Igor Solovyev

List of Publications by Year in Descending Order

105 papers	6,802 citations	35 h-index	82 g-index
111 ext. papers	7,356 ext. citations	3.5 avg, IF	5.93 L-index

#	Paper	IF	Citations
105	Magnetically Induced Polarization in Centrosymmetric Bonds. *Physical Review Letters*, **2021**, 127, 187601	7.4	0
104	Quantum spin liquid and cluster Mott insulator phases in the Mo3O8 magnets. *Npj Quantum Materials*, **2021**, 6,	5	1
103	Exchange interactions and magnetic force theorem. *Physical Review B*, **2021**, 103,	3.3	3
102	Unconventional magnetism and electronic state in the frustrated layered system PdCrO2. *Physical Review B*, **2020**, 102,	3.3	3
101	Can the Highly Symmetric SU(4) Spin□Orbital Model Be Realized in □ZrCl3?. *JETP Letters*, **2020**, 112, 642-646	1.2	4
100	Skyrmionic order and magnetically induced polarization change in lacunar spinel compounds GaV4S8 and GaMo4S8: Comparative theoretical study. *Physical Review B*, **2020**, 102,	3.3	5
99	Co(NO3)2 as an inverted umbrella-type chiral noncoplanar ferrimagnet. *Physical Review B*, **2020**, 102,	3.3	2
98	Fingerprints of spin-current physics on magnetoelectric response in the spin-12 magnet Ba2CuGe2O7. *Physical Review B*, **2020**, 102,	3.3	2
97	Ordering of Fe and Zn Ions and the Magnetic Properties of FeZnMo3O8. *JETP Letters*, **2019**, 109, 786-789	1.2	5
96	Giant contribution of the ligand states to the magnetic properties of the CrGeTe monolayer. *Physical Chemistry Chemical Physics*, **2019**, 21, 9597-9604	3.6	9
95	Magnetic and electronic properties of Cr2Ge2Te6 monolayer by strain and electric-field engineering. *Applied Physics Letters*, **2019**, 114, 092405	3.4	46
94	Microscopic theory of electric polarization induced by skyrmionic order in GaV4S8. *Physical Review B*, **2019**, 99,	3.3	14
93	Microscopic origin of ferromagnetism in the trihalides CrCl3 and CrI3. *Physical Review B*, **2019**, 99,	3.3	34
92	Microscopic toy model for magnetoelectric effect in polar Fe2Mo3O8. *Physical Review Materials*, **2019**, 3,	3.2	9
91	Magnetism of NaFePO and related polyanionic compounds. *Physical Chemistry Chemical Physics*, **2018**, 20, 13497-13507	3.6	6
90	Realization of the anisotropic compass model on the diamond lattice of Cu2+ in CuAl2O4. *Physical Review B*, **2018**, 98,	3.3	9
89	Exchange interactions of CaMnO3 in the bulk and at the surface. *Physical Review B*, **2017**, 95,	3.3	13

88	Superexchange theory of electronic polarization driven by relativistic spin-orbit interaction at half filling. *Physical Review B*, **2017**, 95,	3.3	8
87	Hybridization and spin-orbit coupling effects in the quasi-one-dimensional spin-12 magnet Ba3Cu3Sc4O12. *Physical Review B*, **2016**, 94,	3.3	6
86	Pressure dependence of the structure and electronic properties of Sr3Ir2O7. *Physical Review B*, **2016**, 93,	3.3	18
85	Band filling dependence of the Curie temperature in CrO2. *Journal of Physics Condensed Matter*, **2016**, 28, 216001	1.8	1
84	Origin of magnetoelectric effect in Co4Nb2O9 and Co4Ta2O9: The lessons learned from the comparison of first-principles-based theoretical models and experimental data. *Physical Review B*, **2016**, 94,	3.3	27
83	First-principles investigation of exchange interactions in quasi-one-dimensional antiferromagnet CaV2O4. *Journal of Physics Condensed Matter*, **2015**, 27, 026001	1.8	1
82	Magnetization-induced local electric dipoles and multiferroic properties of Ba2CoGe2O7. *Physical Review B*, **2015**, 91,	3.3	7
81	Mechanisms and origins of half-metallic ferromagnetism in CrO2. *Physical Review B*, **2015**, 92,	3.3	30
80	Validity and limitations of the superexchange model for the magnetic properties of Sr2IrO4 and Ba2IrO4 mediated by the strong spin-orbit coupling. *Physical Review B*, **2015**, 92,	3.3	19
79	Covalency effects reflected in the magnetic form factor of low-dimensional cuprates. *Physical Review B*, **2015**, 92,	3.3	8
78	Magnetism of sodium superoxide. *CrystEngComm*, **2014**, 16, 522-531	3.3	19
77	Spin dependence of ferroelectric polarization in the double exchange model for manganites. *Physical Review B*, **2014**, 90,	3.3	19
76	Structural and electronic origin of the magnetic structures in hexagonal LuFeO3. *Physical Review B*, **2014**, 90,	3.3	31
75	Publisher© Note: Structural and electronic origin of the magnetic structures in hexagonal LuFeO3 [Phys. Rev. B 90, 014436 (2014)]. *Physical Review B*, **2014**, 90,	3.3	3
74	Orbital magnetization of insulating perovskite transition-metal oxides with a net ferromagnetic moment in the ground state. *Physical Review B*, **2014**, 89,	3.3	24
73	Self-consistent linear response for the spin-orbit interaction related properties. *Physical Review B*, **2014**, 90,	3.3	17
72	Noncollinear ferrimagnetic ground state in Ni(NO3)2. *Physical Review B*, **2014**, 90,	3.3	10
71	Mn2FeSbO6: A ferrimagnetic ilmenite and an antiferromagnetic perovskite. *Physical Review B*, **2013**, 87,	3.3	27

70	Origin of multiferroicity in MnWO4. *Physical Review B*, **2013**, 87,	3.3	24
69	Ni6Cr5MoO18: A compensated half metal predicted from first-principles. *Journal of Applied Physics*, **2013**, 113, 043718	2.5	1
68	Double-exchange theory of ferroelectric polarization in orthorhombic manganites with twofold periodic magnetic texture. *Physical Review B*, **2013**, 87,	3.3	8
67	Barium vanadium silicate BaVSi2O7: A t2g counterpart of the Han purple compound. *Physical Review B*, **2013**, 87,	3.3	11
66	Magnetic structure of hexagonal YMnO3 and LuMnO3 from a microscopic point of view. *Physical Review B*, **2012**, 86,	3.3	45
65	Magnetic structure of the noncentrosymmetric perovskites PbVO3 and BiCoO3: Theoretical analysis. *Physical Review B*, **2012**, 85,	3.3	18
64	Magnetic structure and ferroelectric activity in orthorhombic YMnO3: Relative roles of magnetic symmetry breaking and atomic displacements. *Physical Review B*, **2012**, 86,	3.3	16
63	Theoretical analysis of electronic and magnetic properties of NaV2O4: Crucial role of the orbital degrees of freedom. *Physical Review B*, **2012**, 86,	3.3	1
62	Optimized effective potential model for the double perovskites Sr□ xYxVMoO□and Sr□ xYxVTcO□ *Journal of Physics Condensed Matter*, **2011**, 23, 326002	1.8	4
61	Modeling of complex oxide materials from the first principles: systematic applications to vanadates RVO3 with distorted perovskite structure. *Journal of Computational Electronics*, **2011**, 10, 21-34	1.8	8
60	Realistic modeling of complex oxide materials. *Computer Physics Communications*, **2011**, 182, 43-45	4.2	
59	Spin-spiral inhomogeneity as the origin of ferroelectric activity in orthorhombic manganites. *Physical Review B*, **2011**, 83,	3.3	25
58	Magnetic order near 270 K in mineral and synthetic Mn2FeSbO6 ilmenite. *Applied Physics Letters*, **2011**, 98, 202505	3.4	22
57	Defects of the crystal structure and Jahn-Teller distortion in BiMnO3. *Physical Review B*, **2010**, 82,	3.3	15
56	Electronic structure of BiMO3 multiferroics and related oxides. *Physical Review B*, **2010**, 81,	3.3	52
55	Cluster size dependence of double ionization energy spectra of spin-polarized aluminum and sodium clusters: All-electron spin-polarized GW+T-matrix method. *Physical Review B*, **2010**, 81,	3.3	9
54	Magnetic-field control of the electric polarization in BiMnO3. *Physical Review B*, **2010**, 82,	3.3	46
53	Long-Range Magnetic Interactions Induced by the Lattice Distortions and the Origin of the E-Type Antiferromagnetic Phase in the Undoped Orthorhombic Manganites. *Journal of the Physical Society of Japan*, **2009**, 78, 054710	1.5	35

52	Disorder effects in half-metallic Sr2FeMoO6 single crystals. *Applied Physics Letters*, **2009**, 94, 012501	3.4	35
51	Superexchange interactions in orthorhombically distorted titanatesRTiO3(R = Y, Gd, Sm and La). *New Journal of Physics*, **2009**, 11, 093003	2.9	16
50	Magnetic ground state and multiferroicity in BiMnO3. *JETP Letters*, **2009**, 89, 597-602	1.2	14
49	Orbital ordering and magnetic interactions in BiMnO3. *New Journal of Physics*, **2008**, 10, 073021	2.9	36
48	Combining DFT and many-body methods to understand correlated materials. *Journal of Physics Condensed Matter*, **2008**, 20, 293201	1.8	85
47	Spin□rbital superexchange physics emerging from interacting oxygen molecules in KO2. *New Journal of Physics*, **2008**, 10, 013035	2.9	31
46	First principles T-matrix calculations for Auger spectra of hydrocarbon systems. *Physical Review B*, **2008**, 77,	3.3	8
45	Correlation energies in distorted 3d-t 2g perovskite oxides. *Journal of Experimental and Theoretical Physics*, **2007**, 105, 46-54	1	4
44	Construction of Wannier functions from localized atomiclike orbitals. *Physical Review B*, **2007**, 75,	3.3	19
43	First-principles Wannier functions and effective lattice fermion models for narrow-band compounds. *Physical Review B*, **2006**, 73,	3.3	45
42	Lattice distortion and magnetism of 3d□2g perovskite oxides. *Physical Review B*, **2006**, 74,	3.3	66
41	Screening of Coulomb interactions in transition metals. *Physical Review B*, **2005**, 71,	3.3	96
40	Orbital polarization in itinerant magnets. *Physical Review Letters*, **2005**, 95, 267205	7.4	35
39	Electronic structure of strongly correlated systems emerging from combining path-integral renormalization group with the density-functional approach. *Physical Review Letters*, **2005**, 95, 176405	7.4	63
38	Lattice distortion and magnetic ground state of YTiO3 and LaTiO3. *Physical Review B*, **2004**, 69,	3.3	46
37	On the competition between ferromagnetic and antiferromagnetic states in Sr2MnMoO6. *Journal of Magnetism and Magnetic Materials*, **2004**, 268, 194-197	2.8	19
36	GW study of half-metallic electronic structure of La0.7Sr0.3MnO3. *Physica B: Condensed Matter*, **2003**, 329-333, 858-859	2.8	12
35	Charge ordering due to magnetic symmetry breaking. *Physical Review Letters*, **2003**, 91, 177201	7.4	20

34	Nonlocal coherent potential approximation for the paramagnetic state of the degenerate double-exchange model. *Physical Review B*, **2003**, 67,	3.3	5
33	Effects of crystal structure and on-site Coulomb interactions on the electronic and magnetic structure of A2Mo2O7 (A=Y, Gd, and Nd) pyrochlores. *Physical Review B*, **2003**, 67,	3.3	55
32	Classical and quantum spin dynamics in the fcc antiferromagnet NiS2 with frustration. *Physical Review B*, **2003**, 68,	3.3	38
31	Electronic structure and stability of the ferrimagnetic ordering in double perovskites. *Physical Review B*, **2002**, 65,	3.3	94
30	Spin canting in three-dimensional perovskite manganites. *Physical Review B*, **2001**, 63,	3.3	48
29	Ferromagnetic zigzag chains and properties of the charge-ordered perovskite manganites. *Physical Review B*, **2001**, 63,	3.3	26
28	Phase diagram of tetragonal manganites. *Physical Review Letters*, **2000**, 84, 3169-72	7.4	288
27	Optical investigations of the charge gap in orbital-ordered La1/2Sr3/2MnO4. *Physical Review B*, **2000**, 61, 6902-6906	3.3	27
26	Optimized effective potential for the extended Hubbard model. *Physical Review B*, **1999**, 60, 8550-8558	3.3	6
25	Magnetic Spin Origin of the Charge-Ordered Phase in Manganites. *Physical Review Letters*, **1999**, 83, 2825-2828	7.4	89
24	Low-temperature spin dynamics of doped manganites: Roles of Mn t2g, Mn eg, and O 2p states. *Physical Review B*, **1999**, 60, 11439-11443	3.3	14
23	First-principles study on electronic structures and phase stability of MnO and FeO under high pressure. *Physical Review B*, **1999**, 59, 762-774	3.3	103
22	Zone Boundary Softening of the Spin-Wave Dispersion in Doped Ferromagnetic Manganites. *Physical Review Letters*, **1999**, 82, 2959-2962	7.4	65
21	Present Status of the First-Principles Electronic Structure Calculations for the Strongly Correlated Transition-Metal Oxides. *Springer Series in Solid-state Sciences*, **1999**, 34-44	0.4	
20	Effect of the orthorhombic distortion on the magneto-optical properties of SrRuO3. *Journal of Magnetism and Magnetic Materials*, **1998**, 177-181, 811-812	2.8	3
19	Orbital magnetism in FeO. *Journal of Magnetism and Magnetic Materials*, **1998**, 185, 118-120	2.8	14
18	Excitation energy dependence of X-ray emission spectra and electronic structure of Eu1−xCaxMnO3. *Journal of Electron Spectroscopy and Related Phenomena*, **1998**, 96, 187-194	1.7	7
17	Effective single-particle potentials for MnO in light of interatomic magnetic interactions: Existing theories and perspectives. *Physical Review B*, **1998**, 58, 15496-15507	3.3	89

16	Is Hund's Second Rule Responsible for the Orbital Magnetism in Solids?. *Physical Review Letters*, **1998**, 80, 5758-5761	7.4	144
15	Inverse versus Normal NiAs Structures as High-Pressure Phases of FeO and MnO. *Physical Review Letters*, **1998**, 81, 1027-1030	7.4	60
14	Magneto-optical effect in the weak ferromagnets LaMO3 (M= Cr, Mn, and Fe). *Physical Review B*, **1997**, 55, 8060-8063	3.3	17
13	Electronic band structure and lattice distortion in perovskite transition-metal oxides. *Physica B: Condensed Matter*, **1997**, 237-238, 11-13	2.8	18
12	Crucial role of the lattice distortion in the magnetism of LaMnO3. *Physical Review Letters*, **1996**, 76, 4825-4828	7.4	313
11	t2g versus all 3d localization in LaMO3 perovskites (M=Ti-Cu): First-principles study. *Physical Review B*, **1996**, 53, 7158-7170	3.3	322
10	Intermediate-spin state and properties of LaCoO3. *Physical Review B*, **1996**, 54, 5309-5316	3.3	711
9	Singlet semiconductor to ferromagnetic metal transition in FeSi. *Physical Review Letters*, **1996**, 76, 1735-1738	7.4	84
8	Calculation of magneto-optical properties for 4f systems: LSDA + Hubbard U results. *Journal of Physics and Chemistry of Solids*, **1995**, 56, 1521-1524	3.9	133
7	Origin of orbital magnetization and magnetocrystalline anisotropy in TX ordered alloys (where T=Fe,Co and X=Pd,Pt). *Physical Review B*, **1995**, 52, 13419-13428	3.3	161
6	Ab initio calculations of Coulomb U parameters for transition-metal impurities. *Physical Review B*, **1994**, 49, 6736-6740	3.3	40
5	Corrected atomic limit in the local-density approximation and the electronic structure of d impurities in Rb. *Physical Review B*, **1994**, 50, 16861-16871	3.3	554
4	The X-ray emission spectra and electronic structure of the misfit layer compounds (BiS)1.08NbS2and (PbS)1.14TaS2. *Journal of Physics Condensed Matter*, **1994**, 6, 3993-3998	1.8	7
3	LMTO-ASA band structure calculations of BaVS3, BaTiS3and their solid solutions. *Physica Scripta*, **1994**, 50, 90-92	2.6	1
2	Density-functional theory and NiO photoemission spectra. *Physical Review B*, **1993**, 48, 16929-16934	3.3	1726
1	Spin-polarized relativistic linear-muffin-tin-orbital method: Volume-dependent electronic structure and magnetic moment of plutonium. *Physical Review B*, **1991**, 43, 14414-14422	3.3	103