

Wenzhuo Wu

List of Publications by Year in descending order

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136
papers

15,771
citations

24978

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140
all docs

140
docs citations

140
times ranked

15828
citing authors

#	ARTICLE	IF	CITATIONS
1	Scalably Nanomanufactured Atomically Thin Materials-Based Wearable Health Sensors. Small Structures, 2022, 3, 2100120.	6.9	16
2	Hydrogel Ionotronics with Ultra-Low Impedance and High Signal Fidelity across Broad Frequency and Temperature Ranges. Advanced Functional Materials, 2022, 32, 2109506.	7.8	34
3	The resurrection of tellurium as an elemental two-dimensional semiconductor. Npj 2D Materials and Applications, 2022, 6, .	3.9	36
4	2D Materials for Wearable Energy Harvesting. Advanced Materials Technologies, 2022, 7, .	3.0	16
5	Abnormal in-plane thermal conductivity anisotropy in bilayer \pm -phase tellurene. International Journal of Heat and Mass Transfer, 2022, 192, 122908.	2.5	2
6	Active Multiobject Exploration and Recognition via Tactile Whiskers. IEEE Transactions on Robotics, 2022, 38, 3479-3497.	7.3	2
7	Selenene and Tellurene. , 2022, , 197-224.		2
8	Emerging beyond-graphene elemental 2D materials for energy and catalysis applications. Chemical Society Reviews, 2021, 50, 10983-11031.	18.7	170
9	Design and engineering of high-performance triboelectric nanogenerator for ubiquitous unattended devices. EcoMat, 2021, 3, e12093.	6.8	39
10	Data-driven learning of process-property-performance relation in laser-induced aqueous manufacturing and integration of ZnO piezoelectric nanogenerator for self-powered nanosensors. Nano Energy, 2021, 83, 105820.	8.2	12
11	Hybrid Nanomanufacturing for Wearable Intelligence. ECS Meeting Abstracts, 2021, MA2021-01, 1131-1131.	0.0	0
12	Fatigue-Free Electrodes Enabled Joule Heating Device for Wearable Thermotherapy. ECS Meeting Abstracts, 2021, MA2021-01, 1130-1130.	0.0	0
13	Piezoelectric Phototronic Effect in 2D $\text{In}_2\text{Se}_3/\text{WSe}_2$ van der Waals Heterostructure for Photodetector with Enhanced Photoresponse. Advanced Optical Materials, 2021, 9, 2100864.	3.6	37
14	Dynamics of Electrically Driven Cholesteric Liquid Crystals by Triboelectrification and Their Application in Self-Powered Information Securing and Vision Correcting. ACS Energy Letters, 2021, 6, 3185-3194.	8.8	11
15	High-Performance Piezoelectrocatalytic Sensing of Ascorbic Acid with Nanostructured Wurtzite Zinc Oxide. Advanced Materials, 2021, 33, e2105697.	11.1	38
16	Bilayer Quantum Hall States in an n-Type Wide Tellurium Quantum Well. Nano Letters, 2021, 21, 7527-7533.	4.5	6
17	Hybrid printing of wearable piezoelectric sensors. Nano Energy, 2021, 90, 106522.	8.2	31
18	High-Frequency Tellurene MOSFETs with Biased Contacts. , 2021, , .		0

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19	Magnetically Aligned Ultrafine Cobalt Embedded 3D Porous Carbon Metamaterial by One-Step Ultrafast Laser Direct Writing. <i>Advanced Science</i> , 2021, 8, e2102477.	5.6	9
20	Enhancement of patterned triboelectric output performance by an interfacial polymer layer for energy harvesting application. <i>Nanoscale</i> , 2021, 13, 20615-20624.	2.8	9
21	Anisotropic thermal conductivity in 2D tellurium. <i>2D Materials</i> , 2020, 7, 015008.	2.0	39
22	Tellurene Photodetector with High Gain and Wide Bandwidth. <i>ACS Nano</i> , 2020, 14, 303-310.	7.3	101
23	Ink-Based Additive Nanomanufacturing of Functional Materials for Human-Integrated Smart Wearables. <i>Advanced Intelligent Systems</i> , 2020, 2, 2000117.	3.3	17
24	Ultrafast photoinduced band splitting and carrier dynamics in chiral tellurium nanosheets. <i>Nature Communications</i> , 2020, 11, 3991.	5.8	39
25	Parallel Nanoimprint Forming of One-Dimensional Chiral Semiconductor for Strain-Engineered Optical Properties. <i>Nano-Micro Letters</i> , 2020, 12, 160.	14.4	8
26	Inkjet-Printed Wearable Nanosystems for Self-Powered Technologies. <i>Advanced Materials Interfaces</i> , 2020, 7, 2000015.	1.9	41
27	Stable mid-infrared polarization imaging based on quasi-2D tellurium at room temperature. <i>Nature Communications</i> , 2020, 11, 2308.	5.8	259
28	Gate-tunable strong spin-orbit interaction in two-dimensional tellurium probed by weak antilocalization. <i>Physical Review B</i> , 2020, 101, .	1.1	29
29	Bio-Derived Natural Materials Based Triboelectric Devices for Self-Powered Ubiquitous Wearable and Implantable Intelligent Devices. <i>Advanced Sustainable Systems</i> , 2020, 4, 2000108.	2.7	42
30	Strain-Engineered Anisotropic Optical and Electrical Properties in 2D Chiral-Chain Tellurium. <i>Advanced Materials</i> , 2020, 32, e2002342.	11.1	40
31	Piezoelectric biaxial strain effects on the optical and photoluminescence spectra of 2D III-VI compound In_2Se_3 nanosheets. <i>Applied Physics Letters</i> , 2020, 116, .	1.5	17
32	Holistically Engineered Polymer-Polymer-Ion Interactions in Biocompatible Polyvinyl Alcohol Blends for High-Performance Triboelectric Devices in Self-Powered Wearable Cardiovascular Monitorings. <i>Advanced Materials</i> , 2020, 32, e2002878.	11.1	66
33	Quantum Hall effect of Weyl fermions in n-type semiconducting tellurene. <i>Nature Nanotechnology</i> , 2020, 15, 585-591.	15.6	63
34	Raman response and transport properties of tellurium atomic chains encapsulated in nanotubes. <i>Nature Electronics</i> , 2020, 3, 141-147.	18.1	126
35	(Invited) 2D Tellurene for Novel Electronics and Sensors. <i>ECS Meeting Abstracts</i> , 2020, MA2020-01, 1417-1417.	0.0	0
36	Microscopic origin of inhomogeneous transport in four-terminal tellurene devices. <i>Applied Physics Letters</i> , 2020, 117, .	1.5	0

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37	Preface“JSS Focus Issue on Solid-State Materials and Devices for Biological and Medical Applications. ECS Journal of Solid State Science and Technology, 2020, 9, 110001.	0.9	0
38	An Innovative Laser Metasurface Fabrication Technique for Highly Flexible Optoelectronic Devices. Journal of Micro and Nano-Manufacturing, 2020, 8, .	0.8	0
39	2D-material-enabled multifunctional mid-IR optoelectronics. , 2020, , .		0
40	(Invited) Hybrid Nanomanufacturing of Heterostructured Wearable Devices for Self-powered Smart Wearables. ECS Meeting Abstracts, 2020, MA2020-02, 3712-3712.	0.0	0
41	Room-Temperature Electrocaloric Effect in Layered Ferroelectric CuInP_2S_6 for Solid-State Refrigeration. ACS Nano, 2019, 13, 8760-8765.	7.3	69
42	Tellurene: A Multifunctional Material for Midinfrared Optoelectronics. ACS Photonics, 2019, 6, 1632-1638.	3.2	60
43	Scalable nanomanufacturing of inkjet-printed wearable energy storage devices. Journal of Materials Chemistry A, 2019, 7, 23280-23300.	5.2	44
44	Hybrid nanomanufacturing of mixed-dimensional manganese oxide/graphene aerogel macroporous hierarchy for ultralight efficient supercapacitor electrodes in self-powered ubiquitous nanosystems. Nano Energy, 2019, 66, 104124.	8.2	30
45	Infrared ultrafast spectroscopy of solution-grown thin film tellurium. Physical Review B, 2019, 100, .	1.1	13
46	Imaging Carrier Inhomogeneities in Ambipolar Tellurene Field Effect Transistors. Nano Letters, 2019, 19, 1289-1294.	4.5	31
47	The mechanism of controlled integration of ZnO nanowires using pulsed-laser-induced chemical deposition. Nanoscale, 2019, 11, 2617-2623.	2.8	12
48	The impact of cathode surface roughness and multiple breakdown events on microscale gas breakdown at atmospheric pressure. Journal of Applied Physics, 2019, 125, 203302.	1.1	20
49	Chitosan biopolymer-derived self-powered triboelectric sensor with optimized performance through molecular surface engineering and data-driven learning. Informa“Materially, 2019, 1, 116-125.	8.5	47
50	Solid-phase synthesis of atomically thin two-dimensional non-layered MoO_2 nanosheets for surface enhanced Raman spectroscopy. Journal of Materials Chemistry C, 2019, 7, 7196-7200.	2.7	23
51	One-step fabrication of 2D circuits. Nature Electronics, 2019, 2, 142-143.	13.1	0
52	Wearable high-dielectric-constant polymers with core“shell liquid metal inclusions for biomechanical energy harvesting and a self-powered user interface. Journal of Materials Chemistry A, 2019, 7, 7109-7117.	5.2	48
53	Thermoelectric Performance of 2D Tellurium with Accumulation Contacts. Nano Letters, 2019, 19, 1955-1962.	4.5	81
54	An all-textile triboelectric sensor for wearable teleoperated human“machine interaction. Journal of Materials Chemistry A, 2019, 7, 26804-26811.	5.2	57

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55	A ferroelectric semiconductor field-effect transistor. <i>Nature Electronics</i> , 2019, 2, 580-586.	13.1	317
56	Data-driven and probabilistic learning of the process-structure-property relationship in solution-grown tellurene for optimized nanomanufacturing of high-performance nanoelectronics. <i>Nano Energy</i> , 2019, 57, 480-491.	8.2	44
57	Scalable nanomanufacturing and assembly of chiral-chain piezoelectric tellurium nanowires for wearable self-powered cardiovascular monitoring. <i>Nano Futures</i> , 2019, 3, 011001.	1.0	16
58	Phase transition in two-dimensional tellurene under mechanical strain modulation. <i>Nano Energy</i> , 2019, 58, 202-210.	8.2	43
59	Solution-synthesized chiral piezoelectric selenium nanowires for wearable self-powered human-integrated monitoring. <i>Nano Energy</i> , 2019, 56, 693-699.	8.2	71
60	Emerging Devices Based on Two-Dimensional Monolayer Materials for Energy Harvesting. <i>Research</i> , 2019, 2019, 7367828.	2.8	39
61	(Invited) Hybrid Nanomanufacturing of Heterostructured Wearable Devices for Self-Powered User Interface. <i>ECS Meeting Abstracts</i> , 2019, , .	0.0	0
62	(Invited) Scalably-Nanomanufactured 2-D Tellurene for Ubiquitous Electronics and Smart Sensors. <i>ECS Meeting Abstracts</i> , 2019, , .	0.0	0
63	(Invited) High-Performance 2D Tellurium Transistors Towards CMOS Logic Applications. <i>ECS Meeting Abstracts</i> , 2019, , .	0.0	0
64	(Invited) Scalably-Nanomanufactured Tellurene: An Emerging 2-D Multifunctional Material. <i>ECS Meeting Abstracts</i> , 2019, , .	0.0	0
65	Field-effect transistors made from solution-grown two-dimensional tellurene. <i>Nature Electronics</i> , 2018, 1, 228-236.	13.1	591
66	Engineered and Laser-Processed Chitosan Biopolymers for Sustainable and Biodegradable Triboelectric Power Generation. <i>Advanced Materials</i> , 2018, 30, 1706267.	11.1	172
67	Large-Area Direct Laser-Shock Imprinting of a 3D Biomimic Hierarchical Metal Surface for Triboelectric Nanogenerators. <i>Advanced Materials</i> , 2018, 30, 1705840.	11.1	93
68	Tellurium: Fast Electrical and Atomic Transport along the Weak Interaction Direction. <i>Journal of the American Chemical Society</i> , 2018, 140, 550-553.	6.6	101
69	High-Performance Few-Layer Tellurium CMOS Devices Enabled by Atomic Layer Deposited Dielectric Doping Technique. , 2018, , .		16
70	Metabolomic insights of macrophage responses to graphene nanoplatelets: Role of scavenger receptor CD36. <i>PLoS ONE</i> , 2018, 13, e0207042.	1.1	12
71	Piezotronics and piezo-phototronics with third-generation semiconductors. <i>MRS Bulletin</i> , 2018, 43, 922-927.	1.7	121
72	Wafer-scale Material-device Correlation of Tellurene MOSFETs. , 2018, , .		2

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73	Tellurene: its physical properties, scalable nanomanufacturing, and device applications. Chemical Society Reviews, 2018, 47, 7203-7212.	18.7	214
74	Laser-Based Fabrication of Carbon Nanotube-Silver Composites With Enhanced Fatigue Performance Onto a Flexible Substrate. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2018, 140, .	1.3	9
75	Quantum Transport and Band Structure Evolution under High Magnetic Field in Few-Layer Tellurene. Nano Letters, 2018, 18, 5760-5767.	4.5	60
76	(Invited) Large-Area Solution-Nanomanufactured Air-Stable 2D Material for High-Performance Electronics and Smart Sensors. ECS Meeting Abstracts, 2018, , .	0.0	0
77	Self-electrochemiluminescence of CdTe nanocrystals capped with 2-diethylaminoethanethiol. Chemical Communications, 2017, 53, 5388-5391.	2.2	11
78	Lignin biopolymer based triboelectric nanogenerators. APL Materials, 2017, 5, .	2.2	54
79	One-Dimensional van der Waals Material Tellurium: Raman Spectroscopy under Strain and Magneto-Transport. Nano Letters, 2017, 17, 3965-3973.	4.5	272
80	Controlled Growth of a Large-Size 2D Selenium Nanosheet and Its Electronic and Optoelectronic Applications. ACS Nano, 2017, 11, 10222-10229.	7.3	189
81	Piezotronic effect in 1D van der Waals solid of elemental tellurium nanobelt for smart adaptive electronics. Semiconductor Science and Technology, 2017, 32, 104004.	1.0	32
82	Piezo-Phototronic Effect on Selective Electron or Hole Transport through Depletion Region of Vis-NIR Broadband Photodiode. Advanced Materials, 2017, 29, 1701412.	11.1	82
83	Piezotronic Effect Modulated Heterojunction Electron Gas in AlGaIn/AlIn/GaN Heterostructure Microwire. Advanced Materials, 2016, 28, 7234-7242.	11.1	100
84	Ultrafast Response p-Si/n-ZnO Heterojunction Ultraviolet Detector Based on Pyro-Phototronic Effect. Advanced Materials, 2016, 28, 6880-6886.	11.1	176
85	Lithium ion battery anodes using Si-Fe based nanocomposite structures. Nano Energy, 2016, 26, 37-42.	8.2	62
86	Piezophototronic Effect in Single-Atomic-Layer MoS ₂ for Strain-Gated Flexible Optoelectronics. Advanced Materials, 2016, 28, 8463-8468.	11.1	187
87	Piezotronics and piezo-phototronics for adaptive electronics and optoelectronics. Nature Reviews Materials, 2016, 1, .	23.3	438
88	Optoelectronic Properties of Solution Grown ZnO n-p or p-n Core-Shell Nanowire Arrays. ACS Applied Materials & Interfaces, 2016, 8, 4287-4291.	4.0	42
89	High-performance piezoelectric nanogenerators for self-powered nanosystems: quantitative standards and figures of merit. Nanotechnology, 2016, 27, 112503.	1.3	19
90	(Invited) Piezotronics in 1D/2D Nanomaterials for Active and Adaptive Nano-Electronics/Optoelectronics. ECS Transactions, 2015, 69, 33-39.	0.3	0

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91	Piezo-phototronic Boolean Logic and Computation Using Photon and Strain Dual-Gated Nanowire Transistors. <i>Advanced Materials</i> , 2015, 27, 940-947.	11.1	46
92	Temperature Dependence of the Piezophototronic Effect in CdS Nanowires. <i>Advanced Functional Materials</i> , 2015, 25, 5277-5284.	7.8	50
93	Temperature Dependence of the Piezotronic and Piezophototronic Effects in <i>c</i> -axis GaN Nanobelts. <i>Advanced Materials</i> , 2015, 27, 8067-8074.	11.1	60
94	Clear Experimental Demonstration of Hole Gas Accumulation in Ge/Si Core-Shell Nanowires. <i>ACS Nano</i> , 2015, 9, 12182-12188.	7.3	33
95	Piezotronic Effect in Strain-Gated Transistor of <i>c</i> -Axis GaN Nanobelt. <i>ACS Nano</i> , 2015, 9, 9822-9829.	7.3	43
96	Development and progress in piezotronics. <i>Nano Energy</i> , 2015, 14, 276-295.	8.2	84
97	Optimizing Performance of Silicon-Based μ n Junction Photodetectors by the Piezo-Phototronic Effect. <i>ACS Nano</i> , 2014, 8, 12866-12873.	7.3	120
98	Pyroelectric-field driven defects diffusion along <i>c</i> -axis in ZnO nanobelts under high-energy electron beam irradiation. <i>Journal of Applied Physics</i> , 2014, 116, .	1.1	16
99	Solution-Derived ZnO Homojunction Nanowire Films on Wearable Substrates for Energy Conversion and Self-Powered Gesture Recognition. <i>Nano Letters</i> , 2014, 14, 6897-6905.	4.5	123
100	Triboelectrification Based Motion Sensor for Human-Machine Interfacing. <i>ACS Applied Materials & Interfaces</i> , 2014, 6, 7479-7484.	4.0	162
101	Self-powered triboelectric velocity sensor for dual-mode sensing of rectified linear and rotary motions. <i>Nano Energy</i> , 2014, 10, 305-312.	8.2	78
102	Piezotronics and piezo-phototronics: fundamentals and applications. <i>National Science Review</i> , 2014, 1, 62-90.	4.6	231
103	Hybridizing Triboelectrification and Electromagnetic Induction Effects for High-Efficient Mechanical Energy Harvesting. <i>ACS Nano</i> , 2014, 8, 7442-7450.	7.3	112
104	Silicon-based hybrid cell for harvesting solar energy and raindrop electrostatic energy. <i>Nano Energy</i> , 2014, 9, 291-300.	8.2	225
105	Piezoelectricity of single-atomic-layer MoS ₂ for energy conversion and piezotronics. <i>Nature</i> , 2014, 514, 470-474.	13.7	1,762
106	Dual-Mode Triboelectric Nanogenerator for Harvesting Water Energy and as a Self-Powered Ethanol Nanosensor. <i>ACS Nano</i> , 2014, 8, 6440-6448.	7.3	222
107	Self-Powered Trajectory, Velocity, and Acceleration Tracking of a Moving Object/Body using a Triboelectric Sensor. <i>Advanced Functional Materials</i> , 2014, 24, 7488-7494.	7.8	161
108	Triboelectric Active Sensor Array for Self-Powered Static and Dynamic Pressure Detection and Tactile Imaging. <i>ACS Nano</i> , 2013, 7, 8266-8274.	7.3	529

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109	Effective piezo-phototronic enhancement of solar cell performance by tuning material properties. <i>Nano Energy</i> , 2013, 2, 1093-1100.	8.2	71
110	Piezotronics and piezo-phototronics “ From single nanodevices to array of devices and then to integrated functional system. <i>Nano Today</i> , 2013, 8, 619-642.	6.2	141
111	Taxel-Addressable Matrix of Vertical-Nanowire Piezotronic Transistors for Active and Adaptive Tactile Imaging. <i>Science</i> , 2013, 340, 952-957.	6.0	817
112	Piezotronic Effect in Flexible Thin-film Based Devices. <i>Advanced Materials</i> , 2013, 25, 3371-3379.	11.1	115
113	Hydrogenated ZnO Core-Shell Nanocables for Flexible Supercapacitors and Self-Powered Systems. <i>ACS Nano</i> , 2013, 7, 2617-2626.	7.3	781
114	GaN Nanobelt-Based Strain-Gated Piezotronic Logic Devices and Computation. <i>ACS Nano</i> , 2013, 7, 6403-6409.	7.3	82
115	Piezotronic Effect in Solution-Grown p-Type ZnO Nanowires and Films. <i>Nano Letters</i> , 2013, 13, 2647-2653.	4.5	118
116	Triboelectric Nanogenerator Built on Suspended 3D Spiral Structure as Vibration and Positioning Sensor and Wave Energy Harvester. <i>ACS Nano</i> , 2013, 7, 10424-10432.	7.3	204
117	Flexible Triboelectric Nanogenerator for Energy Harvesting and Pressure Sensor. , 2013, , .		0
118	Nanotechnology-Enabled Energy Harvesting for Self-Powered Micro/Nanosystems. <i>Angewandte Chemie - International Edition</i> , 2012, 51, 11700-11721.	7.2	910
119	Nanogenerator as an active sensor for vortex capture and ambient wind-velocity detection. <i>Energy and Environmental Science</i> , 2012, 5, 8528.	15.6	77
120	A self-powered electrochromic device driven by a nanogenerator. <i>Energy and Environmental Science</i> , 2012, 5, 9462.	15.6	117
121	Seedless synthesis of patterned ZnO nanowire arrays on metal thin films (Au, Ag, Cu, Sn) and their application for flexible electromechanical sensing. <i>Journal of Materials Chemistry</i> , 2012, 22, 9469.	6.7	84
122	Integrated ZnO nanotube arrays as efficient dye-sensitized solar cells. <i>Journal of Alloys and Compounds</i> , 2012, 529, 163-168.	2.8	36
123	Transparent Triboelectric Nanogenerators and Self-Powered Pressure Sensors Based on Micropatterned Plastic Films. <i>Nano Letters</i> , 2012, 12, 3109-3114.	4.5	1,676
124	Piezotronic Nanowire-Based Resistive Switches As Programmable Electromechanical Memories. <i>Nano Letters</i> , 2011, 11, 2779-2785.	4.5	141
125	Wafer-Scale High-Throughput Ordered Arrays of Si and Coaxial Si/SiGe Wires: Fabrication, Characterization, and Photovoltaic Application. <i>ACS Nano</i> , 2011, 5, 6629-6636.	7.3	67
126	Polar Charges Induced Electric Hysteresis of ZnO Nano/Microwire for Fast Data Storage. <i>Nano Letters</i> , 2011, 11, 2829-2834.	4.5	102

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127	Robust optimization of the output voltage of nanogenerators by statistical design of experiments. Nano Research, 2010, 3, 613-619.	5.8	21
128	Heteroepitaxial Patterned Growth of Vertically Aligned and Periodically Distributed ZnO Nanowires on GaN Using Laser Interference Ablation. Advanced Functional Materials, 2010, 20, 3484-3489.	7.8	51
129	Strain-Gated Piezotronic Logic Nanodevices. Advanced Materials, 2010, 22, 4711-4715.	11.1	196
130	Large area laser interference patterning for periodic growth of individual ZnO nanowires. , 2010, , .		0
131	Planar Waveguide-Nanowire Integrated Three-Dimensional Dye-Sensitized Solar Cells. Nano Letters, 2010, 10, 2092-2096.	4.5	99
132	Wafer-Scale High-Throughput Ordered Growth of Vertically Aligned ZnO Nanowire Arrays. Nano Letters, 2010, 10, 3414-3419.	4.5	175
133	Controlled Growth of Aligned Polymer Nanowires. Journal of Physical Chemistry C, 2009, 113, 16571-16574.	1.5	100
134	Multiwall carbon nanotube resonator for ultra-sensitive mass detection. Electronics Letters, 2008, 44, 1060.	0.5	25
135	Piezotronics for sensors and energy technology. SPIE Newsroom, 0, , .	0.1	4
136	Abnormal In-Plane Thermal Conductivity Anisotropy in Bilayer γ -Phase Tellurene. SSRN Electronic Journal, 0, , .	0.4	0