Max G Lagally

List of Publications by Year
in descending order

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102 papers	4,628 citations	136740 32 h-index	98622 67 g-index
102 all docs	102 docs citations	102 times ranked	5407 citing authors

#	Article	IF	Citations
1	Atomistic Processes in the Early Stages of Thin-Film Growth. Science, 1997, 276, 377-383.	6.0	895
2	Elastically relaxed free-standing strained-silicon nanomembranes. Nature Materials, 2006, 5, 388-393.	13.3	230
3	Direct-bandgap light-emitting germanium in tensilely strained nanomembranes. Proceedings of the National Academy of Sciences of the United States of America, 2011, 108, 18893-18898.	3.3	219
4	Electronic transport in nanometre-scale silicon-on-insulator membranes. Nature, 2006, 439, 703-706.	13.7	165
5	Direct oriented growth of armchair graphene nanoribbons on germanium. Nature Communications, 2015, 6, 8006.	5.8	157
6	Electronically Driven Structure Changes of Si Captured by Femtosecond Electron Diffraction. Physical Review Letters, 2008, 100, 155504.	2.9	150
7	Bonding-Geometry Dependence of Fractal Growth on Metal Surfaces. Physical Review Letters, 1994, 73, 1829-1832.	2.9	146
8	Atomic-scale mechanisms for surfactant-mediated layer-by-layer growth in homoepitaxy. Physical Review Letters, 1994, 72, 693-696.	2.9	127
9	Semiconductors turn soft: inorganic nanomembranes. Soft Matter, 2010, 6, 439-455.	1.2	121
10	Gate fidelity and coherence of an electron spin in an Si/SiGe quantum dot with micromagnet. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 11738-11743.	3.3	119
11	High-speed strained-single-crystal-silicon thin-film transistors on flexible polymers. Journal of Applied Physics, 2006, 100, 013708.	1.1	114
12	Elastically strain-sharing nanomembranes: flexible and transferable strained silicon and siliconâ€“germanium alloys. Journal Physics D: Applied Physics, 2007, 40, R75-R92.	1.3	110
13	Flexible photodetectors on plastic substrates by use of printing transferred single-crystal germanium membranes. Applied Physics Letters, 2009, 94, .	1.5	110
14	Kinematic Low-Energy Electron-Diffraction Intensities from Averaged Data: A Method for Surface Crystallography. Physical Review Letters, 1971, 26, 1557-1560.	2.9	101
15	Fast flexible electronics with strained silicon nanomembranes. Scientific Reports, 2013, 3, 1291.	1.6	100
16	Thin-film cliffhanger. Nature, 2002, 417, 907-909.	13.7	85
17	Semiconductor Nanomembrane Tubes: Three-Dimensional Confinement for Controlled Neurite Outgrowth. ACS Nano, 2011, 5, 2447-2457.	7.3	85
18	Excitation of longitudinal and transverse coherent acoustic phonons in nanometer free-standing films of (001) Si. Physical Review B, 2009, 79, .	1.1	81

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19	Strained-Germanium Nanostructures for Infrared Photonics. ACS Nano, 2014, 8, 3136-3151.	7.3	80
20	High-fidelity resonant gating of a silicon-based quantum dot hybrid qubit. Npj Quantum Information, 2015, 1, .	2.8	80
21	Nanomechanical architecture of semiconductor nanomembranes. Nanoscale, 2011, 3, 96-120.	2.8	79
22	A Surface-Based Approach to DNA Computation. Journal of Computational Biology, 1998, 5, 255-267.	0.8	69
23	Mechano-electronic Superlattices in Silicon Nanoribbons. ACS Nano, 2009, 3, 721-727.	7.3	66
24	A method to obtain kinematic intensities from low-energy electron diffraction data. Surface Science, 1973, 35, 117-144.	0.8	64
25	Chemisorption: Island formation and adatom interactions. Critical Reviews in Solid State and Materials Sciences, 1978, 7, 233-259.	6.8	62
26	Influence of Surface Chemical Modification on Charge Transport Properties in Ultrathin Silicon Membranes. ACS Nano, 2009, 3, 1683-1692.	7.3	50
27	Si/Ge Junctions Formed by Nanomembrane Bonding. ACS Nano, 2011, 5, 1179-1189.	7.3	50
28	Strain engineering and mechanical assembly of silicon/germanium nanomembranes. Materials Science and Engineering Reports, 2018, 128, 1-31.	14.8	48
29	The present status of low-energy electron diffraction. Applications of Surface Science, 1982, 13, 260-281.	1.0	46
30	State-conditional coherent charge qubit oscillations in a Si/SiGe quadruple quantum dot. Npj Quantum Information, 2016, 2, .	2.8	37
31	Quantum Confinement, Surface Roughness, and the Conduction Band Structure of Ultrathin Silicon Membranes. ACS Nano, 2010, 4, 2466-2474.	7.3	36
32	Exceptional Charge Transport Properties of Graphene on Germanium. ACS Nano, 2014, 8, 10237-10245.	7.3	33
33	Silicon Nanomembranes. MRS Bulletin, 2007, 32, 57-63.	1.7	31
34	Island-corner barrier effect in two-dimensional pattern formation at surfaces. Physical Review B, 2001, 63, .	1.1	30
35	Strain-Engineered Surface Transport in Si(001): Complete Isolation of the Surface State via Tensile Strain. Physical Review Letters, 2013, 111, 246801.	2.9	27
36	Defect-Free Single-Crystal SiGe: A New Material from Nanomembrane Strain Engineering. ACS Nano, 2011, 5, 5814-5822.	7.3	25

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37	Passivation of Germanium by Graphene. ACS Applied Materials & Interfaces, 2017, 9, 17629-17636.	4.0	25
38	Nano-origami: Art and function. Nano Today, 2015, 10, 538-541.	6.2	23
39	Progress toward demonstration of a surface based DNA computation: a one word approach to solve a model satisfiability problem. BioSystems, 1999, 52, 25-33.	0.9	22
40	Strain Engineered SiGe Multiple-Quantum-Well Nanomembranes for Far-Infrared Intersubband Device Applications. ACS Nano, 2013, 7, 2326-2334.	7.3	22
41	SiGe Nanomembrane Quantum-Well Infrared Photodetectors. ACS Photonics, 2016, 3, 1978-1985.	3.2	22
42	Straining Nanomembranes via Highly Mismatched Heteroepitaxial Growth: InAs Islands on Compliant Si Substrates. ACS Nano, 2012, 6, 10287-10295.	7.3	20
43	Probing the electronic structure at semiconductor surfaces using charge transport in nanomembranes. Nature Communications, 2013, 4, 1339.	5.8	20
44	Spatial noise correlations in a Si/SiGe two-qubit device from Bell state coherences. Physical Review B, 2020, 101, .	1.1	20
45	5. Diffraction Techniques. Methods in Experimental Physics, 1985, 22, 237-298.	0.1	19
46	Single-crystal silicon/silicon dioxide multilayer heterostructures based on nanomembrane transfer. Applied Physics Letters, 2007, 90, 183107.	1.5	19
47	Neurite Guidance and Three-Dimensional Confinement via Compliant Semiconductor Scaffolds. ACS Nano, 2014, 8, 12219-12227.	7.3	19
48	â€œSoft Siâ€• Effective Stiffness of Supported Crystalline Nanomembranes. ACS Nano, 2011, 5, 5400-5407.	7.3	18
49	Symmetry in Strain Engineering of Nanomembranes: Making New Strained Materials. ACS Nano, 2011, 5, 5532-5542.	7.3	18
50	Conduction band structure and electron mobility in uniaxially strained Si via externally applied strain in nanomembranes. Journal Physics D: Applied Physics, 2011, 44, 325107.	1.3	18
51	Grating-coupled mid-infrared light emission from tensilely strained germanium nanomembranes. Applied Physics Letters, 2013, 103, 201114.	1.5	18
52	Distinct Nucleation and Growth Kinetics of Amorphous SrTiO₃ on (001) SrTiO₃ and SiO₂/Si: A Step toward New Architectures. ACS Applied Materials & Interfaces, 2017, 9, 41034-41042.	4.0	17
53	Consequences of the reciprocity theorem in low-energy electron diffraction. Surface Science, 1971, 25, 444-450.	0.8	16
54	Nanomechanical Architecturesâ€”Mechanics-Driven Fabrication Based on Crystalline Membranes. MRS Bulletin, 2009, 34, 190-195.	1.7	16

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55	Semiconductor nanomembranes: a platform for new properties via strain engineering. Nanoscale Research Letters, 2012, 7, 628.	3.1	16
56	Thermally Processed High-Mobility MOS Thin-Film Transistors on Transferable Single-Crystal Elastically Strain-Sharing Si/SiGe/Si Nanomembranes. IEEE Transactions on Electron Devices, 2008, 55, 810-815.	1.6	15
57	Influence of surface properties on the electrical conductivity of silicon nanomembranes. Nanoscale Research Letters, 2011, 6, 402.	3.1	15
58	Computation with DNA on surfaces. Surface Science, 2002, 500, 699-721.	0.8	13
59	Surface-based DNA computing operations: DESTROY and READOUT. BioSystems, 1999, 52, 189-191.	0.9	12
60	Self-Winding Helices as Slow-Wave Structures for Sub-Millimeter Traveling-Wave Tubes. ACS Nano, 2021, 15, 1229-1239.	7.3	12
61	Facile Fabrication of Ordered Crystallineâ€Semiconductor Microstructures on Compliant Substrates. Advanced Functional Materials, 2014, 24, 1730-1737.	7.8	11
62	Ultrawide strain-tuning of light emission from InGaAs nanomembranes. Applied Physics Letters, 2018, 113, 201105.	1.5	11
63	Passivation of Germanium by Graphene for Stable Graphene/Germanium Heterostructure Devices. ACS Applied Nano Materials, 2019, 2, 4313-4322.	2.4	11
64	The power of surface-based DNA computation (extended abstract). , 1997, , .		10
65	Electronic Transport Properties of Epitaxial Si/SiGe Heterostructures Grown on Single-Crystal SiGe Nanomembranes. ACS Nano, 2015, 9, 4891-4899.	7.3	10
66	Flexible nanomembrane photonic-crystal cavities for tensilely strained-germanium light emission. Applied Physics Letters, 2016, 108, 241107.	1.5	10
67	Observation of large multiple scattering effects in ultrafast electron diffraction on monocrystalline silicon. Physical Review B, 2018, 97, .	1.1	9
68	Fundamental Mechanisms of Film Growth. Semiconductors and Semimetals, 1998, , 49-100.	0.4	8
69	Photopatternable substrateâ€independent poly(glycidyl methacrylateâ€ranâ€2â€(acryloyloxy) ethyl) Tj ETQq1 1 0.784314 rgBT 2008, 46, 5826-5838.	2.5	8
70	Effect of surface bonding on semiconductor nanoribbon wiggling structure. Applied Physics Letters, 2010, 96, 111904.	1.5	8
71	Silicon nanomembranes as a means to evaluate stress evolution in deposited thin films. Extreme Mechanics Letters, 2014, 1, 9-16.	2.0	8
72	High-Ge-Content SiGe Alloy Single Crystals Using the Nanomembrane Platform. ACS Applied Materials & Interfaces, 2020, 12, 20859-20866.	4.0	7

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73	Strain Engineered Silicon Nanomembranes. Journal of Physics: Conference Series, 2007, 61, 652-657.	0.3	6
74	Local-Wetting-Induced Deformation of Rolled-Up Si/Si-Ge Nanomembranes: A Potential Route for Remote Chemical Sensing. IEEE Nanotechnology Magazine, 2011, 10, 21-25.	1.1	6
75	Heteroepitaxial growth on thin sheets and bulk material: exploring differences in strain relaxation via low-energy electron microscopy. Journal Physics D: Applied Physics, 2014, 47, 025305.	1.3	5
76	Flexible Microwave Single-Crystal Si TFTs with f<inf>max</inf> of 5.5 GHz. Device Research Conference, IEEE Annual, 2007, , .	0.0	4
77	Silicon Nanomembranes Incorporating Mixed Crystal Orientations. ECS Transactions, 2009, 16, 215-218.	0.3	4
78	Translation and manipulation of silicon nanomembranes using holographic optical tweezers. Nanoscale Research Letters, 2011, 6, 507.	3.1	4
79	Electronic Transport in Hydrogen-Terminated Si(001) Nanomembranes. Physical Review Applied, 2018, 9, .	1.5	4
80	Effect of Germanium Surface Orientation on Graphene Chemical Vapor Deposition and Graphene-Induced Germanium Nanofaceting. Chemistry of Materials, 2022, 34, 6769-6778.	3.2	4
81	Silicon Nanomembranes with Hybrid Crystal Orientations and Strain States. ACS Applied Materials & Interfaces, 2017, 9, 42372-42382.	4.0	3
82	Three-omega thermal-conductivity measurements with curved heater geometries. Applied Physics Letters, 2020, 117, 073102.	1.5	3
83	Optical Properties of Tensilely Strained Ge Nanomembranes. Nanomaterials, 2018, 8, 407.	1.9	2
84	Strain-Induced Lateral Heterostructures in Patterned Semiconductor Nanomembranes for Micro- and Optoelectronics. ACS Applied Nano Materials, 2021, 4, 6160-6169.	2.4	2
85	Elastically Strain-Sharing Si(110) Nanomembranes. ECS Transactions, 2010, 33, 813-821.	0.3	1
86	High Lateral Resolution Analysis Of Stresses In Silver Thin Films By Means Of Raman Microscopy. , 2010, , .		1
87	Influence of Surface and Interface Properties on the Electrical Conductivity of Silicon Nanomembranes. Advanced Materials Research, 0, 383-390, 7220-7223.	0.3	1
88	Stacked fano resonance photonic crystal nanomembrane high-Q filters. , 2012, , .		1
89	Tensilely strained germanium nanomembranes for direct-bandgap infrared light emission. Proceedings of SPIE, 2014, , .	0.8	1
90	A simple numerical method for evaluating heat dissipation from curved wires with periodic applied heating. Applied Physics Letters, 2021, 119, .	1.5	1

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91	SELF-ORGANIZED ISLAND ARRAYS IN SiGe/Si MULTILAYERS. Series on Directions in Condensed Matter Physics, 1999, , 177-194.	0.1	1
92	Summary Abstract: Thermodynamics of overlayer ordering and epitaxy. Journal of Vacuum Science and Technology, 1982, 21, 554-556.	1.9	0
93	Strained Si-based Nanomembrane Materials. Materials Research Society Symposia Proceedings, 2006, 958, 1.	0.1	0
94	Silicon nanomembranes: Opportunities for new Si functionalities via strain, flexibility, and layering. , 2008, , .		0
95	Group IV crystalline nanomembranes: Materials, technology, and potential applications. , 2009, , .		0
96	Single-Crystalline Elastically Relaxed SiGe Nanomembranes: Substrates for Epitaxial Growth of Defect-Free Strained-Si/SiGe Heterostructures. , 2012, , .		0
97	15-GHz flexible microwave thin-film transistors on plastic. , 2013, , .		0
98	Mechanically Flexible Photonic-Crystal Cavities on Strained-Germanium Nanomembranes. , 2014, , .		0
99	Synchrotron x-ray thermal diffuse scattering probes for phonons in Si/SiGe/Si trilayer nanomembranes. MRS Advances, 2016, 1, 3263-3268.	0.5	0
100	Electronically Driven Structural Dynamics of Si Resolved by Femtosecond Electron Diffraction. Springer Series in Chemical Physics, 2009, , 158-160.	0.2	0
101	Mechanically Flexible Photonic-Crystal Cavities on Strained Germanium Fabricated by Nanomembrane Assembly. , 2016, , .		0
102	Ultrawide Strain Tuning of Luminescence from Mechanically Stressed InGaAs Nanomembranes. , 2019, , .		0