Matthew A Grayson

List of Publications by Year
in descending order

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107 papers	2,284 citations	279487 23 h-index	223531 46 g-index
108 all docs	108 docs citations	108 times ranked	3589 citing authors

#	Article	IF	Citations
1	Amorphous to Crystal Phase Change Memory Effect with Two-Fold Bandgap Difference in Semiconducting K₂Bi₈Se₁₃. Journal of the American Chemical Society, 2021, 143, 6221-6228.	6.6	9
2	Observation of current-induced switching in non-collinear antiferromagnetic IrMn3 by differential voltage measurements. Nature Communications, 2021, 12, 3828.	5.8	31
3	Bi2Te3 filaments via extrusion and pressureless sintering of Bi2Te3-based inks. MRS Communications, 2021, 11, 818-824.	0.8	1
4	Origin of high carrier concentration in amorphous wide-bandgap oxides: Role of disorder in defect formation and electron localization in In2O3â^'x. Journal of Applied Physics, 2020, 127, .	1.1	26
5	Electrical manipulation of the magnetic order in antiferromagnetic PtMn pillars. Nature Electronics, 2020, 3, 92-98.	13.1	65
6	Micro-Scale 2D Thermal Gradiometer. IEEE Electron Device Letters, 2020, 41, 761-764.	2.2	0
7	Seebeck Tensor Analysis of (p Ã— n)-type Transverse Thermoelectric Materials. MRS Advances, 2019, 4, 491-497.	0.5	2
8	3D extruded composite thermoelectric threads for flexible energy harvesting. Nature Communications, 2019, 10, 5590.	5.8	56
9	A Percolation Model for Piezoresistivity in Conductorâ€“Polymer Composites. Advanced Theory and Simulations, 2019, 2, 1800125.	1.3	16
10	Characterizing hysteresis in 2D materials via heavy-tail switching transients in black phosphorous (Conference Presentation). , 2019, , .		0
11	All-Electrical Determination of Crystal Orientation in Anisotropic Two-Dimensional Materials. Physical Review Letters, 2018, 120, 086801.	2.9	17
12	Polycrystalline <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>ZrTe</mml:mi></mml:mrow><mml:mrow><mml:mn>5</mml:mn></m Parametrized as a Narrow-Band-Gap Semiconductor for Thermoelectric Performance. Physical Review Applied, 2018, 9, .	1.5	26
13	Conversion of Single Crystal (NH4)2Mo3S13Â·H2O to Isomorphic Pseudocrystals of MoS2Nanoparticles. Chemistry of Materials, 2018, 30, 3847-3853.	3.2	14
14	Multistates and Polyamorphism in Phase-Change K₂Sb₈Se₁₃. Journal of the American Chemical Society, 2018, 140, 9261-9268.	6.6	12
15	Analysis of Carrier Transport in n-Type Hg1â^'xCdxTe with Ultra-Low Doping Concentration. Journal of Electronic Materials, 2018, 47, 5699-5704.	1.0	2
16	Background subtraction in Fourier-domain mobility spectrum analysis for resolving low-mobility carriers. , 2017, , .		2
17	Quantum Transport and Sub-Band Structure of Modulation-Doped GaAs/AlAs Coreâ€“Superlattice Nanowires. Nano Letters, 2017, 17, 4886-4893.	4.5	18
18	Thermal Conductivity of ZIF-8 Thin-Film under Ambient Gas Pressure. ACS Applied Materials & Interfaces, 2017, 9, 28139-28143.	4.0	46

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19	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
20	Long-term Room Temperature Instability in Thermal Conductivity of InGaZnO Thin Films. MRS Advances, 2016, 1, 1631-1636.	0.5	3
21	Predictive and Descriptive Models for Transient Photoconductivity in Amorphous Oxide Semiconductors. MRS Advances, 2016, 1, 3441-3446.	0.5	3
22	Cooling power of transverse thermoelectrics for cryogenic cooling. , 2016, , .		1
23	Magnetic structure of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>NiS</mml:mi><mml:mrow><mml:mn>2</mml:mn> Physical Review B, 2016, 93, .	0.7	19
24	Towards p Ã— n transverse thermoelectrics: extreme anisotropic conduction in bulk doped semiconductor thin films via proton implantation. , 2016, , .		0
25	Thermal Conductivity Comparison of Indium Gallium Zinc Oxide Thin Films: Dependence on Temperature, Crystallinity, and Porosity. Journal of Physical Chemistry C, 2016, 120, 7467-7475.	1.5	31
26	Continuous Multi-exponential Method for Analyzing Transient Photoconductivity in Amorphous Oxide Semiconductors. Materials Research Society Symposia Proceedings, 2015, 1731, 49.	0.1	1
27	Analyzing Longitudinal Magnetoresistance Asymmetry to Quantify Doping Gradients: Generalization of the van der Pauw Method. Physical Review Letters, 2015, 115, 186804.	2.9	5
28	Introducing Fourier-domain mobility spectrum analysis (FMSA) to deduce multi-component carrier mobility and density. , 2015, , .		0
29	Magnetotransport potentials for anisotropic thin films with stripline and ground plane contacts. Proceedings of SPIE, 2015, , .	0.8	0
30	pÂÃ—Ân-Type Transverse Thermoelectrics: A Novel Type of Thermal Management Material. Journal of Electronic Materials, 2015, 44, 2095-2104.	1.0	40
31	Thermal conductivity tensors of the cladding and active layers of interband cascade lasers. Applied Physics Letters, 2014, 105, .	1.5	7
32	p Ã— n-type transverse thermoelectrics: an alternative Peltier refrigerator with cryogenic promise. Proceedings of SPIE, 2014, , .	0.8	1
33	Wafer-scale solution-derived molecular gate dielectrics for low-voltage graphene electronics. Applied Physics Letters, 2014, 104, .	1.5	22
34	Evaporative Thinning: A Facile Synthesis Method for High Quality Ultrathin Layers of 2D Crystals. ACS Nano, 2014, 8, 10851-10857.	7.3	23
35	Transient photoresponse in amorphous In-Ga-Zn-O thin films under stretched exponential analysis. Journal of Applied Physics, 2013, 113, .	1.1	41
36	Publisherâ€™s Note: Driving Perpendicular Heat Flow: (<mml:math) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 77 Td (xmlns:mml="http://ww for Microscale and Cryogenic Peltier Cooling [Phys. Rev. Lett.110, 227701 (2013)]. Physical Review Letters, 2013, 111, .	2.9	0

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37	Driving Perpendicular Heat Flow: (<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML") Tj ETQq1 1 0.784314 rgBT /Over for Microscale and Cryogenic Peltier Cooling. Physical Review Letters, 2013, 110, 227701.	2.9	82
38	Thermal conductivity tensor of semiconductor layers using two-wire 3-omega method. Proceedings of SPIE, 2013, , .	0.8	2
39	Thermal conductivity tensors of the cladding and active layers of antimonide infrared lasers and detectors. Optical Materials Express, 2013, 3, 1632.	1.6	5
40	Hartree simulations of coupled quantum Hall edge states in corner-overgrown heterostructures. Physical Review B, 2013, 87, .	1.1	3
41	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
42	Thermal distribution in high power optical devices with power-law thermal conductivity. , 2012, , .		2
43	Optimization of AlAs/AlGaAs quantum well heterostructures on on-axis and misoriented GaAs (111)B. Applied Physics Letters, 2012, 100, 192106.	1.5	14
44	Thermal Conductivity of InAs/GaSb TypeÂII Superlattice. Journal of Electronic Materials, 2012, 41, 2322-2325.	1.0	8
45	Generalized four-point characterization method using capacitive and ohmic contacts. Review of Scientific Instruments, 2012, 83, 024703.	0.6	3
46	GaS and GaSe Ultrathin Layer Transistors. Advanced Materials, 2012, 24, 3549-3554.	11.1	580
47	Band or Polaron: The Hole Conduction Mechanism in the pâ€Type Spinel <scp><scp>Rh₂ZnO₄</scp></scp>. Journal of the American Ceramic Society, 2012, 95, 269-274.	1.9	48
48	Thermal Sensing With Lithographically Patterned Bimetallic Thin-Film Thermocouples. IEEE Electron Device Letters, 2011, 32, 818-820.	2.2	17
49	Valley degeneracy in biaxially strained aluminum arsenide quantum wells. Physical Review B, 2011, 84, .	1.1	9
50	Inverse design approach to hole doping in ternary oxides: Enhancing<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>p</mml:mi></mml:math>-type conductivity in cobalt oxide spinels. Physical Review B, 2011, 84, .	1.1	81
51	InAsâ^•GaSb Type II Superlattices as Low-Temperature Thermoelectrics. AIP Conference Proceedings, 2011, , .	0.3	1
52	Preparation of Exfoliated Bi[sub 2]Te[sub 3] Thin Films. , 2011, , .		6
53	DC reactive magnetron sputtering, annealing, and characterization of CuAlO2 thin films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 2011, 29, .	0.9	10
54	Optimization of an on-chip active cooling system based on thin-film thermoelectric coolers. , 2010, , .		3

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55	De Haas-van Alphen effect and energy gaps of a correlated two-dimensional electron system in an AlAs two-valley pseudospin system. Physical Review B, 2009, 80, .	1.1	3
56	Investigation of a contacting scheme for selfâ€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
57	Quasiparticle doppelgÃngers. Physics Magazine, 2009, 2, .	0.1	0
58	Sharp quantum Hall edges: Experimental realizations of edge states without incompressible strips. Physica Status Solidi (B): Basic Research, 2008, 245, 356-365.	0.7	6
59	Nanometer-scale sharpness in corner-overgrown heterostructures. Applied Physics Letters, 2008, 93, 193117.	1.5	10
60	Single-valley high-mobility (110) AlAs quantum wells with anisotropic mass. Applied Physics Letters, 2008, 93, 132102.	1.5	11
61	Shadow modulated two-dimensional heterostructures using vertical pillars. Applied Physics Letters, 2008, 92, 173505.	1.5	0
62	Hopping conduction in strongly insulating states of a diffusive bent quantum Hall junction. Physical Review B, 2008, 77, .	1.1	10
63	CAPACITIVE CONTACTS: MAKING FOUR-POINT CHARACTERIZATIONS WITHOUT OHMIC CONTACTS. International Journal of Modern Physics B, 2007, 21, 1435-1439.	1.0	3
64	NOVEL ONE-DIMENSIONAL STATES IN A BENT QUANTUM HALL JUNCTION. International Journal of Modern Physics B, 2007, 21, 1207-1208.	1.0	1
65	Transport evidence of the lowest Landau-level spin-index anticrossing in (110) GaAs two-dimensional holes. Physical Review B, 2007, 75, .	1.1	10
66	Metallic and insulating states at a bent quantum Hall junction. Physical Review B, 2007, 76, .	1.1	30
67	Donor binding energy and thermally activated persistent photoconductivity in high mobility (001) AlAs quantum wells. Applied Physics Letters, 2007, 91, 142120.	1.5	11
68	Preface: phys. stat. sol. (a) 203/14. Physica Status Solidi (A) Applications and Materials Science, 2006, 203, 3393-3393.	0.8	0
69	Preface: phys. stat. sol. (b) 243/14. Physica Status Solidi (B): Basic Research, 2006, 243, 3575-3575.	0.7	0
70	Electron correlations at the fractional quantum Hall edge. Solid State Communications, 2006, 140, 66-71.	0.9	10
71	Vertical quantum wire realized with double cleaved-edge overgrowth. Applied Physics Letters, 2006, 89, 032102.	1.5	2
72	Disordered AlAs wires: Temperature-dependent resonance areas within the Fermi-liquid paradigm. Physical Review B, 2006, 74, .	1.1	12

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73	Physics and growth of Si-doped two-dimensional high mobility hole gases on (110) oriented GaAs. AIP Conference Proceedings, 2005, , .	0.3	0
74	Towards a new quantum wire structure realizable by double cleaved-edge overgrowth: Characterizing the transfer potential. AIP Conference Proceedings, 2005, , .	0.3	1
75	Measuring carrier density in parallel conduction layers of quantum Hall systems. Journal of Applied Physics, 2005, 98, 013709.	1.1	15
76	Influence of voltmeter impedance on quantum Hall measurements. Journal of Applied Physics, 2005, 98, 013710.	1.1	13
77	Corner overgrowth: Bending a high mobility two-dimensional electron system by 90Â°. Applied Physics Letters, 2005, 86, 032101.	1.5	22
78	Structure of a Single Sharp Quantum Hall Edge Probed by Momentum-Resolved Tunneling. Physical Review Letters, 2005, 94, 016805.	2.9	37
79	Modulating the growth conditions: Si as an acceptor in (110) GaAs for high mobility p-type heterostructures. Applied Physics Letters, 2005, 86, 192106.	1.5	19
80	Four-point measurements of n- and p-type two-dimensional systems fabricated with cleaved-edge overgrowth. Applied Physics Letters, 2005, 87, 212113.	1.5	3
81	Aluminum arsenide cleaved-edge overgrown quantum wires. Applied Physics Letters, 2005, 87, 052101.	1.5	14
82	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
83	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
84	Probing the electrostatics of integer quantum hall edges with momentum-resolved tunnel spectroscopy. Physica E: Low-Dimensional Systems and Nanostructures, 2004, 22, 164-167.	1.3	3
85	Quantum Hall effect in a two-dimensional electron system bent by 90Â°. Physica E: Low-Dimensional Systems and Nanostructures, 2004, 22, 181-184.	1.3	19
86	Heterostructures overgrown on GaAs corner substrates. Physica E: Low-Dimensional Systems and Nanostructures, 2004, 23, 293-297.	1.3	3
87	Experimental demonstration of a sharp quantum Hall edge. Physica E: Low-Dimensional Systems and Nanostructures, 2004, 25, 212-218.	1.3	8
88	Spectral Measurement of the Hall Angle Response in Normal State Cuprate Superconductors. Physical Review Letters, 2002, 89, 037003.	2.9	23
89	FAR-INFRARED HALL EFFECT IN NORMAL STATE OF YBCO. International Journal of Modern Physics B, 2002, 16, 3148-3148.	1.0	1
90	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

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91	Tunneling in the quantum Hall regime between orthogonal quantum wells. Physica E: Low-Dimensional Systems and Nanostructures, 2002, 12, 125-128.	1.3	15
92	FAR-INFRARED HALL EFFECT IN NORMAL STATE OF YBCO. , 2002, , .		0
93	Resonant Tunneling into a Biased Fractional Quantum Hall Edge. Physical Review Letters, 2001, 86, 2645-2648.	2.9	38
94	Fermi Liquid to Luttinger Liquid Transition at the Edge of a Two-Dimensional Electron Gas. Physical Review Letters, 2001, 87, .	2.9	62
95	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
96	Infrared Hall Effect in High-TcSuperconductors: Evidence for Non-Fermi-Liquid Hall Scattering. Physical Review Letters, 2000, 84, 3418-3421.	2.9	35
97	Midinfrared Hall effect in thin-film metals:â€ƒProbing the Fermi surface anisotropy in Au and Cu. Physical Review B, 2000, 61, 8133-8140.	1.1	23
98	The Infrared Hall Effect in YBCO: Temperature and Frequency Dependence of Hall Scattering. Journal of Low Temperature Physics, 1999, 117, 1055-1058.	0.6	2
99	Continuum of Chiral Luttinger Liquids at the Fractional Quantum Hall Edge. Physical Review Letters, 1998, 80, 1062-1065.	2.9	213
100	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
101	Novel cleaved edge overgrowth structures for tunneling into one- and two-dimensional electron systems. Solid-State Electronics, 1996, 40, 233-236.	0.8	18
102	Farâ€infrared emission from hot quasiâ€oneâ€dimensional quantum wires in GaAs. Applied Physics Letters, 1995, 67, 1564-1566.	1.5	13
103	Farâ€infrared emission spectroscopy of hot twoâ€dimensional plasmons in Al0.3Ga0.7As/GaAs heterojunctions. Applied Physics Letters, 1995, 67, 2326-2328.	1.5	92
104	Blackbody radiation from hot two-dimensional electrons inAlxGa1â^'xAs/GaAs heterojunctions. Physical Review B, 1993, 47, 16651-16654.	1.1	35
105	Introduction to (p Ã— n)-Type Transverse Thermoelectrics. , 0, , .		1
106	Thermal Conductivity and Thermal Distribution in Superlattice Structures. , 0, , .		0
107	Field-effect conductivity scaling for two-dimensional materials with tunable impurity density. 2D Materials, 0, , .	2.0	1