Anna Åukowiak

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/1202496/publications.pdf

Version: 2024-02-01

160 papers	2,262 citations	201674 27 h-index	265206 42 g-index
166 all docs	166 docs citations	166 times ranked	2987 citing authors

#	Article	IF	Citations
1	Rare-earth activated SnO2 photoluminescent thin films on flexible glass: Synthesis, deposition and characterization. Optical Materials, 2022, 124, 111978.	3.6	13
2	(INVITED)A review on rare-earth activated SnO2-based photonic structures: Synthesis, fabrication and photoluminescence properties. Optical Materials: X, 2022, 13, 100140.	0.8	5
3	Solvothermally-derived nanoglass as a highly bioactive material. Nanoscale, 2022, 14, 5514-5528.	5.6	6
4	Eu3+ as a Powerful Structural and Spectroscopic Tool for Glass Photonics. Materials, 2022, 15, 1847.	2.9	7
5	Novel CaOâ€“SiO2â€“P2O5 Nanobioglass Activated with Hafnium Phthalocyanine. Nanomaterials, 2022, 12, 1719.	4.1	0
6	Effect of ZnO on solâ€“gel glass properties toward (bio)application. Polyhedron, 2022, 223, 115952.	2.2	1
7	Sol-gel-derived transparent glass-ceramics for photonics. Optical Materials, 2022, 130, 112577.	3.6	5
8	Evolution of the crystal structure and magnetic properties of Sm-doped BiFeO3 ceramics across the phase boundary region. Ceramics International, 2021, 47, 5399-5406.	4.8	21
9	Assessment of SnO2-nanocrystal-based luminescent glass-ceramic waveguides for integrated photonics. Ceramics International, 2021, 47, 5534-5541.	4.8	17
10	Modification of insulin amyloid aggregation by Zr phthalocyanines functionalized with dehydroacetic acid derivatives. PLoS ONE, 2021, 16, e0243904.	2.5	8
11	Upconversion Luminescence of Silicaâ€“Calcia Nanoparticles Co-doped with Tm3+ and Yb3+ Ions. Materials, 2021, 14, 937.	2.9	23
12	Flexible photonics: transform rigid materials into mechanically flexible and optically functional systems. , 2021, , .		1
13	Perspectives of using photodynamic therapy as antimicrobial therapy in endodontics. Reviews in Medical Microbiology, 2021, Publish Ahead of Print, .	0.9	1
14	Structural and Functional Properties of Fluorinated Silica Hybrid Barrier Layers on Flexible Polymeric Foil. Coatings, 2021, 11, 573.	2.6	9
15	From flexible electronics to flexible photonics: A brief overview. Optical Materials, 2021, 115, 111011.	3.6	34
16	Design, fabrication and assessment of an optomechanical sensor for pressure and vibration detection using flexible glass multilayers. Optical Materials, 2021, 115, 111023.	3.6	7
17	Composites based on graphite oxide and zirconium phthalocyanines with aromatic amino acids as photoactive materials. Chemical Papers, 2021, 75, 5421-5433.	2.2	4
18	Photonic glass systems fabricated by RF sputtering on flexible substrates. , 2021, , .		0

#	Article	IF	Citations
19	Patterns of Oral Microbiota in Patients with Apical Periodontitis. Journal of Clinical Medicine, 2021, 10, 2707.	2.4	26
20	The Impact of Graphite Oxide Nanocomposites on the Antibacterial Activity of Serum. International Journal of Molecular Sciences, 2021, 22, 7386.	4.1	2
21	Morphotropic phase boundary in Sm-substituted BiFeO3 ceramics: Local vs microscopic approaches. Journal of Alloys and Compounds, 2021, 875, 159994.	5.5	10
22	Composite based on graphite oxide, metallic silver and zirconium phthalocyanine coordinated by out-of-plane argininate ligands as photoactive antibacterial additive to endodontic cement. Journal of Photochemistry and Photobiology A: Chemistry, 2021, 418, 113432.	3.9	1
23	Tm3+:KY(WO4)2 single crystals: Controlled growth and spectroscopic assessment. Optical Materials, 2021, 120, 111451.	3.6	4
24	Influence of fluoroalkyl chains on structural, morphological, and optical properties of silica-based coatings on flexible substrate. Optical Materials, 2021, 121, 111524.	3.6	7
25	Enhanced photorefractivity and rare-earth photoluminescence in SnO2 nanocrystals-based photonic glass-ceramics. EPJ Web of Conferences, 2021, 255, 05001.	0.3	0
26	Novel synthetic approach to the preparation of single-phase BixLa1â^'xMnO3+Î´ solid solutions. Journal of Sol-Gel Science and Technology, 2020, 93, 650-656.	2.4	10
27	Glass ceramics for frequency conversion. , 2020, , 391-414.		5
28	Possible electrochemical origin of ferroelectricity in HfO2 thin films. Journal of Alloys and Compounds, 2020, 830, 153628.	5.5	57
29	Optical properties of Nd3+-doped phosphate glasses. Optical Materials, 2020, 99, 109591.	3.6	33
30	Modification of the Nearâ€Infrared Spontaneous Emission in Er³⁺â€Activated Inverse Silica Opals. Physica Status Solidi (B): Basic Research, 2020, 257, 1900476.	1.5	1
31	SiO2-SnO2:Er3+ planar waveguides: Highly photorefractive glass-ceramics. Optical Materials: X, 2020, 7, 100056.	0.8	3
32	A Facile Synthesis and Characterization of Highly Crystalline Submicro-Sized BiFeO3. Materials, 2020, 13, 3035.	2.9	16
33	Flexible Photonics: Where Are We Now?. , 2020, , .		1
34	Nanoscale ferroelectricity in pseudo-cubic sol-gel derived barium titanate - bismuth ferrite (BaTiO3â€“) Tj ETQq0 0 0 rgBT /Overlock 10 T	5.5	32
35	Rare earth elements and urban mines: Critical strategies for sustainable development. Ceramics International, 2020, 46, 26247-26250.	4.8	17
36	Photonic Crystal Stimuli-Responsive Chromatic Sensors: A Short Review. Micromachines, 2020, 11, 290.	2.9	29

#	Article	IF	Citations
37	Consequences Of Long-Term Bacteriaâ€™s Exposure To Silver Nanoformulations With Different PhysicoChemical Properties . International Journal of Nanomedicine, 2020, Volume 15, 199-213.	6.7	14
38	Synthesis, Spectroscopic Characterization and Photoactivity of Zr(IV) Phthalocyanines Functionalized with Aminobenzoic Acids and Their GO-Based Composites. Journal of Carbon Research, 2020, 6, 1.	2.7	6
39	Oxygen barrier enhancement of polymeric foil by sol-gel-derived hybrid silica layers. Polymer, 2020, 195, 122437.	3.8	5
40	Increased Lowâ€Temperature Magnetization and Spinâ€Reorientational Transition in the Polar Phase of (Ca, Mn)â€Doped Bismuth Ferrites. Physica Status Solidi (B): Basic Research, 2020, 257, 2000121.	1.5	1
41	Flexible photonics: RF-sputtering fabrication of glass-based systems operating under mechanical deformation conditions. , 2020, , .		3
42	Optical, structure and dielectric properties of Er3+ ions doped Al-Na-K-Ba phosphate glasses. Egyptian Journal of Chemistry, 2020, .	0.2	0
43	3D-photonic crystals: Opal structures. , 2020, , 113-144.		0
44	Photonic glass ceramics based on SnO2 nanocrystals: advances and perspectives. , 2020, , .		2
45	Modeling and parameter recovering of rare-earth-doped/co-doped glass and glass ceramics optical devices. , 2020, , .		0
46	Spectral and time-resolved analysis of rare earth-doped SnO2 emission. , 2020, , .		1
47	Design and fabrication of multilayer-driven optomechanical device for force and vibration sensing. , 2020, , .		1
48	Design of active devices based on rare-earth-doped glass/glass ceramic: from the material characterization to the device parameter refinement. , 2020, , .		1
49	Flexible sol-gel coatings on polymeric and metallic materials. , 2020, , .		0
50	Analytical modelling of Tm-doped tellurite glass including cross-relaxation process. Optical Materials, 2019, 87, 29-34.	3.6	2
51	Coherent emission from fully Er3+ doped monolithic 1-D dielectric microcavity fabricated by rf-sputtering. Optical Materials, 2019, 87, 107-111.	3.6	27
52	Ferromagnetic-like behavior of Bi0.9La0.1FeO3â€“KBr nanocomposites. Scientific Reports, 2019, 9, 10417.	3.3	10
53	Light-Activated Zirconium(IV) Phthalocyanine Derivatives Linked to Graphite Oxide Flakes and Discussion on Their Antibacterial Activity. Applied Sciences (Switzerland), 2019, 9, 4447.	2.5	6
54	RF-Sputtering Technique for Fabrication of Dielectric Multilayer Structures with Low-Threshold Coherent Emission at 1.5 Î¼m. , 2019, , .		1

#	Article	IF	Citations
55	SiO2-SnO2 Photonic Glass-Ceramics. , 2019, , .		1
56	Nanoparticles in Optical Waveguides: A Toolbox to Promote Lasers, Amplifiers and Sensors. , 2019, , .		0
57	Impact of grain size, Pr3+ concentration and host composition on non-contact temperature sensing abilities of polyphosphate nano-Âand microcrystals. Journal of Rare Earths, 2019, 37, 812-818.	4.8	13
58	Optical, Dielectric and Magnetic Properties of La1â^'xNdxFeO3 Powders and Ceramics. Ceramics, 2019, 2, 1-12.	2.6	7
59	Low-Threshold Coherent Emission at 1.5 Âµm from Fully Er3+ Doped Monolithic 1D Dielectric Microcavity Fabricated Using Radio Frequency Sputtering. Ceramics, 2019, 2, 74-85.	2.6	4
60	XPS Characterization of Materials for Photonic Applications. , 2019, , .		0
61	SiO2-SnO2 transparent glass-ceramics activated by rare earth ions. , 2019, , .		4
62	Glass Nanospheres and Artificial Opals. , 2019, , 101-138.		0
63	DFT study of electron absorption and emission spectra of pyramidal LnPc(OAc) complexes of some lanthanide ions in the solid state. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 2018, 196, 202-208.	3.9	8
64	Spherical nanoparticles of europium-doped silicaâ€“calcia glass and glass-ceramic: Spectroscopic characterization. Journal of Molecular Structure, 2018, 1166, 48-53.	3.6	15
65	Synthesis, structure and spectroscopic properties of luminescent GdVO4:Dy3+ and DyVO4 particles. Optical Materials, 2018, 76, 308-316.	3.6	25
66	Photonic band edge assisted spontaneous emission enhancement from all Er3+ 1-D photonic band gap structure. Optical Materials, 2018, 80, 106-109.	3.6	10
67	Blue to NIR down-conversion in Tm3+/Yb3+-codoped fluorozirconate glasses compared to Pr3+/Yb3+ ion-pair. Journal of Luminescence, 2018, 193, 22-28.	3.1	14
68	Effect of Modifiers on Optical and Structural Properties of Barium Gallo-Germanate Glasses Doped with RE Ions. , 2018, , .		0
69	2D Optical Gratings Based on Hexagonal Voids on Transparent Elastomeric Substrate. Micromachines, 2018, 9, 345.	2.9	14
70	Quasi-hemispherical voids micropatterned PDMS as strain sensor. Optical Materials, 2018, 86, 408-413.	3.6	8
71	Temperature behavior of graphene conductance induced by piezoelectric effect in a ferroelectric substrate. Journal of Applied Physics, 2018, 124, 084103.	2.5	5
72	Similarities and Differences between Silver Ions and Silver in Nanoforms as Antibacterial Agents. International Journal of Molecular Sciences, 2018, 19, 444.	4.1	307

#	Article	IF	Citations
73	SiO2-SnO2:Er3+ Glass-Ceramic Monoliths. Applied Sciences (Switzerland), 2018, 8, 1335.	2.5	22
74	Luminescent solâ€“gel-derived micro and nanoparticles. , 2018, , .		1
75	The bright white emission of Âµ-diamonds. , 2018, , .		2
76	Active Sol-Gel Materials, Fluorescence Spectra, and Lifetimes. , 2018, , 1607-1649.		0
77	SiO2-SnO2:Er3+ transparent glass-ceramics: fabrication and photonic assessment. , 2018, , .		1
78	Spectroscopic properties of rare earth doped germanate glasses. , 2018, , .		0
79	One-dimensional disordered photonic structures with two or more materials. , 2018, , .		0
80	Glass photonic structures fabricated by sol-gel route. , 2018, , .		0
81	Synthesis, structure and spectroscopic assessment of luminescent GdVO4:Dy3+ and DyVO4 nanoparticles. , 2018, , .		1
82	Fabrication by rf-sputtering and assessment of dielectric Er3+ doped monolithic 1-D microcavity for coherent emission at 1.5 um. , 2018, , .		0
83	Impact of the reverse cross-relaxation process on pumping efficiency in Tm-doped glass lasers materials. , 2018, , .		0
84	SiO 2 -P 2 O 5 -HfO 2 -Al 2 O 3 -Na 2 O glasses activated by Er 3+ ions: From bulk sample to planar waveguide fabricated by rf-sputtering. Optical Materials, 2017, 63, 153-157.	3.6	12
85	1-D Photonic Crystals Fabricated by RF Sputtering Towards Photonic Applications. NATO Science for Peace and Security Series B: Physics and Biophysics, 2017, , 563-564.	0.3	0
86	Glass and glass-ceramic photonic systems. , 2017, , .		2
87	Nanocrystalline lanthanide tetraphosphates: Energy transfer processes in samples co-doped with Pr 3+ /Yb 3+ and Tm 3+ /Yb 3+. Optical Materials, 2017, 74, 159-165.	3.6	7
88	Gold nanoparticles 1D array as mechanochromic strain sensor. Materials Chemistry and Physics, 2017, 192, 94-99.	4.0	28
89	Structural, optical and phonon properties of formate-based MOF phosphors with ethylammonium cations. Physical Chemistry Chemical Physics, 2017, 19, 22733-22742.	2.8	5
90	Time-resolved photoluminescence studies in Eu-doped SiO 2 â€“ HfO 2 â€“ ZnO glass-ceramic waveguides. Ceramics International, 2017, 43, 1145-1149.	4.8	10

#	Article	IF	Citations
91	Tin-dioxide nanocrystals as Er 3+ luminescence sensitizers: Formation of glass-ceramic thin films and their characterization. Optical Materials, 2017, 63, 95-100.	3.6	40
92	Tin dioxide based photonic systems. , 2017, , .		0
93	Determination of reverse cross-relaxation process constant in Tm-doped glass by ^3H_4 fluorescence decay tail fitting. Optical Materials Express, 2017, 7, 3760.	3.0	10
94	Solâ€“Gel-Derived Glass-Ceramic Photorefractive Films for Photonic Structures. Crystals, 2017, 7, 61.	2.2	18
95	Dielectric multilayer structures fabricated by rf-sputtering. , 2017, , .		1
96	Glass based structures fabricated by rf-sputtering. , 2017, , .		0
97	Glass-based 1-D dielectric microcavities. Optical Materials, 2016, 61, 11-14.	3.6	5
98	Silver doping of silica-hafnia waveguides containing Tb 3+ /Yb 3+ rare earths for downconversion in PV solar cells. Optical Materials, 2016, 60, 264-269.	3.6	28
99	RF-sputtering derived phosphosilicate planar waveguides activated by Er3+ions. , 2016, , .		0
100	Rare-earth doped optical fibers with nano-phase glass-ceramic structures. , 2016, , .		2
101	Phosphate-based glasses and nanostructures. , 2016, , .		1
102	Antimicrobial graphene family materials: Progress, advances, hopes and fears. Advances in Colloid and Interface Science, 2016, 236, 101-112.	14.7	78
103	Graphene for white lighting. , 2016, , .		0
104	The influence of temperature, pressure and Ag doping on the physical properties of TiO₂nanoceramics. Nanoscale, 2016, 8, 19703-19713.	5.6	5
105	Effect of increasing temperature on the physical properties of nano-composite phospho-silicate. , 2016, , .		0
106	Structural and optical investigation of nanocrystalline lithium lanthanum praseodymium tetraphosphate powders. Journal of Alloys and Compounds, 2016, 687, 733-740.	5.5	10
107	Luminescence and structural analysis of Ce³⁺ and Er³⁺ doped and Ce³⁺â€“Er³⁺ codoped Ca₃Sc₂Si₃O₁₂ garnets: influence of the doping concentration in the energy transfer processes. RSC Advances, 2016, 6, 15054-15061.	3.6	11
108	Photoluminescence and lasing in whispering gallery mode glass microspherical resonators. Journal of Luminescence, 2016, 170, 755-760.	3.1	24

#	Article	IF	Citations
109	New photosensitive nanometric graphite oxide composites as antimicrobial material with prolonged action. Journal of Inorganic Biochemistry, 2016, 159, 142-148.	3.5	25
110	Tb3+/Yb3+ codoped silicaâ€“hafnia glass and glassâ€“ceramic waveguides to improve the efficiency of photovoltaic solar cells. Optical Materials, 2016, 52, 62-68.	3.6	53
111	Active Sol-Gel Materials, Fluorescence Spectra, and Lifetimes. , 2016, , 1-43.		3
112	Enhancing photovoltaic performance of silicon solar cells by rare earth doped glass ceramic. , 2015, , .		0
113	Thermo optical coefficient of tin-oxide films measured by ellipsometry. Journal of Applied Physics, 2015, 118, .	2.5	9
114	Photonic glass-ceramics: consolidated outcomes and prospects. , 2015, , .		4
115	Strain-sensitive photonic crystals for sensing applications in structural health monitoring. , 2015, , .		0
116	Optical field enhanced nonlinear absorption and optical limiting properties of 1-D dielectric photonic crystal with ZnO defect. Optical Materials, 2015, 50, 229-233.	3.6	45
117	Hybrid 1-D dielectric microcavity: Fabrication and spectroscopic assessment of glass-based sub-wavelength structures. Ceramics International, 2015, 41, 7429-7433.	4.8	22
118	Metal oxide one dimensional photonic crystals made by RF sputtering and spin coating. Ceramics International, 2015, 41, 8655-8659.	4.8	30
119	Structural and luminescence study of Ce3+ and Tb3+ doped Ca3Sc2Si3O12 garnets obtained by freeze-drying synthesis method. Optical Materials, 2015, 46, 109-114.	3.6	16
120	Glass-ceramics for photonics: Laser material processing. , 2015, , .		1
121	Solâ€“gel-derived photonic structures handling erbium ions luminescence. Optical and Quantum Electronics, 2015, 47, 117-124.	3.3	15
122	Erbium-Doped Tin-Silicate Solâ€“Gel-Derived Glass-Ceramic Thin Films: Effect of Environment Segregation on the Er³⁺ Emission. Science of Advanced Materials, 2015, 7, 301-308.	0.7	19
123	Glass-based confined structures enabling light control. AIP Conference Proceedings, 2015, , .	0.4	0
124	Red photonic glasses and confined structures. Bulletin of the Polish Academy of Sciences: Technical Sciences, 2014, 62, 647-653.	0.8	0
125	Glass-based confined structures fabricated by sol-gel and radio frequency sputtering. Optical Engineering, 2014, 53, 071804.	1.0	1
126	Structural and spectroscopic properties of Eu3+-activated nanocrystalline tetraphosphates loaded in silicaâ€“hafnia thin film. Journal of Non-Crystalline Solids, 2014, 401, 32-35.	3.1	24

#	Article	IF	Citations
127	Fiber coupled erbium doped microsphere: NIR and mid-IR wavelength ranges. , 2014, , .		0
128	Glass-ceramics for photonics: Advances and perspectives. , 2014, , .		3
129	Influence of phosphorous precursors on spectroscopic properties of Er3+-activated SiO2-HfO2-P2O5planar waveguides. Journal of Physics: Conference Series, 2014, 566, 012018.	0.4	5
130	Fabrication and Spectroscopic Assessment of Glass-Based Sub-Wavelength Structures for Hybrid 1-D Dielectric 633-nm Laser Microcavity. , 2014, , .		0
131	Optical pH detector based on LTCC and sol-gel technologies. Materials Science-Poland, 2013, 31, 115-121.	1.0	2
132	Bioactive glass nanoparticles obtained through solâ€“gel chemistry. Chemical Communications, 2013, 49, 6620.	4.1	67
133	Influence of terbium on structure and luminescence of nanocrystalline TiO2 thin films. Open Physics, 2013, 11, .	1.7	0
134	Glass-Based Sub-Wavelength Photonic Structures. , 2013, , .		0
135	Tuning luminescence properties of Eu3+ doped CaAl2O4 nanophosphores with Na+ co-doping. Journal of Luminescence, 2013, 133, 102-109.	3.1	31
136	Anti-Stokes bright yellowish emission of NdAlO3 nanocrystals. Journal of Applied Physics, 2012, 111, .	2.5	61
137	Hydroxyapatites and Europium(III) Doped Hydroxyapatites as a Carrier of Silver Nanoparticles and Their Antimicrobial Activity. Journal of Biomedical Nanotechnology, 2012, 8, 605-612.	1.1	35
138	Comparative studies on structural and luminescent properties of Eu3+:MgAl2O4 and Eu3+/Na+:MgAl2O4 nanopowders and nanoceramics. Optical Materials, 2012, 35, 130-135.	3.6	29
139	Photopolymerazed sol-gel optical layers deposited on LTCC substrates. , 2011, , .		0
140	Synthesis, Structure, and Optical Properties of LiEu(PO₃)₄Nanoparticles. Inorganic Chemistry, 2011, 50, 1321-1330.	4.0	40
141	White emission of lithium ytterbium tetraphosphate nanocrystals. Optics Express, 2011, 19, 14083.	3.4	85
142	Bright upconversion emission of Nd3+ in LiLa1â^'xNdxP4O12 nanocrystalline powders. Optical Materials, 2011, 33, 1492-1494.	3.6	41
143	The effect of pumping power on fluorescence behavior of LiNdP4O12 nanocrystals. Optical Materials, 2011, 33, 1097-1101.	3.6	32
144	Spectroscopic properties of Yb3+-doped Y3Al5O12 nano-ceramics obtained under different sintering pressures. Radiation Measurements, 2010, 45, 304-306.	1.4	18

#	Article	IF	Citations
145	Synthesis and luminescence properties of LiLa1â^'xNdxP4O12 nanocrystals. Optical Materials, 2010, 33, 131-135.	3.6	27
146	IR and Raman spectroscopy study of YAG nanoceramics. Chemical Physics Letters, 2010, 494, 279-283.	2.6	49
147	Synthesis and Optical Properties of Eu³⁺Ion Doped Nanocrystalline Hydroxyapatites. Spectroscopy Letters, 2010, 43, 333-342.	1.0	16
148	Sensing abilities of materials prepared by solâ€"gel technology. Journal of Sol-Gel Science and Technology, 2009, 50, 201-215.	2.4	45
149	Synthesis, structure and luminescence properties of KEu0.01Gd0.19Yb0.8(WO4)2 powder. Journal of Rare Earths, 2009, 27, 564-568.	4.8	16
150	The fâ€"f Emission of Pr³⁺ Ion as an Optical Probe for the Structural Properties of YAG Nanoceramics. Journal of Nanoscience and Nanotechnology, 2009, 9, 6315-6319.	0.9	17
151	Active Sol-Gel Materials. NATO Science for Peace and Security Series C: Environmental Security, 2008, , 125-137.	0.2	2
152	Sol-gel-based optical waveguides on LTCC substrates. , 2008, , .		1
153	Novel Carbon-Cage-Based Ultralow-k Materials: Modeling and First Experiments. IEEE Transactions on Semiconductor Manufacturing, 2008, 21, 646-660.	1.7	10
154	Fabrication and measurements of sol-gel planar and stripe waveguides in LTCC structure. , 2007, , .		0
155	Application of a titania thin film for the discrimination between diesel fuel and heating oil. Thin Solid Films, 2007, 515, 7005-7010.	1.8	6
156	SiO2 - TiO2 Thin Film for Integrated Optics Fabricated by the Sol-Gel Technique. , 2006, , .		2
157	Synthesis and luminescence properties of Eu3+-doped LaAlO3 nanocrystals. Journal of Alloys and Compounds, 2006, 408-412, 828-830.	5.5	50
158	Optical properties of SiO2â€"TiO2 thin film waveguides obtained by the solâ€"gel method and their applications for sensing purposes. Optical Materials, 2005, 27, 1501-1505.	3.6	47
159	Influence of gamma radiation on neodymium bisphthalocyanine. Optical Materials, 2004, 26, 163-166.	3.6	3
160	Glass-Based Photonic Crystals: From Fabrication to Applications. Advances in Science and Technology, 0, , .	0.2	0