

Muhammad Irfan

List of Publications by Year in descending order

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164
papers

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#	ARTICLE	IF	CITATIONS
1	<p>Electric Field Control of Nonvolatile Magnetization in $\text{Co}_{40}\text{Fe}_{20}\text{B}_{20}\text{Pb}$</p>		



#	ARTICLE	IF	CITATIONS
37	All-electrical manipulation of magnetization in magnetic tunnel junction via spin-orbit torque. Applied Physics Letters, 2020, 116, 162401.	1.5	34
38	Electrochemical fabrication and magnetization properties of CoCrPt nanowires and nanotubes. Applied Physics Letters, 2009, 94, .	1.5	33
39	Nonmetallic Atoms Induced Magnetic Anisotropy in Monolayer Chromium Trihalides. Journal of Physical Chemistry C, 2019, 123, 691-697.	1.5	33
40	Strain controlling transport properties of heterostructure composed of monolayer CrI ₃ . Applied Physics Letters, 2019, 114, .	1.5	31
41	Electrical spin injection into GaAs based light emitting diodes using perpendicular magnetic tunnel junction-type spin injector. Applied Physics Letters, 2016, 108, .	1.5	30
42	MgO(001) barrier based magnetic tunnel junctions and their device applications. Science China: Physics, Mechanics and Astronomy, 2013, 56, 29-60.	2.0	28
43	Noise suppression and sensitivity manipulation of magnetic tunnel junction sensors with soft magnetic Co _{70.5} Fe _{4.5} Si ₁₅ B ₁₀ layer. Journal of Applied Physics, 2017, 122, .	1.1	28
44	Enhanced exchange bias and improved ferromagnetic properties in Permalloy/BiFe _{0.95} Co _{0.05} O ₃ core-shell nanostructures. Scientific Reports, 2016, 5, 18203.	1.6	27
45	Effects of current on nanoscale ring-shaped magnetic tunnel junctions. Physical Review B, 2008, 77, .	1.1	26
46	In-plane current-driven spin-orbit torque switching in perpendicularly magnetized films with enhanced thermal tolerance. Applied Physics Letters, 2016, 108, .	1.5	26
47	Determining spin-torque efficiency in ferromagnetic metals via spin-torque ferromagnetic resonance. Physical Review B, 2020, 101, .	1.1	26
48	Exchange-biased hybrid ferromagnetic-multiferroic core-shell nanostructures. Nanoscale, 2014, 6, 7215-7220.	2.8	25
49	Magnetic response of hybrid ferromagnetic and antiferromagnetic core-shell nanostructures. Nanoscale, 2016, 8, 6064-6070.	2.8	25
50	Electrical spin injection into InGaAs/GaAs quantum wells: A comparison between MgO tunnel barriers grown by sputtering and molecular beam epitaxy methods. Applied Physics Letters, 2014, 105, 012404.	1.5	24
51	Dielectric Behavior and Magnetic Properties of Mn-Substituted Ni-Zn Ferrites. Journal of Electronic Materials, 2015, 44, 2369-2377.	1.0	24
52	Acceptor-modulated optical enhancements and band-gap narrowing in ZnO thin films. AIP Advances, 2018, 8, .	0.6	24
53	Tunneling magnetoresistance in Fe ₃ Si/MgO/Fe ₃ Si(001) magnetic tunnel junctions. Applied Physics Letters, 2014, 104, .	1.5	23
54	First-principles study of perpendicular magnetic anisotropy in ferrimagnetic D ₀₂₂ -Mn ₃ X (X = Ga, Ge) on MgO and SrTiO ₃ . Applied Physics Letters, 2018, 112, 142403.	1.5	22

#	ARTICLE	IF	CITATIONS
55	Field-Free Spin-Orbit Torque Switching in Perpendicularly Magnetized Synthetic Antiferromagnets. <i>Advanced Functional Materials</i> , 2022, 32, 2109455.	7.8	21
56	Effect of a semiconductor electrode on the tunneling electroresistance in ferroelectric tunneling junction. <i>Applied Physics Letters</i> , 2016, 109, .	1.5	20
57	Effect of loading ZnNiCrFe ₂ O ₄ nanoparticles on structural and microwave absorption properties of polyaniline nanocomposites. <i>Journal of Materials Science: Materials in Electronics</i> , 2016, 27, 9489-9495.	1.1	20
58	Observation of large anomalous Nernst effect in 2D layered materials Fe ₃ GeTe ₂ . <i>Applied Physics Letters</i> , 2019, 115, .	1.5	20
59	Structural, Electrical and Dielectric Properties of Dodecylbenzene Sulphonic Acid Doped Polypyrrole/Nano-Y ₂ O ₃ Composites. <i>Journal of Inorganic and Organometallic Polymers and Materials</i> , 2020, 30, 1287-1292.	1.9	20
60	Field-free approaches for deterministic spin-orbit torque switching of the perpendicular magnet. <i>Materials Futures</i> , 2022, 1, 022201.	3.1	20
61	Perpendicular magnetic anisotropy in Ta Co ₄₀ Fe ₄₀ B ₂₀ MgAl ₂ O ₄ structures and perpendicular CoFeB MgAl ₂ O ₄ CoFeB magnetic tunnel junction. <i>Applied Physics Letters</i> , 2014, 105, 102407.	1.5	19
62	Polarization-Mediated Thermal Stability of Metal/Oxide Heterointerface. <i>Advanced Materials</i> , 2015, 27, 6934-6938.	11.1	19
63	Investigation of the magnetic properties of nanometric SrSmCoNi ferrite/PST matrix. <i>Ceramics International</i> , 2015, 41, 8748-8754.	2.3	19
64	First-principles study of MnAl for its application in MgO-based perpendicular magnetic tunnel junctions. <i>Applied Physics Letters</i> , 2017, 110, .	1.5	19
65	Study of spin-orbit torque induced magnetization switching in synthetic antiferromagnet with ultrathin Ta spacer layer. <i>Applied Physics Letters</i> , 2018, 113, .	1.5	19
66	Evidence of magnetization switching by anomalous spin Hall torque in NiFe. <i>Physical Review B</i> , 2020, 101, .	1.1	19
67	Junction resistance, tunnel magnetoresistance ratio, and spin-transfer torque in Zn-doped magnetic tunnel junctions. <i>Physical Review B</i> , 2012, 85, .	1.1	18
68	Effect of interfacial structures on spin dependent tunneling in epitaxial <i>L</i> -1-FePt/MgO/FePt perpendicular magnetic tunnel junctions. <i>Journal of Applied Physics</i> , 2015, 117, .	1.1	18
69	Investigation of structural and electrical properties of vanadium substituted disordered pyrochlore-type Ho _{2-x} V _x Zr ₂ O ₇ nanostructure. <i>Journal of Alloys and Compounds</i> , 2014, 593, 117-122.	2.8	17
70	Ultrahigh tunneling magnetoresistance in van der Waals and lateral magnetic tunnel junctions formed by intrinsic ferromagnets Li _{0.5} Cr ₃ and Cr ₃ . <i>Applied Physics Letters</i> , 2020, 117, 022412.	1.5	17
71	Giant tunneling magnetoresistance in van der Waals magnetic tunnel junctions formed by interlayer antiferromagnetic bilayer $\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi} \text{mathvariant="normal"} \rangle \text{CoBr} \langle \text{mml:mi} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:math} \rangle$. <i>Physical Review B</i> , 2021, 103, .	1.1	17
72	Current-induced magnetization switching in a microscale ring-shaped magnetic tunnel junction. <i>Physical Review B</i> , 2008, 77, .	1.1	16

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73	Effect of loading titanium dioxide on structural, electrical and mechanical properties of polyaniline nanocomposites. Journal of Alloys and Compounds, 2015, 651, 328-332.	2.8	16
74	Controllable synthesis of ferromagnetic“antiferromagnetic core”shell NWs with tunable magnetic properties. Nanoscale, 2017, 9, 5694-5700.	2.8	16
75	Electrical Initialization of Electron and Nuclear Spins in a Single Quantum Dot at Zero Magnetic Field. Nano Letters, 2018, 18, 2381-2386.	4.5	16
76	Atomic-scale understanding of high thermal stability of the Mo/CoFeB/MgO spin injector for spin-injection in remanence. Nanoscale, 2018, 10, 10213-10220.	2.8	16
77	Perpendicular magnetic tunnel junction and its application in magnetic random access memory. Chinese Physics B, 2014, 23, 077501.	0.7	15
78	Utilizing the anti-ferromagnetic functionality of a multiferroic shell to study exchange bias in hybrid core-shell nanostructures. Nanoscale, 2015, 7, 13398-13403.	2.8	15
79	Manipulation of magnetization switching and tunnel magnetoresistance via temperature and voltage control. Scientific Reports, 2016, 5, 18269.	1.6	14
80	Determination of spin relaxation times in heavy metals via second-harmonic spin injection magnetoresistance. Physical Review B, 2017, 96, .	1.1	14
81	Current-Induced In-Plane Magnetization Switching in a Biaxial Ferrimagnetic Insulator. Physical Review Applied, 2020, 13, .	1.5	14
82	Nanoelliptic Ring-Shaped Magnetic Tunnel Junction and Its Application in MRAM Design With Spin-Polarized Current Switching. IEEE Transactions on Magnetics, 2011, 47, 2957-2961.	1.2	13
83	Magnetic investigations of post-annealed metallic Fe nanowires via electrodeposition method. Materials Letters, 2016, 180, 235-238.	1.3	13
84	Structural and magnetic properties of Fe ₃ Ga alloy nanowires: Effect of post annealing treatment. Journal of Alloys and Compounds, 2017, 691, 1-7.	2.8	13
85	Interface-induced perpendicular magnetic anisotropy in Co ₂ FeAl/NiFe ₂ O ₄ superlattice: first-principles study. Physical Chemistry Chemical Physics, 2020, 22, 716-723.	1.3	13
86	HYSTERESIS AND ELECTRIC MODULUS ANALYSIS OF Y ³⁺ DOPED MnNi-Y-TYPE HEXAGONAL FERRITE. Ceramics - Silikaty, 2016, , 34-40.	0.2	13
87	Double-pinned magnetic tunnel junction sensors with spin-valve-like sensing layers. Journal of Applied Physics, 2015, 118, .	1.1	12
88	Structural and Magnetic Response in Bimetallic Core/Shell Magnetic Nanoparticles. Nanomaterials, 2016, 6, 72.	1.9	12
89	Epitaxial yttrium iron garnet film for fabrication of high frequency on-chip inductors. Applied Physics Letters, 2016, 109, .	1.5	12
90	Fabrication and magnetic investigations of highly uniform CoNiGa alloy nanowires. Journal of Magnetism and Magnetic Materials, 2017, 432, 124-128.	1.0	12

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91	Investigation of physical properties of SnS:Fe diluted magnetic semiconductor nanoparticles for spintronic applications. Journal of Magnetism and Magnetic Materials, 2018, 460, 111-119.	1.0	12
92	Magnetic Modulation of Terahertz Waves via Spin-Polarized Electron Tunneling Based on Magnetic Tunnel Junctions. Physical Review Applied, 2020, 14, .	1.5	12
93	Enhanced tunneling electroresistance in multiferroic tunnel junctions due to the reversible modulation of orbitals overlap. Applied Physics Letters, 2016, 109, .	1.5	11
94	Diameter-dependent multiferroic functionality in hybrid core/shell NWs. Nanoscale, 2016, 8, 14956-14964.	2.8	11
95	Influence of Nd ³⁺ substitution on physical, electrical and dielectric properties of Ba ₂ Zn ₂ Fe ₁₂ O ₂₂ hexagonal ferrites prepared by sol-gel auto combustion method. Journal of Materials Science: Materials in Electronics, 2016, 27, 3637-3644.	1.1	11
96	Synthesis and low temperature magnetic measurements of polycrystalline Gadolinium nanowires. Materials Letters, 2018, 228, 266-269.	1.3	11
97	Spin transmission in IrMn through measurements of spin Hall magnetoresistance and spin-orbit torque. Physical Review B, 2020, 101, .	1.1	11
98	Gradual magnetization switching via domain nucleation driven by spin-orbit torque. Applied Physics Letters, 2021, 118, 032407.	1.5	11
99	Electrical Spin Injection into the 2D Electron Gas in AlN/GaN Heterostructures with Ultrathin AlN Tunnel Barrier. Advanced Functional Materials, 2021, 31, 2009771.	7.8	11
100	Switching the perpendicular magnetization of a magnetic insulator by magnon transfer torque. Physical Review B, 2021, 104, .	1.1	11
101	Controlled nanostructuring of multiphase core-shell nanowires by a template-assisted electrodeposition approach. Nanotechnology, 2012, 23, 305601.	1.3	10
102	Transport Properties in Sputtered CoFeB/MgAl ₂ O ₄ /CoFeB Magnetic Tunnel Junctions. IEEE Transactions on Magnetics, 2014, 50, 1-4.	1.2	10
103	Post magnetic field annealing effect on magnetic and structural properties of Co ₈₀ Pt ₂₀ nanowires and nanotubes fabricated by electrochemical method. Journal of Applied Physics, 2014, 115, 17A762.	1.1	10
104	Dopant-driven enhancements in the optoelectronic properties of laser ablated ZnO: Ga thin films. Journal of Applied Physics, 2018, 123, 161401.	1.1	10
105	Magnetic-field-free terahertz emission from a magnetic tunneling junction. Japanese Journal of Applied Physics, 2019, 58, 090913.	0.8	10
106	High-Sensitivity Tunnel Magnetoresistance Sensors Based on Double Indirect and Direct Exchange Coupling Effect*. Chinese Physics Letters, 2021, 38, 128501.	1.3	10
107	Quantum confinement effect and size-dependent photoluminescence in laser ablated ultra-thin GZO films. Materials Letters, 2018, 210, 358-362.	1.3	9
108	Fabrication and characterization of YIG nanotubes. Journal of Magnetism and Magnetic Materials, 2019, 482, 358-363.	1.0	9

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109	Formation and magnetic-field stability of magnetic dipole skyrmions and bubbles in a ferrimagnet. Applied Physics Letters, 2020, 116, .	1.5	9
110	Fabrication, morphological, structural and magnetic properties of electrodeposited Fe ₃ Pt nanowires and nanotubes. Journal of Magnetism and Magnetic Materials, 2017, 424, 410-415.	1.0	8
111	Temperature mediated morphological and magnetic phase transitions of iron/iron oxide Core/Shell nanostructures. Journal of Alloys and Compounds, 2017, 696, 362-368.	2.8	8
112	First-principles prediction of switchable metallic ferroelectricity in multiferroic tunnel junctions. Physical Review B, 2019, 99, .	1.1	8
113	Zero-field spin transfer oscillators based on magnetic tunnel junction having perpendicular polarizer and planar free layer. AIP Advances, 2016, 6, 125305.	0.6	8
114	Structural Characterization and Temperature Dependence of Tunnel Magnetoresistance in Epitaxial Fe/MgO/Fe Junctions. IEEE Transactions on Magnetics, 2008, 44, 2562-2565.	1.2	7
115	Polypyrrole and its nanocomposites with Zn _{0.5} Ni _{0.4} Cr _{0.1} Fe ₂ O ₄ ferrite: preparation and electromagnetic properties. Journal of Materials Science: Materials in Electronics, 2016, 27, 6964-6973.	1.1	7
116	Magnetic Configurations and State Diagram of Nanoring Magnetic Tunnel Junctions. Physical Review Applied, 2018, 10, .	1.5	7
117	Micromagnetic simulation of spin torque ferromagnetic resonance in nano-ring-shape confined magnetic tunnel junctions. Applied Physics Letters, 2018, 113, 142406.	1.5	7
118	Advanced Method for the Reliable Estimation of Spin-Orbit-Torque Efficiency in Low-Coercivity Ferromagnetic Multilayers. Physical Review Applied, 2019, 11, .	1.5	7
119	Spin relaxation induced by interfacial effects in n-GaN/MgO/Co spin injectors. RSC Advances, 2020, 10, 12547-12553.	1.7	7
120	Response of iron oxide on hetero-nanostructures of soft and hard ferrites. Superlattices and Microstructures, 2016, 92, 374-379.	1.4	6
121	Low temperature nucleation of Griffiths Phase in Co doped LaMnO ₃ nanostructures. Applied Surface Science, 2017, 422, 184-191.	3.1	6
122	Magneto-Seebeck effect in magnetic tunnel junctions with perpendicular anisotropy. AIP Advances, 2017, 7, 015035.	0.6	6
123	Large photoluminescence enhancement in mechanical-exfoliated one-dimensional ZnO nanorods. Journal of Materials Science: Materials in Electronics, 2019, 30, 5170-5176.	1.1	6
124	Thermally activated magnetization back-hopping based true random number generator in nano-ring magnetic tunnel junctions. Applied Physics Letters, 2019, 114, .	1.5	6
125	Optical and dielectric modulus Study of PPy-DBSA/Y ₂ O ₃ composites. Journal of Materials Science: Materials in Electronics, 2020, 31, 22365-22374.	1.1	6
126	Dielectric properties of polymer/clay nanocomposites. Polymers and Polymer Composites, 2021, 29, 807-813.	1.0	6

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127	Room temperature spin injection into SiC via Schottky barrier. Applied Physics Letters, 2018, 113, 222402.	1.5	5
128	First principle calculations and opto-electric enhancement in laser ablated GZO thin films. Optical and Quantum Electronics, 2018, 50, 1.	1.5	5
129	Surface anisotropy induced spin wave nonreciprocity in epitaxial La _{0.33} Sr _{0.67} MnO ₃ film on SrTiO ₃ substrate. Applied Physics Letters, 2020, 117, .	1.5	5
130	Improved photocatalytic H ₂ evolution over composites based on niobium pentoxide, metal sulfides and graphene. Materials Science in Semiconductor Processing, 2021, 122, 105492.	1.9	5
131	Efficient Spin-Orbit-Torque Switching Assisted by an Effective Perpendicular Field in a Magnetic Trilayer. Physical Review Applied, 2021, 16, .	1.5	5
132	Magneto-Seebeck effect in spin valves. Journal of Applied Physics, 2017, 122, .	1.1	5
133	Ferromagnetic barrier induced large enhancement of tunneling magnetoresistance in van der Waals perpendicular magnetic tunnel junctions. Nanoscale, 2021, 13, 19993-20001.	2.8	5
134	Role of an in-plane ferromagnet in a T-type structure for field-free magnetization switching. Applied Physics Letters, 2022, 120, .	1.5	5
135	Magnetic properties of Ni/BiFeO ₃ hybrid nanostructures. Journal of Alloys and Compounds, 2022, 912, 165133.	2.8	5
136	Magnetic field annealing effect and superparamagnetic contributions in one-dimensional CoPt nanostructures. Journal of Alloys and Compounds, 2017, 722, 83-87.	2.8	4
137	Structural, Electrical and Dielectric Properties of Pyrochlore LaCrZr _{2-x} Ge _x O ₇ Nanospheres. Journal of Nanoscience and Nanotechnology, 2017, 17, 5740-5744.	0.9	4
138	Diameter dependent structural and magnetic properties of CoNi alloy nanotubes. Journal of Magnetism and Magnetic Materials, 2020, 500, 166264.	1.0	4
139	Investigation of dielectric relaxation behavior, electric modulus and a.c conductivity of low doped polyaniline cadmium oxide (PANI-CdO) nanocomposites. Polymer Bulletin, 2022, 79, 6581-6600.	1.7	4
140	Electrical detection of light helicity using a quantum-dot-based hybrid device at zero magnetic field. Physical Review Materials, 2020, 4, .	0.9	4
141	Impact of Gd and Cu substitution on dielectric and magnetic properties of MnFeO ₃ multiferroic materials. Physica B: Condensed Matter, 2019, 571, 199-203.	1.3	3
142	Giant tunneling magnetoresistance induced by bias voltage in spin-filter van der Waals magnetic tunnel junctions with an interlayer antiferromagnetic semiconductor barrier. Physical Review B, 2021, 104, .	1.1	3
143	Anomalous anisotropic spin-wave propagation in thin manganite films with uniaxial magnetic anisotropy. Applied Physics Letters, 2022, 120, .	1.5	3
144	Experimental investigation and micromagnetic simulations of hybrid CoCr ₂ O ₄ /Ni coaxial nanostructures. Nanotechnology, 2018, 29, 245601.	1.3	2

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145	Tunneling anisotropic magnetoresistance in fully epitaxial magnetic tunnel junctions with different barriers. Applied Physics Letters, 2018, 112, 242404.	1.5	2
146	Interlayer coupling in intrinsically magnetic bilayer ScO ₂ and NbN ₂ . Applied Physics Letters, 2020, 116, .	1.5	2
147	Materials, physics, and devices of spin-orbit torque effect. Applied Physics Letters, 2021, 118, 180401.	1.5	2
148	Linear diameter dependence magnetization of Fe-CoNi core-shell nanostructures. Journal of Magnetism and Magnetic Materials, 2021, 537, 168164.	1.0	2
149	Heusler compound  Ni nanoarchitectures. Journal of Magnetism and Magnetic Materials, 2021, 539, 168355.	1.0	2
150	Electrical Properties and Characteristics of Polypyrrole Cadmium Oxide (PPy-CdO) Nanocomposite Schottky Diodes. Polymer Science - Series A, 2020, 62, 543-549.	0.4	2
151	Type-Y magnetic tunnel junctions with CoFeB doped tungsten as spin current source. Applied Physics Letters, 2022, 120, .	1.5	2
152	Influence of epitaxial BiFeO ₃ on superparamagnetic behavior of CoFeB thin film. Journal of Applied Physics, 2015, 117, 143904.	1.1	1
153	Magnetic fingerprint of interfacial coupling between CoFe and nanoscale ferroelectric domain walls. Applied Physics Letters, 2016, 109, 082906.	1.5	1
154	Study on conductivity and dielectric behavior of chemically synthesized polypyrrol dodecylbenzene sulfonic acid blended with poly(methyl methacrylate). Polymer Science - Series A, 2016, 58, 429-437.	0.4	1
155	Structural and Electronic Properties of PPy-DBSA/Zirconium Oxide Composites. Polymer Science - Series A, 2019, 61, 105-111.	0.4	1
156	Study of Structural, Thermal and Dielectric Modulus of PPy-DBSA-Zirconium Oxide Composites. Russian Journal of Physical Chemistry B, 2019, 13, 1057-1063.	0.2	1
157	A two-step fabrication and characterization of 1D hybrid ferromagnetic-multiferroic Ni-BiFe _{1-x} CoxO ₃ core-shell nanostructures. Journal of Magnetism and Magnetic Materials, 2020, 493, 165738.	1.0	1
158	Field-free programmable spin logics based on spin Hall effect. Applied Physics Letters, 2021, 119, .	1.5	1
159	Microstructural Investigation of RE ₃ (Fe,V) (RE = Nd, Tb) Magnetic Materials. Materials Research Society Symposia Proceedings, 1999, 577, 315.	0.1	0
160	Effect of ZnNiCrFe ₂ O ₄ content on structural and dielectric properties of polyaniline based nanocomposites, synthesized via in-situ chemical polymerization. Polymer Science - Series B, 2016, 58, 449-456.	0.3	0
161	Influence of HfO ₂ interlayers on magnetocrystalline anisotropy in Fe MgO Fe magnetic tunnel junction: First-principles investigation. Journal of Applied Physics, 2019, 125, 233905.	1.1	0
162	Fabrication of Schottky Diodes Based on Cu Electrode and Polyaniline Cadmium Oxide (PANI/CdO) Composites. Polymer Science - Series B, 2021, 63, 432-440.	0.3	0

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163	The total ionizing dose effect of magnetometers system based on tunneling magnetoresistance sensor. , 2018, , .		0
164	Research progress of spin light emitting diode. Wuli Xuebao/Acta Physica Sinica, 2020, 69, 208501.	0.2	0