

Mantu Hudait

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109
papers

2,680
citations

28
h-index

47
g-index

124
ext. papers

2,993
ext. citations

3.8
avg, IF

4.98
L-index

#	Paper	IF	Citations
109	Electrical transport characteristics of Au/n-GaAs Schottky diodes on n-Ge at low temperatures. <i>Solid-State Electronics</i> , 2001 , 45, 133-141	1.7	142
108	Effects of thin oxide in metal/semiconductor and metal/insulator/semiconductor epi-GaAs Schottky diodes. <i>Solid-State Electronics</i> , 2000 , 44, 1089-1097	1.7	131
107	Doping dependence of the barrier height and ideality factor of Au/n-GaAs Schottky diodes at low temperatures. <i>Physica B: Condensed Matter</i> , 2001 , 307, 125-137	2.8	102
106	Single-junction InGaP/GaAs solar cells grown on Si substrates with SiGe buffer layers. <i>Progress in Photovoltaics: Research and Applications</i> , 2002 , 10, 417-426	6.8	100
105	Germanium Based Field-Effect Transistors: Challenges and Opportunities. <i>Materials</i> , 2014 , 7, 2301-2339	3.5	96
104	The influences of surface treatment and gas annealing conditions on the inversion behaviors of the atomic-layer-deposition Al ₂ O ₃ /n-In _{0.53} Ga _{0.47} As metal-oxide-semiconductor capacitor. <i>Applied Physics Letters</i> , 2010 , 97, 042903	3.4	92
103	Fermi level unpinning of GaSb (100) using plasma enhanced atomic layer deposition of Al ₂ O ₃ . <i>Applied Physics Letters</i> , 2010 , 97, 143502	3.4	86
102	Interface states density distribution in Au/n-GaAs Schottky diodes on n-Ge and n-GaAs substrates. <i>Materials Science and Engineering B: Solid-State Materials for Advanced Technology</i> , 2001 , 87, 141-147	3.1	84
101	Barrier-Engineered Arsenide/Antimonide Heterojunction Tunnel FETs With Enhanced Drive Current. <i>IEEE Electron Device Letters</i> , 2012 , 33, 1568-1570	4.4	74
100	Ultrahigh-Speed 0.5 V Supply Voltage $\text{In}_{0.7}\text{Ga}_{0.3}\text{As}$ Quantum-Well Transistors on Silicon Substrate. <i>IEEE Electron Device Letters</i> , 2007 , 28, 685-687	4.4	70
99	Effect of twinning on the photoluminescence and photoelectrochemical properties of indium phosphide nanowires grown on silicon (111). <i>Nano Letters</i> , 2008 , 8, 4664-9	11.5	67
98	Anomalous current transport in Au/low-doped n-GaAs Schottky barrier diodes at low temperatures. <i>Applied Physics A: Materials Science and Processing</i> , 1999 , 68, 49-55	2.6	67
97	Self-catalyzed epitaxial growth of vertical indium phosphide nanowires on silicon. <i>Nano Letters</i> , 2009 , 9, 2223-8	11.5	65
96	Kinetic control of self-catalyzed indium phosphide nanowires, nanocones, and nanopillars. <i>Nano Letters</i> , 2009 , 9, 2207-11	11.5	58
95	Carrier Transport in High-Mobility III-V Quantum-Well Transistors and Performance Impact for High-Speed Low-Power Logic Applications. <i>IEEE Electron Device Letters</i> , 2008 , 29, 1094-1097	4.4	51
94	The Roles of Threading Dislocations on Electrical Properties of AlGaIn/GaN Heterostructure Grown by MBE. <i>Journal of the Electrochemical Society</i> , 2010 , 157, H746	3.9	50
93	Advanced high-K gate dielectric for high-performance short-channel In _{0.7} Ga _{0.3} As quantum well field effect transistors on silicon substrate for low power logic applications 2009 ,		49

92	High-performance 40nm gate length InSb p-channel compressively strained quantum well field effect transistors for low-power (VCC=0.5V) logic applications 2008 ,		47
91	Comparison of mixed anion, InAsyP1-y and mixed cation, InxAl1-xAs metamorphic buffers grown by molecular beam epitaxy on (100) InP substrates. <i>Journal of Applied Physics</i> , 2004 , 95, 3952-3960	2.5	47
90	Demonstration of improved heteroepitaxy, scaled gate stack and reduced interface states enabling heterojunction tunnel FETs with high drive current and high on-off ratio 2012 ,		43
89	III-V Multijunction Solar Cell Integration with Silicon: Present Status, Challenges and Future Outlook. <i>Energy Harvesting and Systems</i> , 2014 , 1,	4.4	41
88	Strain relaxation properties of InAsyP1-y metamorphic materials grown on InP substrates. <i>Journal of Applied Physics</i> , 2009 , 105, 061643	2.5	41
87	Self-annihilation of antiphase boundaries in GaAs epilayers on Ge substrates grown by metal-organic vapor-phase epitaxy. <i>Journal of Applied Physics</i> , 2001 , 89, 5972-5979	2.5	36
86	Lead-free epitaxial ferroelectric material integration on semiconducting (100) Nb-doped SrTiO3 for low-power non-volatile memory and efficient ultraviolet ray detection. <i>Scientific Reports</i> , 2015 , 5, 12415	4.9	34
85	X-ray photoelectron spectroscopy analysis and band offset determination of CeO2 deposited on epitaxial (100), (110), and (111)Ge. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2014 , 32, 011217	1.3	33
84	Integration of lead-free ferroelectric on HfO2/Si (100) for high performance non-volatile memory applications. <i>Scientific Reports</i> , 2015 , 5, 8494	4.9	32
83	Reduced erbium-doped ceria nanoparticles: one nano-host applicable for simultaneous optical down- and up-conversions. <i>Nanoscale Research Letters</i> , 2014 , 9, 231	5	29
82	High-quality InAsyP1-y step-graded buffer by molecular-beam epitaxy. <i>Applied Physics Letters</i> , 2003 , 82, 3212-3214	3.4	29
81	Structural and band alignment properties of Al2O3 on epitaxial Ge grown on (100), (110), and (111)A GaAs substrates by molecular beam epitaxy. <i>Journal of Applied Physics</i> , 2013 , 113, 134311	2.5	28
80	Low-power tunnel field effect transistors using mixed As and Sb based heterostructures. <i>Nanotechnology Reviews</i> , 2013 , 2, 637-678	6.3	28
79	Structural, morphological, and band alignment properties of GaAs/Ge/GaAs heterostructures on (100), (110), and (111)A GaAs substrates. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2013 , 31, 011206	1.3	28
78	Impact of Threading Dislocations on the Design of GaAs and InGaP/GaAs Solar Cells on Si Using Finite Element Analysis. <i>IEEE Journal of Photovoltaics</i> , 2013 , 3, 528-534	3.7	26
77	High quality Ge thin film grown by ultrahigh vacuum chemical vapor deposition on GaAs substrate. <i>Applied Physics Letters</i> , 2011 , 98, 161905	3.4	26
76	Reliability Studies on High-Temperature Operation of Mixed As/Sb Staggered Gap Tunnel FET Material and Devices. <i>IEEE Transactions on Device and Materials Reliability</i> , 2014 , 14, 245-254	1.6	25
75	Role of InAs and GaAs terminated heterointerfaces at source/channel on the mixed As-Sb staggered gap tunnel field effect transistor structures grown by molecular beam epitaxy. <i>Journal of Applied Physics</i> , 2012 , 112, 024306	2.5	25

74	Defect assistant band alignment transition from staggered to broken gap in mixed As/Sb tunnel field effect transistor heterostructure. <i>Journal of Applied Physics</i> , 2012 , 112, 094312	2.5	25
73	Direct measurement of quantum confinement effects at metal to quantum-well nanocontacts. <i>Physical Review Letters</i> , 2005 , 94, 206803	7.4	24
72	Heterogeneous integration of enhancement mode In _{0.7} Ga _{0.3} As quantum well transistor on silicon substrate using thin (less than 2 nm) composite buffer architecture for high-speed and low-voltage (0.5 V) logic applications 2007 ,		23
71	Photoluminescence studies on Si-doped GaAs/Ge. <i>Journal of Applied Physics</i> , 1998 , 83, 4454-4461	2.5	23
70	An Energy-Efficient Tensile-Strained Ge/InGaAs TFET 7T SRAM Cell Architecture for Ultralow-Voltage Applications. <i>IEEE Transactions on Electron Devices</i> , 2017 , 64, 2193-2200	2.9	22
69	Heterogeneous integration of epitaxial Ge on Si using AlAs/GaAs buffer architecture: suitability for low-power fin field-effect transistors. <i>Scientific Reports</i> , 2014 , 4, 6964	4.9	22
68	Integration of SrTiO ₃ on crystallographically oriented epitaxial germanium for low-power device applications. <i>ACS Applied Materials & Interfaces</i> , 2015 , 7, 5471-9	9.5	20
67	Strain-Engineered Biaxial Tensile Epitaxial Germanium for High-Performance Ge/InGaAs Tunnel Field-Effect Transistors. <i>IEEE Journal of the Electron Devices Society</i> , 2015 , 3, 184-193	2.3	20
66	Metamorphic In _{0.7} Al _{0.3} As/In _{0.69} Ga _{0.31} As thermophotovoltaic devices grown on graded InAsP _{1-x} buffers by molecular beam epitaxy. <i>Solid-State Electronics</i> , 2009 , 53, 102-106	1.7	19
65	In situ grown Ge in an arsenic-free environment for GaAs/Ge/GaAs heterostructures on off-oriented (100) GaAs substrates using molecular beam epitaxy. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2012 , 30, 051205	1.3	18
64	Energy band alignment of atomic layer deposited HfO ₂ oxide film on epitaxial (100)Ge, (110)Ge, and (111)Ge layers. <i>Journal of Applied Physics</i> , 2013 , 113, 114303	2.5	18
63	Heterointerface engineering of broken-gap InAs/GaSb multilayer structures. <i>ACS Applied Materials & Interfaces</i> , 2015 , 7, 2512-7	9.5	17
62	Design, fabrication, and analysis of p-channel arsenide/antimonide hetero-junction tunnel transistors. <i>Journal of Applied Physics</i> , 2014 , 115, 044502	2.5	17
61	Band offset determination of mixed As/Sb type-II staggered gap heterostructure for n-channel tunnel field effect transistor application. <i>Journal of Applied Physics</i> , 2013 , 113, 024319	2.5	17
60	Effect of Postdeposition Annealing Temperatures on Electrical Characteristics of Molecular-Beam-Deposited HfO ₂ on n-InAs/InGaAs Metal Oxide Semiconductor Capacitors. <i>Applied Physics Express</i> , 2012 , 5, 021104	2.4	17
59	Study of the inversion behaviors of Al ₂ O ₃ /In _x Ga _{1-x} As metal oxide semiconductor capacitors with different In contents. <i>Solid-State Electronics</i> , 2010 , 54, 37-41	1.7	17
58	Tailoring the Valence Band Offset of Al ₂ O ₃ on Epitaxial GaAs(1-y)Sb(y) with Tunable Antimony Composition. <i>ACS Applied Materials & Interfaces</i> , 2015 , 7, 28624-31	9.5	16
57	Structural properties and band offset determination of p-channel mixed As/Sb type-II staggered gap tunnel field-effect transistor structure. <i>Applied Physics Letters</i> , 2012 , 101, 112106	3.4	16

56	Spatial resolution of ballistic electron emission microscopy measured on metal/quantum-well Schottky contacts. <i>Applied Physics Letters</i> , 2005 , 87, 182105	3.4	15
55	Heterogeneously-Grown Tunable Tensile Strained Germanium on Silicon for Photonic Devices. <i>ACS Applied Materials & Interfaces</i> , 2015 , 7, 26470-81	9.5	14
54	Dislocation reduction in GaN film using Ga-lean GaN buffer layer and migration enhanced epitaxy. <i>Thin Solid Films</i> , 2011 , 519, 6208-6213	2.2	14
53	(Invited) Heterogeneously Integrated III-V on Silicon for Future Nanoelectronics. <i>ECS Transactions</i> , 2012 , 45, 581-594	1	14
52	Growth, structural, and electrical properties of germanium-on-silicon heterostructure by molecular beam epitaxy. <i>AIP Advances</i> , 2017 , 7, 095214	1.5	13
51	Carrier compensation and scattering mechanisms in Si-doped InAsyP1-y layers grown on InP substrates using intermediate InAsyP1-y step-graded buffers. <i>Journal of Applied Physics</i> , 2006 , 100, 063705	2.5	13
50	Atomic layer diffusion and electronic structure at In0.53Ga0.47As/InP interfaces. <i>Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena</i> , 2004 , 22, 554		13
49	Integrating III-V on Silicon for Future Nanoelectronics 2008 ,		12
48	Tri-gate GaN junction HEMT. <i>Applied Physics Letters</i> , 2020 , 117, 143506	3.4	12
47	Heteroepitaxial Ge MOS Devices on Si Using Composite AlAs/GaAs Buffer. <i>IEEE Journal of the Electron Devices Society</i> , 2015 , 3, 341-348	2.3	11
46	Energy band alignment of atomic layer deposited HfO2 on epitaxial (110)Ge grown by molecular beam epitaxy. <i>Applied Physics Letters</i> , 2013 , 102, 093109	3.4	11
45	Interfacial band alignment and structural properties of nanoscale TiO2 thin films for integration with epitaxial crystallographic oriented germanium. <i>Journal of Applied Physics</i> , 2014 , 115, 024303	2.5	11
44	Functionally Graded Interfaces: Role and Origin of Internal Electric Field and Modulated Electrical Response. <i>ACS Applied Materials & Interfaces</i> , 2015 , 7, 22458-68	9.5	10
43	Magnetic Field Sensing by Exploiting Giant Nonstrain-Mediated Magnetodielectric Response in Epitaxial Composites. <i>Nano Letters</i> , 2018 , 18, 2835-2843	11.5	10
42	BaTiO3 integration with nanostructured epitaxial (100), (110), and (111) germanium for multifunctional devices. <i>ACS Applied Materials & Interfaces</i> , 2013 , 5, 11446-52	9.5	10
41	Atomic diffusion and band lineups at In0.53Ga0.47As-on-InP heterointerfaces. <i>Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena</i> , 2005 , 23, 1832		10
40	TBAL: Tunnel FET-Based Adiabatic Logic for Energy-Efficient, Ultra-Low Voltage IoT Applications. <i>IEEE Journal of the Electron Devices Society</i> , 2019 , 7, 210-218	2.3	10
39	Performance Evaluation of Novel Strain-Engineered Ge-InGaAs Heterojunction Tunnel Field-Effect Transistors. <i>IEEE Transactions on Electron Devices</i> , 2015 , 62, 3223-3228	2.9	9

38	Structural, morphological, and defect properties of metamorphic In _{0.7} Ga _{0.3} As/GaAs _{0.35} Sb _{0.65} p-type tunnel field effect transistor structure grown by molecular beam epitaxy. <i>Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics</i> , 2013 , 31, 041203	1.3	9
37	Direct and indirect band gaps in Ge under biaxial tensile strain investigated by photoluminescence and photoreflectance studies. <i>Physical Review B</i> , 2018 , 97,	3.3	9
36	The permittivity and refractive index measurements of doped barium titanate (BT-BCN). <i>Optical Materials</i> , 2017 , 73, 793-798	3.3	7
35	Tensile-strained nanoscale Ge/In _{0.16} Ga _{0.84} As heterostructure for tunnel field-effect transistor. <i>ACS Applied Materials & Interfaces</i> , 2014 , 6, 4947-53	9.5	7
34	Quasi-zero lattice mismatch and band alignment of BaTiO ₃ on epitaxial (110)Ge. <i>Journal of Applied Physics</i> , 2013 , 114, 024303	2.5	7
33	Design and Modeling of Metamorphic Dual-Junction InGaP/GaAs Solar Cells on Si Substrate for Concentrated Photovoltaic Application. <i>IEEE Journal of Photovoltaics</i> , 2014 , 4, 1683-1689	3.7	7
32	Gate length scaling study of InAlAs/InGaAs/InAsP composite channel HEMTs. <i>Solid-State Electronics</i> , 2007 , 51, 838-841	1.7	7
31	Growth and characterization of metamorphic InAs/GaSb tunnel heterojunction on GaAs by molecular beam epitaxy. <i>Journal of Applied Physics</i> , 2016 , 119, 244308	2.5	7
30	Magnetotransport Properties of Epitaxial Ge/AlAs Heterostructures Integrated on GaAs and Silicon. <i>ACS Applied Materials & Interfaces</i> , 2015 , 7, 22315-21	9.5	6
29	Magnetic Damping in Epitaxial Iron Alloyed with Vanadium and Aluminum. <i>Physical Review Applied</i> , 2020 , 14,	4.3	6
28	CV characteristics of epitaxial germanium metaloxide semiconductor capacitor on GaAs substrate with ALD Al ₂ O ₃ dielectric. <i>Microelectronic Engineering</i> , 2012 , 97, 16-19	2.5	4
27	Band Offset Enhancement of α -Al ₂ O ₃ /Tensile-Ge for High Mobility Nanoscale pMOS Devices. <i>IEEE Electron Device Letters</i> , 2017 , 38, 1196-1199	4.4	4
26	Mixed-anion GaAs _{1-y} Sb _y graded buffer heterogeneously integrated on Si by molecular beam epitaxy. <i>Applied Physics Express</i> , 2015 , 8, 025501	2.4	4
25	Growth, strain relaxation properties and high- κ dielectric integration of mixed-anion GaAs _{1-y} Sb _y metamorphic materials. <i>Journal of Applied Physics</i> , 2014 , 116, 134304	2.5	4
24	(Invited) Si, SiGe, Ge, and III-V Semiconductor Nanomembranes and Nanowires Enabled by SiGe Epitaxy. <i>ECS Transactions</i> , 2010 , 33, 777-789	1	4
23	Photoconductivity decay in metamorphic InAsP/InGaAs double heterostructures grown on InAs _y P _{1-y} compositionally step-graded buffers. <i>Applied Physics Letters</i> , 2005 , 86, 071908	3.4	4
22	Relaxed InAsP layers grown on step graded InAsP buffers by solid source MBE. <i>Materials Research Society Symposia Proceedings</i> , 2002 , 722, 1021		4
21	Investigating FinFET Sidewall Passivation Using Epitaxial (100)Ge and (110)Ge MetalOxideSemiconductor Devices on AlAs/GaAs. <i>IEEE Transactions on Electron Devices</i> , 2017 , 64, 4457-4465	2.9	3

20	Metal work function engineering on epitaxial (100)Ge and (110)Ge metal-oxide-semiconductor devices. <i>Microelectronic Engineering</i> , 2018 , 199, 80-86	2.5	3
19	Nonlinear DC equivalent circuits for ferroelectric memristor and Its FSM application. <i>Integrated Ferroelectrics</i> , 2018 , 192, 16-27	0.8	3
18	Heterogeneously grown tunable group-IV laser on silicon 2016 ,		2
17	Transport Across Heterointerfaces of Amorphous Niobium Oxide and Crystallographically Oriented Epitaxial Germanium. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 43315-43324	9.5	2
16	Design, Theoretical, and Experimental Investigation of Tensile-Strained Germanium Quantum-Well Laser Structure. <i>ACS Applied Electronic Materials</i> , 2021 , 3, 4535-4547	4	2
15	2016 ,		2
14	Engineering the Interfacial Electronic Structure of Epitaxial Ge/AlAs(001) Heterointerfaces via Substitutional Boron Incorporation: The Roles of Doping and Interface Stoichiometry. <i>ACS Applied Electronic Materials</i> , 2019 , 1, 2646-2654	4	2
13	In Situ SiO Passivation of Epitaxial (100) and (110)InGaAs by Exploiting TaSiO Atomic Layer Deposition Process. <i>ACS Omega</i> , 2018 , 3, 14567-14574	3.9	2
12	Structural and optical properties of sulfur passivated epitaxial step-graded GaAs _{1-y} Sb _y materials. <i>AIP Advances</i> , 2018 , 8, 115119	1.5	2
11	Pushing the limits of silicon transistors 2016 ,		1
10	Design of metamorphic dual-junction InGaP/GaAs solar cell on Si with efficiency greater than 29% using finite element analysis 2012 ,		1
9	Evidence of interface-induced persistent photoconductivity in InP _{1-0.53Ga0.47As} InP double heterostructures grown by molecular-beam epitaxy. <i>Applied Physics Letters</i> , 2005 , 87, 032106	3.4	1
8	Device Characterization of a Sulfur-Implanted p ⁺⁺ /p GaSb Photovoltaic Camel Diode. <i>IEEE Journal of Photovoltaics</i> , 2020 , 10, 1675-1680	3.7	1
7	Structural, morphological and magnetotransport properties of composite semiconducting and semimetallic InAs/GaSb superlattice structure. <i>Materials Advances</i> , 2020 , 1, 1099-1112	3.3	1
6	Heterogeneous integration of InAs/GaSb tunnel diode structure on silicon using 200 nm GaAsSb dislocation filtering buffer. <i>AIP Advances</i> , 2018 , 8, 105108	1.5	1
5	Ultra-high frequency photoconductivity decay in GaAs/Ge/GaAs double heterostructure grown by molecular beam epitaxy. <i>Applied Physics Letters</i> , 2013 , 102, 093119	3.4	0
4	Mapping the Interfacial Electronic Structure of Strain-Engineered Epitaxial Germanium Grown on In Al As Stressors.. <i>ACS Omega</i> , 2022 , 7, 5946-5953	3.9	0
3	Electronic and optical properties of highly boron-doped epitaxial Ge/AlAs(001) heterostructures. <i>Journal of Applied Physics</i> , 2020 , 127, 075702	2.5	0

- 2 Performance Analysis of TaSiOx Inspired Sub-10 nm Energy Efficient In_{0.53}Ga_{0.47}As Quantum Well Tri-Gate Technology. *IEEE Journal of the Electron Devices Society*, **2017**, 5, 496-503 2.3
- 1 Surface Preparation and Passivation of III-V Substrates for Future Ultra-High Speed, Low Power Logic Applications. *Solid State Phenomena*, **2009**, 145-146, 165-167 0.4