and fabrication of carbon-based three-dimensional heterostructure in through-silicon vias (TSVs) for 3D interconnects 2017 ,		2
81	2017 ,		2
80	Integration of CNT in TSV (B th) for 3D IC application and its process challenges 2013 ,		2
79	(Invited) PE-TEOS Wafer Bonding Enhancement at Low Temperature with a High-k Dielectric Capping Layer. <i>ECS Transactions</i> , 2010 , 28, 489-498	1	2
78	Effect of Using Chemical Vapor Deposition WSi[sub 2] and Postmetallization Annealing on GaAs Metal-Oxide-Semiconductor Capacitors. <i>Electrochemical and Solid-State Letters</i> , 2010 , 13, H328		2
77	Fabrication and characterization of bump-less Cu-Cu bonding by wafer-on-wafer stacking for 3D IC 2010 ,		2
76	Comparison between chemical vapor deposited and physical vapor deposited WSi ₂ metal gate for InGaAs n-metal-oxide-semiconductor field-effect transistors. <i>Applied Physics Letters</i> , 2011 , 98, 182102	3-4	2
75	Direct Bonding of Ge-Ge Using Epitaxially Grown Ge-on-Si Wafers. <i>ECS Journal of Solid State Science and Technology</i> , 2012 , 1, P18-P22	2	2
74	2009 ,		2
73	Ge-on-insulator lateral p-i-n waveguide photodetectors for optical communication. <i>Optics Letters</i> , 2020 , 45, 6683-6686	3	2
72	Ar/N ₂ Plasma Induced Metastable CuxNy for Cu-Cu Direct Bonding. <i>ECS Transactions</i> , 2020 , 98, 203-210	1	2
71	A self-aligned dry etching method for mechanical strain enhancement of germanium and its uniformity improvement for photonic applications 2018 ,		2

70	Glass Substrate Interposer for TSV-integrated Surface Electrode Ion Trap 2020 ,		2
69	. <i>IEEE Transactions on Components, Packaging and Manufacturing Technology</i> , 2020 , 10, 679-685	1.7	2
68	The effects of strain and composition on the conduction-band offset of direct band gap type-I GeSn/GeSnSi quantum dots for CMOS compatible mid-IR light source. <i>Semiconductor Science and Technology</i> , 2020 , 35, 025008	1.8	2
67	Three-Dimensional Capacitor Embedded in Fully Cu-Filled Through-Silicon Via and Its Thermo-Mechanical Reliability for Power Delivery Applications 2020 ,		2
66	Biaxially strained germanium crossbeam with a high-quality optical cavity for on-chip laser applications. <i>Optics Express</i> , 2021 , 29, 14174-14181	3.3	2
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64	Large-Scale Fabrication of Surface Ion Traps on a 300 mm Glass Wafer. <i>Physica Status Solidi (B): Basic Research</i> , 2021 , 258, 2000589	1.3	2
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60	TiN Guard Ring Around TSV for Cross-Talk Suppression of Parallel Networking of Data Center 2019 ,		2
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54	Effects of precursors purity on graphene quality: Synthesis and thermoelectric effect. <i>AIP Advances</i> , 2020 , 10, 045016	1.5	1
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51	(Invited) The Effect of Germanium/Silicon Interface on Germanium Photonics. <i>ECS Transactions</i> , 2016 , 75, 683-688	1	1
50	Experiments on the Biporous Micropillar Array for Enhanced Heat Transfer Performance 2016 ,		1
49	Dielectric Quality of 3D Capacitor Embedded in Through-Silicon Via (TSV) 2018 ,		1
48	Leakage current conduction mechanism of three-dimensional capacitors embedded in through-silicon vias. <i>Japanese Journal of Applied Physics</i> , 2018 , 57, 07MF01	1.4	1
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45	The dependency of TSV keep-out zone (KOZ) on Si crystal direction and liner material 2013 ,		1
44	Spatial variation of TSV capacitance and method of stabilization with Al ₂ O ₃ -induced negative fixed charge at the silicon-liner interface 2011 ,		1
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36	Germanium-on-insulator Pedestal Waveguide for Midinfrared Sensing Applications 2018 ,		1
35	Theoretical design of mid-infrared interband cascade lasers in SiGeSn system. <i>New Journal of Physics</i> , 2020 , 22, 083061	2.9	1

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31	Dark Current Analysis of Vertical p-i-n Photodetectors on a Germanium-on-Insulator Platform 2019 ,		1
30	Germanium Photodetectors with 60-nm Absorption Coverage Extension and ~20% Quantum Efficiency Enhancement across L-Band 2019 ,		1
29	Development and Integration of Silicon Photonics Interposer for Quantum Computing System 2019 ,		1
28	GeSn p-FinFETs with Sub-10 nm Fin Width Realized on a 200 mm GeSnOI Substrate: Lowest SS of 63 mV/decade, Highest $G_{m,int}$ of 900 $\mu S/\mu m$, and High-Field μe_{eff} of 275 $cm^2/V\sqrt{s}$ 2018 ,		1
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23	Geometry and Thermal Stress Analysis of In-plane Outgassing Channels in Al ₂ O ₃ -Intermediated InP (Die)-to-Si (Wafer) Bonding. <i>ECS Journal of Solid State Science and Technology</i> , 2016 , 5, P117-P123	2	0
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18	Design and Fabrication of Grating Couplers for the Optical Addressing of Trapped Ions. <i>IEEE Photonics Journal</i> , 2021 , 13, 1-6	1-8	0
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16	Charging of miniature flat heat pipes. <i>Heat and Mass Transfer</i> , 2018 , 54, 3131-3136	2.2
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11	Design and Modeling of Platinum Thin Film Microheater for High Temperature Microtensile Test Application. <i>Advanced Materials Research</i> , 2011 , 254, 9-12	0.5
10	Effect of Nickel Silicide Induced Dopant Segregation on Vertical Silicon Nanowire Diode Performance. <i>Materials Research Society Symposia Proceedings</i> , 2012 , 1439, 89-94	
9	Vertical Silicon Nanowire Diode with Nickel Silicide Induced Dopant Segregation. <i>Japanese Journal of Applied Physics</i> , 2012 , 51, 11PE08	1.4
8	Fabrication Using Copper Thermo-Compression Bonding at MIT 2008 , 431-446	
7	Photoluminescence Evolution with Deposition Thickness of Ge Nanostructures Embedded in GaSb. <i>Physica Status Solidi (B): Basic Research</i> , 2100418	1.3
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3	Formation of 45° Silicon (110) Surface Using Triton X-n Surfactants in Potassium Hydroxide for Infrared Applications. <i>ECS Journal of Solid State Science and Technology</i> , 2018 , 7, Q259-Q266	2
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