

# Xuexin Duan

## List of Publications by Year in descending order

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126  
papers

3,078  
citations

172457

29  
h-index

197818

49  
g-index

130  
all docs

130  
docs citations

130  
times ranked

4175  
citing authors

#	ARTICLE	IF	CITATIONS
1	Quantification of the affinities and kinetics of protein interactions using silicon nanowire biosensors. <i>Nature Nanotechnology</i> , 2012, 7, 401-407.	31.5	318
2	Mechanical and Electrical Anisotropy of Few-Layer Black Phosphorus. <i>ACS Nano</i> , 2015, 9, 11362-11370.	14.6	247
3	A Fully Integrated Wireless Flexible Ammonia Sensor Fabricated by Soft Nano-Lithography. <i>ACS Sensors</i> , 2019, 4, 726-732.	7.8	89
4	Detection of Volatile Organic Compounds by Self-assembled Monolayer Coated Sensor Array with Concentration-independent Fingerprints. <i>Scientific Reports</i> , 2016, 6, 23970.	3.3	83
5	A Highly Aligned Nanowire-Based Strain Sensor for Ultrasensitive Monitoring of Subtle Human Motion. <i>Small</i> , 2020, 16, e2001363.	10.0	72
6	Detection of Volatile Organic Compounds Using Microfabricated Resonator Array Functionalized with Supramolecular Monolayers. <i>ACS Applied Materials &amp; Interfaces</i> , 2015, 7, 17893-17903.	8.0	71
7	Highly specific and sensitive non-enzymatic determination of uric acid in serum and urine by extended gate field effect transistor sensors. <i>Biosensors and Bioelectronics</i> , 2014, 51, 225-231.	10.1	69
8	A chemiresistive sensor array from conductive polymer nanowires fabricated by nanoscale soft lithography. <i>Nanoscale</i> , 2018, 10, 20578-20586.	5.6	69
9	Limit of detection of field effect transistor biosensors: Effects of surface modification and size dependence. <i>Applied Physics Letters</i> , 2014, 104, .	3.3	57
10	Rapid response flexible humidity sensor for respiration monitoring using nano-confined strategy. <i>Nanotechnology</i> , 2020, 31, 125302.	2.6	54
11	Hypersonic Poration: A New Versatile Cell Poration Method to Enhance Cellular Uptake Using a Piezoelectric Nano-Electromechanical Device. <i>Small</i> , 2017, 13, 1602962.	10.0	53
12	Localized ultrahigh frequency acoustic fields induced micro-vortices for submilliseconds microfluidic mixing. <i>Applied Physics Letters</i> , 2016, 109, .	3.3	51
13	Composites, Fabrication and Application of Polyvinylidene Fluoride for Flexible Electromechanical Devices: A Review. <i>Micromachines</i> , 2020, 11, 1076.	2.9	47
14	Regenerative Electronic Biosensors Using Supramolecular Approaches. <i>ACS Nano</i> , 2013, 7, 4014-4021.	14.6	46
15	Functionalized Polyelectrolytes Assembling on Nano-BioFETs for Biosensing Applications. <i>Advanced Functional Materials</i> , 2015, 25, 2279-2286.	14.9	46
16	Multifunctional Soft Robotic Finger Based on a Nanoscale Flexible Temperature-Pressure Tactile Sensor for Material Recognition. <i>ACS Applied Materials &amp; Interfaces</i> , 2021, 13, 55756-55765.	8.0	46
17	Microchip based electrochemical-piezoelectric integrated multi-mode sensing system for continuous glucose monitoring. <i>Sensors and Actuators B: Chemical</i> , 2016, 223, 83-88.	7.8	44
18	Performance limitations for nanowire/nanoribbon biosensors. <i>Wiley Interdisciplinary Reviews: Nanomedicine and Nanobiotechnology</i> , 2013, 5, 629-645.	6.1	42

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19	State-of-the-art and recent developments in micro/nanoscale pressure sensors for smart wearable devices and health monitoring systems. <i>Nami Jishu Yu Jingmi Gongcheng/Nanotechnology and Precision Engineering</i> , 2020, 3, 43-52.	3.2	42
20	An intelligent face mask integrated with high density conductive nanowire array for directly exhaled coronavirus aerosols screening. <i>Biosensors and Bioelectronics</i> , 2021, 186, 113286.	10.1	42
21	Design and fabrication of aluminum nitride Lamb wave resonators towards high figure of merit for intermediate frequency filter applications. <i>Journal of Micromechanics and Microengineering</i> , 2015, 25, 035016.	2.6	41
22	Biofouling Removal and Protein Detection Using a Hypersonic Resonator. <i>ACS Sensors</i> , 2017, 2, 1175-1183.	7.8	40
23	Detection and Discrimination of Volatile Organic Compounds using a Single Film Bulk Acoustic Wave Resonator with Temperature Modulation as a Multiparameter Virtual Sensor Array. <i>ACS Sensors</i> , 2019, 4, 1524-1533.	7.8	39
24	PEDOT:PSS: From conductive polymers to sensors. <i>Nami Jishu Yu Jingmi Gongcheng/Nanotechnology and Precision Engineering</i> , 2021, 4, .	3.2	39
25	Conductive polymer nanowire gas sensor fabricated by nanoscale soft lithography. <i>Nanotechnology</i> , 2017, 28, 485301.	2.6	38
26	Controllable Cell Deformation Using Acoustic Streaming for Membrane Permeability Modulation. <i>Advanced Science</i> , 2021, 8, 2002489.	11.2	37
27	Biofunctional polyelectrolytes assembling on biosensors – A versatile surface coating method for protein detections. <i>Analytica Chimica Acta</i> , 2017, 964, 170-177.	5.4	36
28	Nanostrip flexible microwave enzymatic biosensor for noninvasive epidermal glucose sensing. <i>Nanoscale Horizons</i> , 2020, 5, 934-943.	8.0	34
29	Mixing during Trapping Enabled a Continuous-Flow Microfluidic Smartphone Immunoassay Using Acoustic Streaming. <i>ACS Sensors</i> , 2021, 6, 2386-2394.	7.8	34
30	A flexible, gigahertz, and free-standing thin film piezoelectric MEMS resonator with high figure of merit. <i>Applied Physics Letters</i> , 2017, 111, .	3.3	32
31	Recent advances in micro/nanoscale intracellular delivery. <i>Nami Jishu Yu Jingmi Gongcheng/Nanotechnology and Precision Engineering</i> , 2020, 3, 18-31.	3.2	31
32	Fabrications, Applications and Challenges of Solid-State Nanopores: A Mini Review. <i>Nanomaterials and Nanotechnology</i> , 2016, 6, 35.	3.0	30
33	Smartphone-Enabled Colorimetric Trinitrotoluene Detection Using Amine-Trapped Polydimethylsiloxane Membranes. <i>ACS Applied Materials &amp; Interfaces</i> , 2017, 9, 14445-14452.	8.0	28
34	Trapping of sub-100 nm nanoparticles using gigahertz acoustofluidic tweezers for biosensing applications. <i>Nanoscale</i> , 2019, 11, 14625-14634.	5.6	28
35	Miniaturized polymer coated film bulk acoustic wave resonator sensor array for quantitative gas chromatographic analysis. <i>Sensors and Actuators B: Chemical</i> , 2018, 274, 419-426.	7.8	27
36	On-chip acoustic mixer integration of electro-microfluidics towards in-situ and efficient mixing in droplets. <i>Microfluidics and Nanofluidics</i> , 2018, 22, 1.	2.2	26

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37	Controlled and Tunable Loading and Release of Vesicles by Using Gigahertz Acoustics. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 159-163.	13.8	26
38	Quantitative probing of surface charges at dielectric-electrolyte interfaces. <i>Lab on A Chip</i> , 2013, 13, 1431.	6.0	25
39	Dynamics of Electrowetting Droplet Motion in Digital Microfluidics Systems: From Dynamic Saturation to Device Physics. <i>Micromachines</i> , 2015, 6, 778-789.	2.9	25
40	An on-demand femtoliter droplet dispensing system based on a gigahertz acoustic resonator. <i>Lab on A Chip</i> , 2018, 18, 2540-2546.	6.0	25
41	Label-Free and Simultaneous Mechanical and Electrical Characterization of Single Plant Cells Using Microfluidic Impedance Flow Cytometry. <i>Analytical Chemistry</i> , 2020, 92, 14568-14575.	6.5	25
42	Large-Area Nanoscale Patterning of Functional Materials by Nanomolding in Capillaries. <i>Advanced Functional Materials</i> , 2010, 20, 2519-2526.	14.9	24
43	Kinetic studies of microfabricated biosensors using local adsorption strategy. <i>Biosensors and Bioelectronics</i> , 2015, 74, 8-15.	10.1	24
44	Detection and discrimination of volatile organic compounds using a single multi-resonance mode piezotransduced silicon bulk acoustic wave resonator (PSBAR) as virtual sensor array. <i>Sensors and Actuators B: Chemical</i> , 2018, 254, 1191-1199.	7.8	24
45	Esophageal Cancer-Derived Extracellular Vesicle miR-21-5p Contributes to EMT of ESCC Cells by Disorganizing Macrophage Polarization. <i>Cancers</i> , 2021, 13, 4122.	3.7	24
46	High-Resolution Contact Printing with Chemically Patterned Flat Stamps Fabricated by Nanoimprint Lithography. <i>Advanced Materials</i> , 2009, 21, 2798-2802.	21.0	23
47	On-chip integrated multiple microelectromechanical resonators to enable the local heating, mixing and viscosity sensing for chemical reactions in a droplet. <i>Sensors and Actuators B: Chemical</i> , 2017, 248, 280-287.	7.8	23
48	Hypersonic-Induced 3D Hydrodynamic Tweezers for Versatile Manipulations of Micro/Nanoscale Objects. <i>Particle and Particle Systems Characterization</i> , 2018, 35, 1800068.	2.3	23
49	Tuning the Resonant Frequency of Resonators Using Molecular Surface Self-assembly Approach. <i>ACS Applied Materials &amp; Interfaces</i> , 2015, 7, 950-958.	8.0	22
50	Theoretical and experimental characterizations of gigahertz acoustic streaming in microscale fluids. <i>Nami Jishu Yu Jingmi Gongcheng/Nanotechnology and Precision Engineering</i> , 2019, 2, 15-22.	3.2	22
51	Manipulations of micro/nanoparticles using gigahertz acoustic streaming tweezers. <i>Nami Jishu Yu Jingmi Gongcheng/Nanotechnology and Precision Engineering</i> , 2022, 5, .	3.2	21
52	Monolithic integrated system with an electrowetting-on-dielectric actuator and a film-bulk-acoustic-resonator sensor. <i>Journal of Micromechanics and Microengineering</i> , 2015, 25, 025002.	2.6	20
53	Acoustic Streaming and Microparticle Enrichment within a Microliter Droplet Using a Lamb-Wave Resonator Array. <i>Physical Review Applied</i> , 2018, 9, .	3.8	20
54	A Highly Sensitive Humidity Sensor Based on Ultrahigh-Frequency Microelectromechanical Resonator Coated with Nano-Assembled Polyelectrolyte Thin Films. <i>Micromachines</i> , 2017, 8, 116.	2.9	19

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55	Metal Nanoparticle Wires Formed by an Integrated Nanomolding <sup>~</sup> Chemical Assembly Process: Fabrication and Properties. <i>ACS Nano</i> , 2010, 4, 7660-7666.	14.6	18
56	Chemiresistive and Gravimetric Dual-Mode Gas Sensor toward Target Recognition and Differentiation. <i>ACS Applied Materials &amp; Interfaces</i> , 2016, 8, 21742-21749.	8.0	18
57	Recent advances in micro detectors for micro gas chromatography. <i>Science China Materials</i> , 2019, 62, 611-623.	6.3	18
58	Contactless and Simultaneous Measurement of Water and Acid Contaminations in Oil Using a Flexible Microstrip Sensor. <i>ACS Sensors</i> , 2020, 5, 171-179.	7.8	18
59	An impedance-coupled microfluidic device for single-cell analysis of primary cell wall regeneration. <i>Biosensors and Bioelectronics</i> , 2020, 165, 112374.	10.1	18
60	Surface Engineering of Metal <sup>~</sup> Organic Framework Prepared on Film Bulk Acoustic Resonator for Vapor Detection. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 10009-10017.	8.0	18
61	Simultaneously Optimize the Response Speed and Sensitivity of Low Dimension Conductive Polymers for Epidermal Temperature Sensing Applications. <i>Frontiers in Chemistry</i> , 2020, 8, 194.	3.6	18
62	On-chip surface modified nanostructured ZnO as functional pH sensors. <i>Nanotechnology</i> , 2015, 26, 355202.	2.6	17
63	Hypersound-Enhanced Intracellular Delivery of Drug-Loaded Mesoporous Silica Nanoparticles in a Non-Endosomal Pathway. <i>ACS Applied Materials &amp; Interfaces</i> , 2019, 11, 19734-19742.	8.0	17
64	Complementary metal oxide semiconductor-compatible silicon nanowire biofield-effect transistors as affinity biosensors. <i>Nanomedicine</i> , 2013, 8, 1839-1851.	3.3	16
65	Comparative analysis of static and non-static assays for biochemical sensing using on-chip integrated field effect transistors and solidly mounted resonators. <i>Sensors and Actuators B: Chemical</i> , 2017, 243, 775-783.	7.8	16
66	Cellphone-Enabled Microwell-Based Microbead Aggregation Assay for Portable Biomarker Detection. <i>ACS Sensors</i> , 2018, 3, 432-440.	7.8	15
67	Graphene Oxide-Doped Conducting Polymer Nanowires Fabricated by Soft Lithography for Gas Sensing Applications. <i>IEEE Sensors Journal</i> , 2018, 18, 7765-7771.	4.7	15
68	A Universal Biomolecular Concentrator To Enhance Biomolecular Surface Binding Based on Acoustic NEMS Resonator. <i>ACS Central Science</i> , 2018, 4, 899-908.	11.3	15
69	Cytosolic Delivery of Functional Proteins <i>&lt;i&gt;In Vitro&lt;/i&gt;</i> through Tunable Gigahertz Acoustics. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 15823-15829.	8.0	15
70	Hypersonic poration of supported lipid bilayers. <i>Materials Chemistry Frontiers</i> , 2019, 3, 782-790.	5.9	14
71	Biomolecular stiffness detection based on positive frequency shift of CMOS compatible gigahertz solidly mounted resonators. <i>Biosensors and Bioelectronics</i> , 2017, 96, 206-212.	10.1	13
72	Dimension-reconfigurable bubble film nanochannel for wetting based sensing. <i>Nature Communications</i> , 2020, 11, 814.	12.8	13

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73	A Supported Lipid Bilayer-Based Lab-on-a-Chip Biosensor for the Rapid Electrical Screening of Coronavirus Drugs. <i>ACS Sensors</i> , 2022, 7, 2084-2092.	7.8	13
74	Dual-Mode Gas Sensor Composed of a Silicon Nanoribbon Field Effect Transistor and a Bulk Acoustic Wave Resonator: A Case Study in Freons. <i>Sensors</i> , 2018, 18, 343.	3.8	12
75	Wireless gas sensing based on a passive piezoelectric resonant sensor array through near-field induction. <i>Applied Physics Letters</i> , 2016, 109, .	3.3	11
76	Printed Highly Ordered Conductive Polymer Nanowires Doped with Biotinylated Polyelectrolytes for Biosensing Applications. <i>Advanced Materials Interfaces</i> , 2019, 6, 1900671.	3.7	11
77	Ultra-rapid modulation of neurite outgrowth in a gigahertz acoustic streaming system. <i>Lab on A Chip</i> , 2021, 21, 1948-1955.	6.0	11
78	A Microfluidic-Based Fabry-Pérot Gas Sensor. <i>Micromachines</i> , 2016, 7, 36.	2.9	9
79	Solid-State Microfluidics with Integrated Thin-Film Acoustic Sensors. <i>ACS Sensors</i> , 2018, 3, 1584-1591.	7.8	9
80	Phase separation of a nonionic surfactant aqueous solution in a standing surface acoustic wave for submicron particle manipulation. <i>Lab on A Chip</i> , 2021, 21, 660-667.	6.0	9
81	Bidirectional Regulation of Cell Mechanical Motion via a Gold Nanorods-Acoustic Streaming System. <i>ACS Nano</i> , 2022, 16, 8427-8439.	14.6	9
82	Miniature Gigahertz Acoustic Resonator and On-Chip Electrochemical Sensor: An Emerging Combination for Electroanalytical Microsystems. <i>Analytical Chemistry</i> , 2019, 91, 15959-15966.	6.5	8
83	Wireless Controlled Local Heating and Mixing Multiple Droplets Using Micro-Fabricated Resonator Array for Micro-Reactor Applications. <i>IEEE Access</i> , 2017, 5, 25987-25992.	4.2	7
84	Novel Gas Sensor Arrays Based on High-Q SAM-Modified Piezotransduced Single-Crystal Silicon Bulk Acoustic Resonators. <i>Sensors</i> , 2017, 17, 1507.	3.8	7
85	Plasmon mediated spectrally selective and sensitivity-enhanced uncooled near-infrared detector. <i>Journal of Colloid and Interface Science</i> , 2021, 586, 67-74.	9.4	7
86	A prototype portable instrument employing micro-preconcentrator and FBAR sensor for the detection of chemical warfare agents. <i>Nami Jishu Yu Jingmi Gongcheng/Nanotechnology and Precision Engineering</i> , 2022, 5, .	3.2	7
87	Acoustically Triggered Disassembly of Multilayered Polyelectrolyte Thin Films through Gigahertz Resonators for Controlled Drug Release Applications. <i>Micromachines</i> , 2016, 7, 194.	2.9	6
88	Programmable multi-DNA release from multilayered polyelectrolytes using gigahertz nano-electromechanical resonator. <i>Journal of Nanobiotechnology</i> , 2019, 17, 86.	9.1	6
89	Smartphone-Enabled Aerosol Particle Analysis Device. <i>IEEE Access</i> , 2019, 7, 101117-101124.	4.2	6
90	Hierarchical assembly of gold nanorod stripe patterns for sensing and cells alignment. <i>Nanotechnology</i> , 2019, 30, 175302.	2.6	6

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91	Resistive pulse sensing device with embedded nanochannel (nanochannel-RPS) for label-free biomolecule and bionanoparticle analysis. <i>Nanotechnology</i> , 2021, 32, 295507.	2.6	6
92	Notched-ring structured microfluidic contact lens for intraocular pressure monitoring. <i>Applied Physics Letters</i> , 2021, 119, .	3.3	6
93	On-Chip Arbitrary Manipulation of Single Particles by Acoustic Resonator Array. <i>Analytical Chemistry</i> , 2022, 94, 5392-5398.	6.5	6
94	Mechanism and stability investigation of a nozzle-free droplet-on-demand acoustic ejector. <i>Analyst</i> , 2021, 146, 5650-5657.	3.5	5
95	In-Line Detection with Microfluidic Bulk Acoustic Wave Resonator Gas Sensor for Gas Chromatography. <i>Sensors</i> , 2021, 21, 6800.	3.8	5
96	Liquid phase mass production of air-stable black phosphorus/phospholipids nanocomposite with ultralow tunneling barrier. <i>2D Materials</i> , 2018, 5, 025012.	4.4	4
97	Hydrophobin-functionalized film bulk acoustic wave resonators for sensitive and polarity-sensitive sensing of volatile organic compounds. <i>Applied Physics Letters</i> , 2019, 115, .	3.3	4
98	Film Bulk Acoustic Wave Resonator for Trace Chemical Warfare Agents Simulants Detection in Micro Chromatography. , 2019, , .		4
99	Three-dimensional biosensor surface based on novel thorns-like polyelectrolytes. <i>Biosensors and Bioelectronics</i> , 2020, 167, 112504.	10.1	4
100	Deep Learning Assisted Microfluidic Impedance Flow Cytometry for Label-free Foodborne Bacteria Analysis and Classification. , 2021, 2021, 7087-7090.		4
101	Mechanical Vibration Measurement of Solidly Mounted Resonator in Fluid by Atomic Force Microscopy. <i>Micromachines</i> , 2017, 8, 244.	2.9	3
102	Nanowires: Printed Highly Ordered Conductive Polymer Nanowires Doped with Biotinylated Interfaces, 2019, 6, 1970118.	3.7	3
103	Liquid-Phase and Ultrahigh-Frequency-Acoustofluidics-Based Solid-Phase Synthesis of Biotin-Tagged 6â€™/3â€™-Sialyl-N-Acetylglucosamine by Sequential One-Pot Multienzyme System. <i>Catalysts</i> , 2020, 10, 1347.	3.5	3
104	Hypersound-Assisted Size Sorting of Microparticles on Inkjet-Patterned Protein Films. <i>Langmuir</i> , 2021, 37, 2826-2832.	3.5	3
105	Acoustofluidic Based Wireless Micropump for Portable Drug Delivery Applications. , 2021, 2021, 1276-1279.		3
106	In-line trapping and rotation of bio-particles via 3-D micro-vortices generated by localized ultrahigh frequency acoustic resonators. , 2017, , .		2
107	Rapid Purification, Enrichment, and Detection of Biomolecules Using Bulk Acoustic Wave Resonators. , 2019, , .		2
108	Biomolecules Detection Using Microstrip Sensor with Highly-ordered Nanowires Array. , 2019, , .		2

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109	Controlled and Tunable Loading and Release of Vesicles by Using Gigahertz Acoustics. <i>Angewandte Chemie</i> , 2019, 131, 165-169.	2.0	2
110	Real-time Detection of Nanoparticles Interaction with Lipid Membranes Using an Integrated Acoustical and Electrical Multimode Biosensor. <i>Particle and Particle Systems Characterization</i> , 2019, 36, 1800370.	2.3	2
111	A combined virtual impactor and field-effect transistor microsystem for particulate matter separation and detection. <i>Nami Jishu Yu Jingmi Gongcheng/Nanotechnology and Precision Engineering</i> , 2021, 4, .	3.2	2
112	Simultaneously-Engineered Composition and Spatial Position of Metal/Metal-Oxide Nanowires for Hydrogen Sensing Applications. <i>ACS Applied Nano Materials</i> , 2022, 5, 3667-3675.	5.0	2
113	On chip manipulation of carbon dots via gigahertz acoustic streaming for enhanced bioimaging and biosensing. <i>Talanta</i> , 2022, 245, 123462.	5.5	2
114	Concentration-independent fingerprint library of volatile organic compounds based on gas-surface interactions by self-assembled monolayer functionalized film bulk acoustic resonator arrays. , 2015, , .		1
115	Directly trapping of nanoscale biomolecules using bulk acoustic wave resonators. , 2016, , .		1
116	Regulating the differentiation of PC12 by acoustic fluid stimulation. , 2019, , .		1
117	Conducting polymer nanowires volatile organic compounds sensor array fabricated by soft lithography. , 2017, , .		0
118	Mechanical and Electrical Properties Characterization Towards Plant Cell Study Using Microfluidic Impedance Device. , 2018, , .		0
119	Supramolecular Interface for Biochemical Sensing Applications. , 2019, , 1-40.		0
120	A portable nucleic acid extraction system based on gigahertz acoustic tweezers. , 2020, 2020, 6147-6150.		0
121	Dual Functions of Ghz Frequency Acoustic Resonator System for Biosamples Capture and Sensing. , 2020, 2020, 3994-3997.		0
122	Intracellular Delivery of Graphene Oxide Quantum Dots for Bio-Imaging and Ferric Ion Sensing Based on Bulk Acoustic Wave Resonator. , 2021, , .		0
123	Supramolecular Interface for Biochemical Sensing Applications. , 2020, , 1277-1316.		0
124	A single-chip dual-transduction gas sensor for BTX detection. , 2021, , .		0
125	Flexible piezoelectric self-powered pressure sensor with microstructured electrode. , 2021, , .		0
126	100% Single Cell Encapsulation via Acoustofluidic Printing Based on a Gigahertz Acoustic Resonator. , 2021, 2021, 1172-1175.		0