

Matthew A Grayson

List of Publications by Year in descending order

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107
papers

2,284
citations

279701

23
h-index

223716

46
g-index

108
all docs

108
docs citations

108
times ranked

3589
citing authors

#	ARTICLE	IF	CITATIONS
1	GaS and GaSe Ultrathin Layer Transistors. <i>Advanced Materials</i> , 2012, 24, 3549-3554.	11.1	580
2	Continuum of Chiral Luttinger Liquids at the Fractional Quantum Hall Edge. <i>Physical Review Letters</i> , 1998, 80, 1062-1065.	2.9	213
3	Farâ€infrared emission spectroscopy of hot twoâ€dimensional plasmons in Al _{0.3} Ga _{0.7} As/GaAs heterojunctions. <i>Applied Physics Letters</i> , 1995, 67, 2326-2328.	1.5	92
4	Driving Perpendicular Heat Flow: ($\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle T_j \text{ ET} Q_0 \text{ O O rgBT /Overlock 10 Tf}$) for Microscale and Cryogenic Peltier Cooling. <i>Physical Review Letters</i> , 2013, 110, 227701.	2.9	82
5	Inverse design approach to hole doping in ternary oxides: Enhancing $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \text{ display="inline"} \rangle \langle \text{mml:mi} \rangle p \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ -type conductivity in cobalt oxide spinels. <i>Physical Review B</i> , 2011, 84, .	1.1	81
6	Electrical manipulation of the magnetic order in antiferromagnetic PtMn pillars. <i>Nature Electronics</i> , 2020, 3, 92-98.	13.1	65
7	Fermi Liquid to Luttinger Liquid Transition at the Edge of a Two-Dimensional Electron Gas. <i>Physical Review Letters</i> , 2001, 87, .	2.9	62
8	3D extruded composite thermoelectric threads for flexible energy harvesting. <i>Nature Communications</i> , 2019, 10, 5590.	5.8	56
9	Band or Polaron: The Hole Conduction Mechanism in the $\langle i \rangle p \langle i \rangle$ -Type Spinel $\langle \text{scp} \rangle \langle \text{scp} \rangle \text{Rh} \langle \text{sub} \rangle 2 \langle \text{sub} \rangle \text{ZnO} \langle \text{sub} \rangle 4 \langle \text{sub} \rangle \langle \text{scp} \rangle \langle \text{scp} \rangle$. <i>Journal of the American Ceramic Society</i> , 2012, 95, 269-274.	1.9	48
10	Thermal Conductivity of ZIF-8 Thin-Film under Ambient Gas Pressure. <i>ACS Applied Materials & Interfaces</i> , 2017, 9, 28139-28143.	4.0	46
11	Transient photoresponse in amorphous In-Ga-Zn-O thin films under stretched exponential analysis. <i>Journal of Applied Physics</i> , 2013, 113, .	1.1	41
12	p \hat{A} Ã— \hat{A} n-Type Transverse Thermoelectrics: A Novel Type of Thermal Management Material. <i>Journal of Electronic Materials</i> , 2015, 44, 2095-2104.	1.0	40
13	Resonant Tunneling into a Biased Fractional Quantum Hall Edge. <i>Physical Review Letters</i> , 2001, 86, 2645-2648.	2.9	38
14	Structure of a Single Sharp Quantum Hall Edge Probed by Momentum-Resolved Tunneling. <i>Physical Review Letters</i> , 2005, 94, 016805.	2.9	37
15	Blackbody radiation from hot two-dimensional electrons in Al _x Ga _{1-\hat{x}} As/GaAs heterojunctions. <i>Physical Review B</i> , 1993, 47, 16651-16654.	1.1	35
16	Infrared Hall Effect in High-T _c Superconductors: Evidence for Non-Fermi-Liquid Hall Scattering. <i>Physical Review Letters</i> , 2000, 84, 3418-3421.	2.9	35
17	Thermal Conductivity Comparison of Indium Gallium Zinc Oxide Thin Films: Dependence on Temperature, Crystallinity, and Porosity. <i>Journal of Physical Chemistry C</i> , 2016, 120, 7467-7475.	1.5	31
18	Observation of current-induced switching in non-collinear antiferromagnetic IrMn ₃ by differential voltage measurements. <i>Nature Communications</i> , 2021, 12, 3828.	5.8	31

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19	Metallic and insulating states at a bent quantum Hall junction. <i>Physical Review B</i> , 2007, 76, .	1.1	30
20	Polycrystalline ZrTe_5 Parametrized as a Narrow-Band-Gap Semiconductor for Thermoelectric Performance. <i>Physical Review Applied</i> , 2018, 9, .	1.5	26
21	Origin of high carrier concentration in amorphous wide-bandgap oxides: Role of disorder in defect formation and electron localization in In_2O_3 . <i>Journal of Applied Physics</i> , 2020, 127, .	1.1	26
22	Midinfrared Hall effect in thin-film metals: Probing the Fermi surface anisotropy in Au and Cu. <i>Physical Review B</i> , 2000, 61, 8133-8140.	1.1	23
23	Spectral Measurement of the Hall Angle Response in Normal State Cuprate Superconductors. <i>Physical Review Letters</i> , 2002, 89, 037003.	2.9	23
24	Evaporative Thinning: A Facile Synthesis Method for High Quality Ultrathin Layers of 2D Crystals. <i>ACS Nano</i> , 2014, 8, 10851-10857.	7.3	23
25	Corner overgrowth: Bending a high mobility two-dimensional electron system by 90° . <i>Applied Physics Letters</i> , 2005, 86, 032101.	1.5	22
26	Wafer-scale solution-derived molecular gate dielectrics for low-voltage graphene electronics. <i>Applied Physics Letters</i> , 2014, 104, .	1.5	22
27	Quantum Hall effect in a two-dimensional electron system bent by 90° . <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2004, 22, 181-184.	1.3	19
28	Modulating the growth conditions: Si as an acceptor in (110) GaAs for high mobility p-type heterostructures. <i>Applied Physics Letters</i> , 2005, 86, 192106.	1.5	19
29	Magnetic structure of NiS_2 . <i>Physical Review B</i> , 2016, 93, .	1.9	19
30	Novel cleaved edge overgrowth structures for tunneling into one- and two-dimensional electron systems. <i>Solid-State Electronics</i> , 1996, 40, 233-236.	0.8	18
31	Quantum Transport and Sub-Band Structure of Modulation-Doped GaAs/AlAs Core-Shell Superlattice Nanowires. <i>Nano Letters</i> , 2017, 17, 4886-4893.	4.5	18
32	Thermal Sensing With Lithographically Patterned Bimetallic Thin-Film Thermocouples. <i>IEEE Electron Device Letters</i> , 2011, 32, 818-820.	2.2	17
33	All-Electrical Determination of Crystal Orientation in Anisotropic Two-Dimensional Materials. <i>Physical Review Letters</i> , 2018, 120, 086801.	2.9	17
34	A Percolation Model for Piezoresistivity in Conductor-Polymer Composites. <i>Advanced Theory and Simulations</i> , 2019, 2, 1800125.	1.3	16
35	Tunneling in the quantum Hall regime between orthogonal quantum wells. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2002, 12, 125-128.	1.3	15
36	Measuring carrier density in parallel conduction layers of quantum Hall systems. <i>Journal of Applied Physics</i> , 2005, 98, 013709.	1.1	15

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37	Aluminum arsenide cleaved-edge overgrown quantum wires. Applied Physics Letters, 2005, 87, 052101.	1.5	14
38	Optimization of AlAs/AlGaAs quantum well heterostructures on on-axis and misoriented GaAs (111)B. Applied Physics Letters, 2012, 100, 192106.	1.5	14
39	Conversion of Single Crystal (NH ₄) ₂ Mo ₃ S ₁₃ ·H ₂ O to Isomorphic Pseudocrystals of MoS ₂ Nanoparticles. Chemistry of Materials, 2018, 30, 3847-3853.	3.2	14
40	Far-infrared emission from hot quasi-one-dimensional quantum wires in GaAs. Applied Physics Letters, 1995, 67, 1564-1566.	1.5	13
41	Influence of voltmeter impedance on quantum Hall measurements. Journal of Applied Physics, 2005, 98, 013710.	1.1	13
42	Disordered AlAs wires: Temperature-dependent resonance areas within the Fermi-liquid paradigm. Physical Review B, 2006, 74, .	1.1	12
43	Multistates and Polyamorphism in Phase-Change K ₂ Sb ₈ Se ₁₃ . Journal of the American Chemical Society, 2018, 140, 9261-9268.	6.6	12
44	Coherent submillimeter-wave emission from non-equilibrium two-dimensional free carrier plasmas in AlGa/AsGaAs heterojunctions. Surface Science, 1996, 361-362, 368-371.	0.8	11
45	Donor binding energy and thermally activated persistent photoconductivity in high mobility (001) AlAs quantum wells. Applied Physics Letters, 2007, 91, 142120.	1.5	11
46	Single-valley high-mobility (110) AlAs quantum wells with anisotropic mass. Applied Physics Letters, 2008, 93, 132102.	1.5	11
47	Electron correlations at the fractional quantum Hall edge. Solid State Communications, 2006, 140, 66-71.	0.9	10
48	Transport evidence of the lowest Landau-level spin-index anticrossing in (110) GaAs two-dimensional holes. Physical Review B, 2007, 75, .	1.1	10
49	Nanometer-scale sharpness in corner-overgrown heterostructures. Applied Physics Letters, 2008, 93, 193117.	1.5	10
50	Hopping conduction in strongly insulating states of a diffusive bent quantum Hall junction. Physical Review B, 2008, 77, .	1.1	10
51	DC reactive magnetron sputtering, annealing, and characterization of CuAlO ₂ thin films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2011, 29, .	0.9	10
52	Valley degeneracy in biaxially strained aluminum arsenide quantum wells. Physical Review B, 2011, 84, .	1.1	9
53	Amorphous to Crystal Phase Change Memory Effect with Two-Fold Bandgap Difference in Semiconducting K ₂ Bi ₈ Se ₁₃ . Journal of the American Chemical Society, 2021, 143, 6221-6228.	6.6	9
54	New anisotropic behavior of quantum Hall resistance in GaAs heterostructures at mK temperatures and fractional filling factors. Physica E: Low-Dimensional Systems and Nanostructures, 2004, 22, 108-110.	1.3	8

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55	Experimental demonstration of a sharp quantum Hall edge. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2004, 25, 212-218.	1.3	8
56	Thermal Conductivity of InAs/GaSb Type-II Superlattice. <i>Journal of Electronic Materials</i> , 2012, 41, 2322-2325.	1.0	8
57	Thermal conductivity tensors of the cladding and active layers of interband cascade lasers. <i>Applied Physics Letters</i> , 2014, 105, .	1.5	7
58	Sharp quantum Hall edges: Experimental realizations of edge states without incompressible strips. <i>Physica Status Solidi (B): Basic Research</i> , 2008, 245, 356-365.	0.7	6
59	Preparation of Exfoliated Bi ₂ Te ₃ Thin Films. , 2011, , .		6
60	Thermal conductivity tensors of the cladding and active layers of antimonide infrared lasers and detectors. <i>Optical Materials Express</i> , 2013, 3, 1632.	1.6	5
61	Analyzing Longitudinal Magnetoresistance Asymmetry to Quantify Doping Gradients: Generalization of the van der Pauw Method. <i>Physical Review Letters</i> , 2015, 115, 186804.	2.9	5
62	Probing the electrostatics of integer quantum hall edges with momentum-resolved tunnel spectroscopy. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2004, 22, 164-167.	1.3	3
63	Heterostructures overgrown on GaAs corner substrates. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2004, 23, 293-297.	1.3	3
64	Four-point measurements of n- and p-type two-dimensional systems fabricated with cleaved-edge overgrowth. <i>Applied Physics Letters</i> , 2005, 87, 212113.	1.5	3
65	CAPACITIVE CONTACTS: MAKING FOUR-POINT CHARACTERIZATIONS WITHOUT OHMIC CONTACTS. <i>International Journal of Modern Physics B</i> , 2007, 21, 1435-1439.	1.0	3
66	De Haas-van Alphen effect and energy gaps of a correlated two-dimensional electron system in an AlAs two-valley pseudospin system. <i>Physical Review B</i> , 2009, 80, .	1.1	3
67	Optimization of an on-chip active cooling system based on thin-film thermoelectric coolers. , 2010, , .		3
68	Generalized four-point characterization method using capacitive and ohmic contacts. <i>Review of Scientific Instruments</i> , 2012, 83, 024703.	0.6	3
69	Hartree simulations of coupled quantum Hall edge states in corner-overgrown heterostructures. <i>Physical Review B</i> , 2013, 87, .	1.1	3
70	Long-term Room Temperature Instability in Thermal Conductivity of InGaZnO Thin Films. <i>MRS Advances</i> , 2016, 1, 1631-1636.	0.5	3
71	Predictive and Descriptive Models for Transient Photoconductivity in Amorphous Oxide Semiconductors. <i>MRS Advances</i> , 2016, 1, 3441-3446.	0.5	3
72	The Infrared Hall Effect in YBCO: Temperature and Frequency Dependence of Hall Scattering. <i>Journal of Low Temperature Physics</i> , 1999, 117, 1055-1058.	0.6	2

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73	Vertical quantum wire realized with double cleaved-edge overgrowth. Applied Physics Letters, 2006, 89, 032102.	1.5	2
74	Thermal distribution in high power optical devices with power-law thermal conductivity. , 2012, , .		2
75	Thermal conductivity tensor of semiconductor layers using two-wire 3-omega method. Proceedings of SPIE, 2013, , .	0.8	2
76	Background subtraction in Fourier-domain mobility spectrum analysis for resolving low-mobility carriers. , 2017, , .		2
77	Analysis of Carrier Transport in n-Type Hg _{1-x} CdxTe with Ultra-Low Doping Concentration. Journal of Electronic Materials, 2018, 47, 5699-5704.	1.0	2
78	Seebeck Tensor Analysis of (p - n)-type Transverse Thermoelectric Materials. MRS Advances, 2019, 4, 491-497.	0.5	2
79	FAR-INFRARED HALL EFFECT IN NORMAL STATE OF YBCO. International Journal of Modern Physics B, 2002, 16, 3148-3148.	1.0	1
80	The lever-arm model: describing resonant tunneling under bias at a fractional quantum Hall edge. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 12, 80-83.	1.3	1
81	The Structure and Dispersion of a Sharp Quantum Hall Edge Probed by Momentum-Resolved Tunneling. Advances in Solid State Physics, 2004, , 213-226.	0.8	1
82	Towards a new quantum wire structure realizable by double cleaved-edge overgrowth: Characterizing the transfer potential. AIP Conference Proceedings, 2005, , .	0.3	1
83	NOVEL ONE-DIMENSIONAL STATES IN A BENT QUANTUM HALL JUNCTION. International Journal of Modern Physics B, 2007, 21, 1207-1208.	1.0	1
84	InAs•GaSb Type II Superlattices as Low-Temperature Thermoelectrics. AIP Conference Proceedings, 2011, , .	0.3	1
85	The visibility of IQHE at sharp edges: experimental proposals based on interactions and edge electrostatics. New Journal of Physics, 2012, 14, 023015.	1.2	1
86	p - n-type transverse thermoelectrics: an alternative Peltier refrigerator with cryogenic promise. Proceedings of SPIE, 2014, , .	0.8	1
87	Continuous Multi-exponential Method for Analyzing Transient Photoconductivity in Amorphous Oxide Semiconductors. Materials Research Society Symposia Proceedings, 2015, 1731, 49.	0.1	1
88	Cooling power of transverse thermoelectrics for cryogenic cooling. , 2016, , .		1
89	Introduction to (p - n)-Type Transverse Thermoelectrics. , 0, , .		1
90	Bi ₂ Te ₃ filaments via extrusion and pressureless sintering of Bi ₂ Te ₃ -based inks. MRS Communications, 2021, 11, 818-824.	0.8	1

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91	Field-effect conductivity scaling for two-dimensional materials with tunable impurity density. 2D Materials, 0, , .	2.0	1
92	The AC Hall effect in YBCO: temperature and frequency dependence of Hall scattering. Physica B: Condensed Matter, 2000, 284-288, 941-942.	1.3	0
93	Physics and growth of Si-doped two-dimensional high mobility hole gases on (110) oriented GaAs. AIP Conference Proceedings, 2005, , .	0.3	0
94	Preface: phys. stat. sol. (a) 203/14. Physica Status Solidi (A) Applications and Materials Science, 2006, 203, 3393-3393.	0.8	0
95	Preface: phys. stat. sol. (b) 243/14. Physica Status Solidi (B): Basic Research, 2006, 243, 3575-3575.	0.7	0
96	Shadow modulated two-dimensional heterostructures using vertical pillars. Applied Physics Letters, 2008, 92, 173505.	1.5	0
97	Investigation of a contacting scheme for self-assembled cleaved edge overgrown InAs nanowires and quantum dot arrays. Physica Status Solidi (A) Applications and Materials Science, 2009, 206, 1620-1625.	0.8	0
98	Quasiparticle doppelgÄngers. Physics Magazine, 2009, 2, .	0.1	0
99	for Microscale and Cryogenic Peltier Cooling [Phys. Rev. Lett., 227701 (2013)]. Physical Review Letters, 2013, 111, .	2.9	0
100	Introducing Fourier-domain mobility spectrum analysis (FMSA) to deduce multi-component carrier mobility and density. , 2015, , .		0
101	Magnetotransport potentials for anisotropic thin films with stripline and ground plane contacts. Proceedings of SPIE, 2015, , .	0.8	0
102	Modular time division multiplexer: Efficient simultaneous characterization of fast and slow transients in multiple samples. Review of Scientific Instruments, 2016, 87, 093904.	0.6	0
103	Towards p - n transverse thermoelectrics: extreme anisotropic conduction in bulk doped semiconductor thin films via proton implantation. , 2016, , .		0
104	Micro-Scale 2D Thermal Gradiometer. IEEE Electron Device Letters, 2020, 41, 761-764.	2.2	0
105	FAR-INFRARED HALL EFFECT IN NORMAL STATE OF YBCO. , 2002, , .		0
106	Characterizing hysteresis in 2D materials via heavy-tail switching transients in black phosphorous (Conference Presentation). , 2019, , .		0
107	Thermal Conductivity and Thermal Distribution in Superlattice Structures. , 0, , .		0