Ivan A Troyan

List of Publications by Citations

88 papers	6,060 citations	28 h-index	77 g-index
92 ext. papers	7,075 ext. citations	5.9 avg, IF	5.71 L-index

#	Paper	IF	Citations
88	Conventional superconductivity at 203 kelvin at high pressures in the sulfur hydride system. *Nature*, **2015**, 525, 73-6	50.4	1239
87	Electronic and magnetic phase diagram of beta-Fe(1.01)Se with superconductivity at 36.7 K under pressure. *Nature Materials*, **2009**, 8, 630-3	27	852
86	Single-bonded cubic form of nitrogen. *Nature Materials*, **2004**, 3, 558-63	27	639
85	Transparent dense sodium. *Nature*, **2009**, 458, 182-5	50.4	584
84	Superconductivity in hydrogen dominant materials: silane. *Science*, **2008**, 319, 1506-9	33.3	302
83	Crystal Structure of the Superconducting Phase of Sulfur Hydride. *Nature Physics*, **2016**, 12, 835-838	16.2	285
82	Conductive dense hydrogen. *Nature Materials*, **2011**, 10, 927-31	27	264
81	Structural transformation of molecular nitrogen to a single-bonded atomic state at high pressures. *Journal of Chemical Physics*, **2004**, 121, 11296-300	3.9	145
80	Polymerization of nitrogen in sodium azide. *Journal of Chemical Physics*, **2004**, 120, 10618-23	3.9	120
79	Pressure-induced hydrogen-dominant metallic state in aluminum hydride. *Physical Review Letters*, **2008**, 100, 045504	7.4	111
78	Superconductivity at 161 K in thorium hydride ThH10: Synthesis and properties. *Materials Today*, **2020**, 33, 36-44	21.8	102
77	Observation of superconductivity in hydrogen sulfide from nuclear resonant scattering. *Science*, **2016**, 351, 1303-6	33.3	88
76	The strength of diamond. *Applied Physics Letters*, **2005**, 87, 141902	3.4	68
75	Single-crystalline polymeric nitrogen. *Applied Physics Letters*, **2007**, 90, 171904	3.4	64
74	Molecular structure of hydrazoic acid with hydrogen-bonded tetramers in nearly planar layers. *Journal of the American Chemical Society*, **2011**, 133, 12100-5	16.4	60
73	Evidence of maximum in the melting curve of hydrogen at megabar pressures. *JETP Letters*, **2009**, 89, 174-179	1.2	60
72	Anomalous High-Temperature Superconductivity in YH. *Advanced Materials*, **2021**, 33, e2006832	24	60

71	Excited states and selection rules in self-assembled InAs/GaAs quantum dots. *Physical Review B*, **1999**, 60, R2185-R2188	3.3	57
70	Phase stability of lithium azide at pressures up to 60´GPa. *Journal of Physics Condensed Matter*, **2009**, 21, 195404	1.8	49
69	High pressure synthesis of marcasite-type rhodium pernitride. *Inorganic Chemistry*, **2014**, 53, 697-9	5.1	40
68	Ammonia as a case study for the spontaneous ionization of a simple hydrogen-bonded compound. *Nature Communications*, **2014**, 5, 3460	17.4	40
67	Insulator-metal transition in highly compressed NiO. *Physical Review Letters*, **2012**, 109, 086402	7.4	40
66	Non-Traditional Carbon Semiconductors Prepared from Fullerite C60 and Carbyne under High Pressure. *Physica Status Solidi (B): Basic Research*, **1999**, 211, 401-412	1.3	37
65	Pressure induced polymorphism in ammonium azide (NH4N3). *Chemical Physics*, **2011**, 386, 41-44	2.3	36
64	Superconductivity in La and Y hydrides: Remaining questions to experiment and theory. *Matter and Radiation at Extremes*, **2020**, 5, 028201	4.7	34
63	Electronic and structural transitions in NdFeO3 orthoferrite under high pressures. *JETP Letters*, **2003**, 77, 619-624	1.2	34
62	Equation of state and structural transition at high hydrostatic pressures in the BiFeO3 crystal. *JETP Letters*, **2007**, 86, 197-201	1.2	32
61	Superconductivity at 253 K in lanthanum□ttrium ternary hydrides. *Materials Today*, **2021**, 48, 18-18	21.8	29
60	The mechanism of suppression of strong electron correlations in FeBO3 at high pressures. *Journal of Experimental and Theoretical Physics*, **2004**, 99, 566-573	1	28
59	Elastic properties of superhard amorphous carbon pressure-synthesized from C60 by surface Brillouin scattering. *Physical Review B*, **2001**, 64,	3.3	28
58	Nitrogen Backbone Oligomers. *Scientific Reports*, **2015**, 5, 13239	4.9	27
57	Interplay between the structure and properties of new metastable carbon phases obtained under high pressures from fullerite C60 and carbyne. *JETP Letters*, **2002**, 76, 681-692	1.2	27
56	Stable solid and aqueous H2CO3 from CO2 and H2O at high pressure and high temperature. *Scientific Reports*, **2016**, 6, 19902	4.9	23
55	Exotic magnetism in the alkali sesquioxides Rb4O6 and Cs4O6. *Physical Review B*, **2009**, 79,	3.3	22
54	Magnetic collapse and the change of electronic structure of FeBO3 antiferromagnet under high pressure. *JETP Letters*, **2002**, 76, 664-669	1.2	21

53	Transport and optical properties of iron borate FeBO3 under high pressures. *JETP Letters*, **2003**, 78, 13-16	1.2	20
52	High-pressure magnetic properties and P-T phase diagram of iron borate. *Journal of Experimental and Theoretical Physics*, **2005**, 100, 688	1	20
51	Normal and grazing incidence pulsed laser deposition of nanostructured MoSx hydrogen evolution catalysts from a MoS2 target. *Optics and Laser Technology*, **2018**, 102, 74-84	4.2	19
50	Magnetic collapse in yttrium iron garnet Y3Fe5O12 at high pressure. *JETP Letters*, **2005**, 82, 702-707	1.2	19
49	Equation of state and high-pressure irreversible amorphization in Y3Fe5O12. *JETP Letters*, **2006**, 83, 37-41	1.2	18
48	High-spin-low-spin transition in magnesiowüstite (Mg0.75,Fe0.25)O at high pressures under hydrostatic conditions. *JETP Letters*, **2010**, 90, 617-622	1.2	17
47	Irreversible electronic transition with possible metallization in Y3Fe5O12 at high pressure. *JETP Letters*, **2005**, 82, 603-608	1.2	17
46	Transition from the antiferromagnetic to a nonmagnetic state in FeBO3 under high pressure. *JETP Letters*, **2001**, 74, 24-27	1.2	17
45	Pressure-tuned vibrational resonance coupling of intramolecular fundamentals in ammonium azide (NH4N3). *Vibrational Spectroscopy*, **2012**, 58, 188-192	2.1	16
44	Infrared study of hydrogen up to 310 GPa at room temperature. *High Pressure Research*, **2013**, 33, 377-386	1.6	15
43	Equation of state and structural phase transition in FeBO3 at high pressure. *JETP Letters*, **2002**, 75, 23-25	1.2	15
42	Transformation from molecular to polymeric nitrogen at high pressures and temperatures: In situ x-ray diffraction study. *Applied Physics Letters*, **2008**, 93, 091907	3.4	13
41	Anharmonicity of short-wavelength acoustic phonons in silicon at high temperatures. *JETP Letters*, **2000**, 72, 195-198	1.2	12
40	Novel Strongly Correlated Europium Superhydrides. *Journal of Physical Chemistry Letters*, **2021**, 12, 32-40	6.4	11
39	High pressure studies of magnetic, electronic, and local structure properties in the rare-earth orthoferrites RFeO3 (R = Nd, Lu) **2000**, 126, 305-311		10
38	Time for quartet: the stable 3 : 1 cocrystal formulation of FTDO and BTF – a high-energy-density material. *CrystEngComm*, **2020**, 22, 4823-4832	3.3	9
37	Pressure induced ionic-superionic transition in silver iodide at ambient temperature. *Journal of Chemical Physics*, **2014**, 140, 044708	3.9	9
36	Measurement of the temperature distribution on the surface of the laser heated specimen in a diamond anvil cell system by the tandem imaging acousto-optical filter. *High Pressure Research*, **2019**, 39, 131-149	1.6	9

35	Superconductivity and structural studies of highly compressed hydrogen sulfide. *Physica C: Superconductivity and Its Applications*, **2018**, 552, 27-29	1.3	8
34	High-pressure study of tetramethylsilane by Raman spectroscopy. *Journal of Chemical Physics*, **2012**, 136, 024503	3.9	8
33	Electronic structure of InAs□GaAs self-assembled quantum dots studied by perturbation spectroscopy. *Physica E: Low-Dimensional Systems and Nanostructures*, **2000**, 6, 348-357	3	8
32	MULTI-SPECTRAL IMAGE PROCESSING FOR THE MEASUREMENT OF A SPATIAL TEMPERATURE DISTRIBUTION ON THE SURFACE OF A LASER-HEATED MICROSCOPIC OBJECT. *Computer Optics*, **2017**, 41, 864-868	1.4	8
31	Equation of state and structural phase transitions in iron-based Ba3TaFe3Si2O14 langasite at high hydrostatic pressures. *JETP Letters*, **2015**, 100, 798-806	1.2	7
30	The magnetic P-T phase diagram of langasite Ba3TaFe3Si2O14 at high hydrostatic pressures up to 38 GPa. *Applied Physics Letters*, **2013**, 103, 162402	3.4	7
29	Optical transitions in GdFe3(BO3)4 and FeBO3 under high pressures. *Journal of Physics Condensed Matter*, **2005**, 17, 7599-7604	1.8	7
28	Superconductivity and equation of state of lanthanum at megabar pressures. *Physical Review B*, **2020**, 102,	3.3	7
27	Structural Transitions in Elemental Tin at Ultra High Pressures up to 230 GPa. *JETP Letters*, **2017**, 106, 733-738	1.2	6
26	Electron transport in FeBO3 ferroborate at ultrahigh pressures. *JETP Letters*, **2012**, 94, 748-752	1.2	6
25	The effect of high pressure on the structure and on the magnetic and electronic properties of nickel monoxide. *Journal of Experimental and Theoretical Physics*, **2001**, 92, 696-700	1	6
24	Excited States in Self-Assembled InAs/GaAs Quantum Dots under High Pressure. *Physica Status Solidi (B): Basic Research*, **1999**, 211, 73-77	1.3	6
23	The Effect of Boron on the Structure and Conductivity of Thin Films Obtained by Laser Ablation of Diamond with Deposition at 700°C. *Technical Physics Letters*, **2018**, 44, 511-514	0.7	5
22	Lone-pair interactions and photodissociation of compressed nitrogen trifluoride. *Journal of Chemical Physics*, **2014**, 141, 064706	3.9	5
21	Effect of high pressures on exchange and hyperfine interactions in rare-earth orthoferrites. *Journal of Experimental and Theoretical Physics*, **2000**, 90, 330-340	1	5
20	Pressure-Tuned Resonance Raman Scattering in InAs/GaSb Superlattices. *Physica Status Solidi (B): Basic Research*, **1996**, 198, 321-327	1.3	5
19	Simultaneous measurements of the two-dimensional distribution of infrared laser intensity and temperature in a single-sided laser-heated diamond anvil cell. *Comptes Rendus - Geoscience*, **2019**, 351, 286-294	1.4	4
18	Resonant Raman scattering in superconducting Ba1□KxBiO3. *JETP Letters*, **2003**, 77, 521-525	1.2	4

17	Combined laser heating and tandem acousto-optical filter for two-dimensional temperature distribution on the surface of the heated microobject. *Journal of Physics: Conference Series*, **2018**, 946, 012085	0.3	4
16	Synthesis of New Materials in the Boron–Carbon System. *Glass and Ceramics (English Translation of Steklo I Keramika)*, **2018**, 74, 434-439	0.6	3
15	Synthesis, Characterization of Elastic and Electrical Properties of Diamond-like BCx Nano-Phases Synthesized under High and Low Pressures. *MRS Advances*, **2018**, 3, 45-52	0.7	3
14	High pressure magnetic, structural, and electronic transitions in multiferroic Ba3NbFe3Si2O14. *Applied Physics Letters*, **2018**, 112, 242405	3.4	3
13	Reactions of nitronium sulfates: Hunting for dinitro sulfate. *Journal of Raman Spectroscopy*, **2019**, 50, 1753-1762	2.3	3
12	Structural Phase Transitions and the Equation of State in SnSe at High Pressures up to 2 Mbar. *JETP Letters*, **2018**, 108, 414-418	1.2	3
11	Magnetic phase separation and strong enhancement of the Néel temperature at high pressures in a new multiferroic Ba3TaFe3Si2O14. *JETP Letters*, **2017**, 105, 26-33	1.2	2
10	Spin Crossover and the Magnetic P–T Phase Diagram of Hematite at High Hydrostatic Pressures and Cryogenic Temperatures. *JETP Letters*, **2018**, 107, 247-253	1.2	2
9	Pressure-Induced Structural Transition to the Polar Phase in GdFe3(BO3)4. *Crystal Growth and Design*, **2019**, 19, 6935-6944	3.5	2
8	Structural phase transitions and the equation of state of SnTe at high pressures up to 2 mbar. *JETP Letters*, **2017**, 106, 662-666	1.2	2
7	Studies of magnetic and optic properties of rare-earth gallo-ferroborates by Mössbauer and optical spectroscopy. *Physica B: Condensed Matter*, **2005**, 359-361, 1321-1323	2.8	2
6	Electron-withdrawing effect of α-substituents in acyl nitrates on the polarization of the O–NO2 bond. *Mendeleev Communications*, **2018**, 28, 641-643	1.9	2
5	Bonding, elastic and vibrational properties in low and high pressure synthesized diamond-like BCx phases. *Journal of Physics: Conference Series*, **2017**, 950, 042050	0.3	1
4	An imaging spectroradiometry system for measuring spatial temperature distributions in microscopic objects. *Instruments and Experimental Techniques*, **2017**, 60, 401-406	0.5	1
3	Synthesis and mutual transformations of nitronium tetrakis(nitrooxy)- and tetrakis(2,2,2-trifluoroacetoxy)borates. *New Journal of Chemistry*, **2020**, 44, 13944-13951	3.6	1
2	Crystal structure and phase transitions at high pressures in the superconductor FeSe0.89S0.11. *Journal of Alloys and Compounds*, **2021**, 860, 158419	5.7	1
1	Structural transitions in iron-based Ba 3 NbFe 3 Si 2 O 14 langasite at high pressures. *Europhysics Letters*, **2016**, 116, 66003	1.6	0