

# Igor Solovyev

## List of Publications by Citations

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105  
papers

6,802  
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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	Density-functional theory and NiO photoemission spectra. <i>Physical Review B</i> , <b>1993</b> , 48, 16929-16934	3.3	1726
104	Intermediate-spin state and properties of LaCoO <sub>3</sub> . <i>Physical Review B</i> , <b>1996</b> , 54, 5309-5316	3.3	711
103	Corrected atomic limit in the local-density approximation and the electronic structure of d impurities in Rb. <i>Physical Review B</i> , <b>1994</b> , 50, 16861-16871	3.3	554
102	t <sub>2g</sub> versus all 3d localization in LaMO <sub>3</sub> perovskites (M=Ti-Cu): First-principles study. <i>Physical Review B</i> , <b>1996</b> , 53, 7158-7170	3.3	322
101	Crucial role of the lattice distortion in the magnetism of LaMnO <sub>3</sub> . <i>Physical Review Letters</i> , <b>1996</b> , 76, 4825-4828	7.4	313
100	Phase diagram of tetragonal manganites. <i>Physical Review Letters</i> , <b>2000</b> , 84, 3169-72	7.4	288
99	Origin of orbital magnetization and magnetocrystalline anisotropy in TX ordered alloys (where T=Fe,Co and X=Pd,Pt). <i>Physical Review B</i> , <b>1995</b> , 52, 13419-13428	3.3	161
98	Is Hund's Second Rule Responsible for the Orbital Magnetism in Solids?. <i>Physical Review Letters</i> , <b>1998</b> , 80, 5758-5761	7.4	144
97	Calculation of magneto-optical properties for 4f systems: LSDA + Hubbard U results. <i>Journal of Physics and Chemistry of Solids</i> , <b>1995</b> , 56, 1521-1524	3.9	133
96	First-principles study on electronic structures and phase stability of MnO and FeO under high pressure. <i>Physical Review B</i> , <b>1999</b> , 59, 762-774	3.3	103
95	Spin-polarized relativistic linear-muffin-tin-orbital method: Volume-dependent electronic structure and magnetic moment of plutonium. <i>Physical Review B</i> , <b>1991</b> , 43, 14414-14422	3.3	103
94	Screening of Coulomb interactions in transition metals. <i>Physical Review B</i> , <b>2005</b> , 71,	3.3	96
93	Electronic structure and stability of the ferrimagnetic ordering in double perovskites. <i>Physical Review B</i> , <b>2002</b> , 65,	3.3	94
92	Effective single-particle potentials for MnO in light of interatomic magnetic interactions: Existing theories and perspectives. <i>Physical Review B</i> , <b>1998</b> , 58, 15496-15507	3.3	89
91	Magnetic Spin Origin of the Charge-Ordered Phase in Manganites. <i>Physical Review Letters</i> , <b>1999</b> , 83, 2825-2828	7.4	89
90	Combining DFT and many-body methods to understand correlated materials. <i>Journal of Physics Condensed Matter</i> , <b>2008</b> , 20, 293201	1.8	85
89	Singlet semiconductor to ferromagnetic metal transition in FeSi. <i>Physical Review Letters</i> , <b>1996</b> , 76, 1735-1738	7.4	84

88	Lattice distortion and magnetism of 3d <sup>4</sup> g perovskite oxides. <i>Physical Review B</i> , <b>2006</b> , 74,	3-3	66
87	Zone Boundary Softening of the Spin-Wave Dispersion in Doped Ferromagnetic Manganites. <i>Physical Review Letters</i> , <b>1999</b> , 82, 2959-2962	7-4	65
86	Electronic structure of strongly correlated systems emerging from combining path-integral renormalization group with the density-functional approach. <i>Physical Review Letters</i> , <b>2005</b> , 95, 176405	7-4	63
85	Inverse versus Normal NiAs Structures as High-Pressure Phases of FeO and MnO. <i>Physical Review Letters</i> , <b>1998</b> , 81, 1027-1030	7-4	60
84	Effects of crystal structure and on-site Coulomb interactions on the electronic and magnetic structure of A <sub>2</sub> Mo <sub>2</sub> O <sub>7</sub> (A=Y, Gd, and Nd) pyrochlores. <i>Physical Review B</i> , <b>2003</b> , 67,	3-3	55
83	Electronic structure of BiMO <sub>3</sub> multiferroics and related oxides. <i>Physical Review B</i> , <b>2010</b> , 81,	3-3	52
82	Spin canting in three-dimensional perovskite manganites. <i>Physical Review B</i> , <b>2001</b> , 63,	3-3	48
81	Magnetic and electronic properties of Cr <sub>2</sub> Ge <sub>2</sub> Te <sub>6</sub> monolayer by strain and electric-field engineering. <i>Applied Physics Letters</i> , <b>2019</b> , 114, 092405	3-4	46
80	Magnetic-field control of the electric polarization in BiMnO <sub>3</sub> . <i>Physical Review B</i> , <b>2010</b> , 82,	3-3	46
79	Lattice distortion and magnetic ground state of YTiO <sub>3</sub> and LaTiO <sub>3</sub> . <i>Physical Review B</i> , <b>2004</b> , 69,	3-3	46
78	Magnetic structure of hexagonal YMnO <sub>3</sub> and LuMnO <sub>3</sub> from a microscopic point of view. <i>Physical Review B</i> , <b>2012</b> , 86,	3-3	45
77	First-principles Wannier functions and effective lattice fermion models for narrow-band compounds. <i>Physical Review B</i> , <b>2006</b> , 73,	3-3	45
76	Ab initio calculations of Coulomb U parameters for transition-metal impurities. <i>Physical Review B</i> , <b>1994</b> , 49, 6736-6740	3-3	40
75	Classical and quantum spin dynamics in the fcc antiferromagnet NiS <sub>2</sub> with frustration. <i>Physical Review B</i> , <b>2003</b> , 68,	3-3	38
74	Orbital ordering and magnetic interactions in BiMnO <sub>3</sub> . <i>New Journal of Physics</i> , <b>2008</b> , 10, 073021	2-9	36
73	Long-Range Magnetic Interactions Induced by the Lattice Distortions and the Origin of the E-Type Antiferromagnetic Phase in the Undoped Orthorhombic Manganites. <i>Journal of the Physical Society of Japan</i> , <b>2009</b> , 78, 054710	1-5	35
72	Disorder effects in half-metallic Sr <sub>2</sub> FeMoO <sub>6</sub> single crystals. <i>Applied Physics Letters</i> , <b>2009</b> , 94, 012501	3-4	35
71	Orbital polarization in itinerant magnets. <i>Physical Review Letters</i> , <b>2005</b> , 95, 267205	7-4	35

70	Microscopic origin of ferromagnetism in the trihalides CrCl <sub>3</sub> and CrI <sub>3</sub> . <i>Physical Review B</i> , <b>2019</b> , 99,	3-3	34
69	Structural and electronic origin of the magnetic structures in hexagonal LuFeO <sub>3</sub> . <i>Physical Review B</i> , <b>2014</b> , 90,	3-3	31
68	Spin-orbital superexchange physics emerging from interacting oxygen molecules in KO <sub>2</sub> . <i>New Journal of Physics</i> , <b>2008</b> , 10, 013035	2.9	31
67	Mechanisms and origins of half-metallic ferromagnetism in CrO <sub>2</sub> . <i>Physical Review B</i> , <b>2015</b> , 92,	3-3	30
66	Mn <sub>2</sub> FeSbO <sub>6</sub> : A ferrimagnetic ilmenite and an antiferromagnetic perovskite. <i>Physical Review B</i> , <b>2013</b> , 87,	3-3	27
65	Optical investigations of the charge gap in orbital-ordered La <sub>1/2</sub> Sr <sub>3/2</sub> MnO <sub>4</sub> . <i>Physical Review B</i> , <b>2000</b> , 61, 6902-6906	3-3	27
64	Origin of magnetoelectric effect in Co <sub>4</sub> Nb <sub>2</sub> O <sub>9</sub> and Co <sub>4</sub> Ta <sub>2</sub> O <sub>9</sub> : The lessons learned from the comparison of first-principles-based theoretical models and experimental data. <i>Physical Review B</i> , <b>2016</b> , 94,	3-3	27
63	Ferromagnetic zigzag chains and properties of the charge-ordered perovskite manganites. <i>Physical Review B</i> , <b>2001</b> , 63,	3-3	26
62	Spin-spiral inhomogeneity as the origin of ferroelectric activity in orthorhombic manganites. <i>Physical Review B</i> , <b>2011</b> , 83,	3-3	25
61	Orbital magnetization of insulating perovskite transition-metal oxides with a net ferromagnetic moment in the ground state. <i>Physical Review B</i> , <b>2014</b> , 89,	3-3	24
60	Origin of multiferroicity in MnWO <sub>4</sub> . <i>Physical Review B</i> , <b>2013</b> , 87,	3-3	24
59	Magnetic order near 270 K in mineral and synthetic Mn <sub>2</sub> FeSbO <sub>6</sub> ilmenite. <i>Applied Physics Letters</i> , <b>2011</b> , 98, 202505	3-4	22
58	Charge ordering due to magnetic symmetry breaking. <i>Physical Review Letters</i> , <b>2003</b> , 91, 177201	7.4	20
57	Magnetism of sodium superoxide. <i>CrystEngComm</i> , <b>2014</b> , 16, 522-531	3-3	19
56	Spin dependence of ferroelectric polarization in the double exchange model for manganites. <i>Physical Review B</i> , <b>2014</b> , 90,	3-3	19
55	Validity and limitations of the superexchange model for the magnetic properties of Sr <sub>2</sub> IrO <sub>4</sub> and Ba <sub>2</sub> IrO <sub>4</sub> mediated by the strong spin-orbit coupling. <i>Physical Review B</i> , <b>2015</b> , 92,	3-3	19
54	Construction of Wannier functions from localized atomiclike orbitals. <i>Physical Review B</i> , <b>2007</b> , 75,	3-3	19
53	On the competition between ferromagnetic and antiferromagnetic states in Sr <sub>2</sub> MnMoO <sub>6</sub> . <i>Journal of Magnetism and Magnetic Materials</i> , <b>2004</b> , 268, 194-197	2.8	19

52	Pressure dependence of the structure and electronic properties of Sr <sub>3</sub> Ir <sub>2</sub> O <sub>7</sub> . <i>Physical Review B</i> , <b>2016</b> , 93,	3.3	18
51	Magnetic structure of the noncentrosymmetric perovskites PbVO <sub>3</sub> and BiCoO <sub>3</sub> : Theoretical analysis. <i>Physical Review B</i> , <b>2012</b> , 85,	3.3	18
50	Electronic band structure and lattice distortion in perovskite transition-metal oxides. <i>Physica B: Condensed Matter</i> , <b>1997</b> , 237-238, 11-13	2.8	18
49	Self-consistent linear response for the spin-orbit interaction related properties. <i>Physical Review B</i> , <b>2014</b> , 90,	3.3	17
48	Magneto-optical effect in the weak ferromagnets LaMO <sub>3</sub> (M= Cr, Mn, and Fe). <i>Physical Review B</i> , <b>1997</b> , 55, 8060-8063	3.3	17
47	Magnetic structure and ferroelectric activity in orthorhombic YMnO <sub>3</sub> : Relative roles of magnetic symmetry breaking and atomic displacements. <i>Physical Review B</i> , <b>2012</b> , 86,	3.3	16
46	Superexchange interactions in orthorhombically distorted titanates RTiO <sub>3</sub> (R = Y, Gd, Sm and La). <i>New Journal of Physics</i> , <b>2009</b> , 11, 093003	2.9	16
45	Defects of the crystal structure and Jahn-Teller distortion in BiMnO <sub>3</sub> . <i>Physical Review B</i> , <b>2010</b> , 82,	3.3	15
44	Microscopic theory of electric polarization induced by skyrmionic order in GaV <sub>4</sub> S <sub>8</sub> . <i>Physical Review B</i> , <b>2019</b> , 99,	3.3	14
43	Magnetic ground state and multiferroicity in BiMnO <sub>3</sub> . <i>JETP Letters</i> , <b>2009</b> , 89, 597-602	1.2	14
42	Orbital magnetism in FeO. <i>Journal of Magnetism and Magnetic Materials</i> , <b>1998</b> , 185, 118-120	2.8	14
41	Low-temperature spin dynamics of doped manganites: Roles of Mn t <sub>2g</sub> , Mn e <sub>g</sub> , and O 2p states. <i>Physical Review B</i> , <b>1999</b> , 60, 11439-11443	3.3	14
40	Exchange interactions of CaMnO <sub>3</sub> in the bulk and at the surface. <i>Physical Review B</i> , <b>2017</b> , 95,	3.3	13
39	GW study of half-metallic electronic structure of La <sub>0.7</sub> Sr <sub>0.3</sub> MnO <sub>3</sub> . <i>Physica B: Condensed Matter</i> , <b>2003</b> , 329-333, 858-859	2.8	12
38	Barium vanadium silicate BaVSi <sub>2</sub> O <sub>7</sub> : A t <sub>2g</sub> counterpart of the Han purple compound. <i>Physical Review B</i> , <b>2013</b> , 87,	3.3	11
37	Noncollinear ferrimagnetic ground state in Ni(NO <sub>3</sub> ) <sub>2</sub> . <i>Physical Review B</i> , <b>2014</b> , 90,	3.3	10
36	Giant contribution of the ligand states to the magnetic properties of the CrGeTe monolayer. <i>Physical Chemistry Chemical Physics</i> , <b>2019</b> , 21, 9597-9604	3.6	9
35	Cluster size dependence of double ionization energy spectra of spin-polarized aluminum and sodium clusters: All-electron spin-polarized GW+T-matrix method. <i>Physical Review B</i> , <b>2010</b> , 81,	3.3	9

34	Microscopic toy model for magnetoelectric effect in polar Fe <sub>2</sub> Mo <sub>3</sub> O <sub>8</sub> . <i>Physical Review Materials</i> , <b>2019</b> , 3,	3.2	9
33	Realization of the anisotropic compass model on the diamond lattice of Cu <sup>2+</sup> in CuAl <sub>2</sub> O <sub>4</sub> . <i>Physical Review B</i> , <b>2018</b> , 98,	3.3	9
32	Superexchange theory of electronic polarization driven by relativistic spin-orbit interaction at half filling. <i>Physical Review B</i> , <b>2017</b> , 95,	3.3	8
31	Covalency effects reflected in the magnetic form factor of low-dimensional cuprates. <i>Physical Review B</i> , <b>2015</b> , 92,	3.3	8
30	Double-exchange theory of ferroelectric polarization in orthorhombic manganites with twofold periodic magnetic texture. <i>Physical Review B</i> , <b>2013</b> , 87,	3.3	8
29	Modeling of complex oxide materials from the first principles: systematic applications to vanadates RVO <sub>3</sub> with distorted perovskite structure. <i>Journal of Computational Electronics</i> , <b>2011</b> , 10, 21-34	1.8	8
28	First principles T-matrix calculations for Auger spectra of hydrocarbon systems. <i>Physical Review B</i> , <b>2008</b> , 77,	3.3	8
27	Magnetization-induced local electric dipoles and multiferroic properties of Ba <sub>2</sub> CoGe <sub>2</sub> O <sub>7</sub> . <i>Physical Review B</i> , <b>2015</b> , 91,	3.3	7
26	Excitation energy dependence of X-ray emission spectra and electronic structure of Eu <sub>1-x</sub> CaxMnO <sub>3</sub> . <i>Journal of Electron Spectroscopy and Related Phenomena</i> , <b>1998</b> , 96, 187-194	1.7	7
25	The X-ray emission spectra and electronic structure of the misfit layer compounds (BiS) <sub>1.08</sub> NbS <sub>2</sub> and (PbS) <sub>1.14</sub> TaS <sub>2</sub> . <i>Journal of Physics Condensed Matter</i> , <b>1994</b> , 6, 3993-3998	1.8	7
24	Magnetism of NaFePO and related polyanionic compounds. <i>Physical Chemistry Chemical Physics</i> , <b>2018</b> , 20, 13497-13507	3.6	6
23	Hybridization and spin-orbit coupling effects in the quasi-one-dimensional spin-1/2 magnet Ba <sub>3</sub> Cu <sub>3</sub> Sc <sub>4</sub> O <sub>12</sub> . <i>Physical Review B</i> , <b>2016</b> , 94,	3.3	6
22	Optimized effective potential for the extended Hubbard model. <i>Physical Review B</i> , <b>1999</b> , 60, 8550-8558	3.3	6
21	Ordering of Fe and Zn Ions and the Magnetic Properties of FeZnMo <sub>3</sub> O <sub>8</sub> . <i>JETP Letters</i> , <b>2019</b> , 109, 786-789	1.2	5
20	Nonlocal coherent potential approximation for the paramagnetic state of the degenerate double-exchange model. <i>Physical Review B</i> , <b>2003</b> , 67,	3.3	5
19	Skyrmionic order and magnetically induced polarization change in lacunar spinel compounds GaV <sub>4</sub> S <sub>8</sub> and GaMo <sub>4</sub> S <sub>8</sub> : Comparative theoretical study. <i>Physical Review B</i> , <b>2020</b> , 102,	3.3	5
18	Optimized effective potential model for the double perovskites Sr <sub>2-x</sub> YxVMoO <sub>10</sub> and Sr <sub>2-x</sub> YxVTcO <sub>10</sub> <i>Journal of Physics Condensed Matter</i> , <b>2011</b> , 23, 326002	1.8	4
17	Correlation energies in distorted 3d-t 2g perovskite oxides. <i>Journal of Experimental and Theoretical Physics</i> , <b>2007</b> , 105, 46-54	1	4

16	Can the Highly Symmetric SU(4) Spin-Orbital Model Be Realized in $\text{URuCl}_3$ ? <i>JETP Letters</i> , <b>2020</b> , 112, 642-646	1.2	4
15	Unconventional magnetism and electronic state in the frustrated layered system $\text{PdCrO}_2$ . <i>Physical Review B</i> , <b>2020</b> , 102,	3.3	3
14	Publisher's Note: Structural and electronic origin of the magnetic structures in hexagonal $\text{LuFeO}_3$ [Phys. Rev. B 90, 014436 (2014)]. <i>Physical Review B</i> , <b>2014</b> , 90,	3.3	3
13	Effect of the orthorhombic distortion on the magneto-optical properties of $\text{SrRuO}_3$ . <i>Journal of Magnetism and Magnetic Materials</i> , <b>1998</b> , 177-181, 811-812	2.8	3
12	Exchange interactions and magnetic force theorem. <i>Physical Review B</i> , <b>2021</b> , 103,	3.3	3
11	$\text{Co}(\text{NO}_3)_2$ as an inverted umbrella-type chiral noncoplanar ferrimagnet. <i>Physical Review B</i> , <b>2020</b> , 102,	3.3	2
10	Fingerprints of spin-current physics on magnetoelectric response in the spin-12 magnet $\text{Ba}_2\text{CuGe}_2\text{O}_7$ . <i>Physical Review B</i> , <b>2020</b> , 102,	3.3	2
9	First-principles investigation of exchange interactions in quasi-one-dimensional antiferromagnet $\text{CaV}_2\text{O}_4$ . <i>Journal of Physics Condensed Matter</i> , <b>2015</b> , 27, 026001	1.8	1
8	$\text{Ni}_6\text{Cr}_5\text{MoO}_{18}$ : A compensated half metal predicted from first-principles. <i>Journal of Applied Physics</i> , <b>2013</b> , 113, 043718	2.5	1
7	Theoretical analysis of electronic and magnetic properties of $\text{NaV}_2\text{O}_4$ : Crucial role of the orbital degrees of freedom. <i>Physical Review B</i> , <b>2012</b> , 86,	3.3	1
6	LMTO-ASA band structure calculations of $\text{BaVS}_3$ , $\text{BaTiS}_3$ and their solid solutions. <i>Physica Scripta</i> , <b>1994</b> , 50, 90-92	2.6	1
5	Quantum spin liquid and cluster Mott insulator phases in the $\text{Mo}_3\text{O}_8$ magnets. <i>Npj Quantum Materials</i> , <b>2021</b> , 6,	5	1
4	Band filling dependence of the Curie temperature in $\text{CrO}_2$ . <i>Journal of Physics Condensed Matter</i> , <b>2016</b> , 28, 216001	1.8	1
3	Magnetically Induced Polarization in Centrosymmetric Bonds. <i>Physical Review Letters</i> , <b>2021</b> , 127, 187601	7.4	0
2	Realistic modeling of complex oxide materials. <i>Computer Physics Communications</i> , <b>2011</b> , 182, 43-45	4.2	
1	Present Status of the First-Principles Electronic Structure Calculations for the Strongly Correlated Transition-Metal Oxides. <i>Springer Series in Solid-state Sciences</i> , <b>1999</b> , 34-44	0.4	