Gustav Bihlmayer

List of Publications by Citations

238 papers	14,721 citations	55 h-index	116 g-index
250 ext. papers	16,597 ext. citations	5.2 avg, IF	6.27 L-index

#	Paper	IF	Citations
238	Switching the electrical resistance of individual dislocations in single-crystalline SrTiO3. *Nature Materials*, **2006**, 5, 312-20	27	1406
237	Spontaneous atomic-scale magnetic skyrmion lattice in two dimensions. *Nature Physics*, **2011**, 7, 713-718	16.2	1169
236	Observation of unconventional quantum spin textures in topological insulators. *Science*, **2009**, 323, 919-22	33.3	963
235	Reproducibility in density functional theory calculations of solids. *Science*, **2016**, 351, aad3000	33.3	784
234	Chiral magnetic order at surfaces driven by inversion asymmetry. *Nature*, **2007**, 447, 190-3	50.4	688
233	Strong spin-orbit splitting on bi surfaces. *Physical Review Letters*, **2004**, 93, 046403	7.4	522
232	Dzyaloshinskii-Moriya interaction accounting for the orientation of magnetic domains in ultrathin films: Fe/W(110). *Physical Review B*, **2008**, 78,	3.3	361
231	Giant Rashba splitting in graphene due to hybridization with gold. *Nature Communications*, **2012**, 3, 1232	17.4	271
230	Localized edge states in two-dimensional topological insulators: Ultrathin Bi films. *Physical Review B*, **2011**, 83,	3.3	258
229	Role of spin-orbit coupling and hybridization effects in the electronic structure of ultrathin Bi films. *Physical Review Letters*, **2006**, 97, 146803	7.4	246
228	Interfacing 2D and 3D topological insulators: Bi(111) bilayer on Bi2Te3. *Physical Review Letters*, **2011**, 107, 166801	7.4	216
227	Atomic-scale spin spiral with a unique rotational sense: Mn monolayer on W(001). *Physical Review Letters*, **2008**, 101, 027201	7.4	193
226	First-principles investigation of structural and electronic properties of ultrathin Bi films. *Physical Review B*, **2008**, 77,	3.3	165
225	Rashba effect at magnetic metal surfaces. *Physical Review B*, **2005**, 71,	3.3	152
224	Resolving complex atomic-scale spin structures by spin-polarized scanning tunneling microscopy. *Physical Review Letters*, **2001**, 86, 4132-5	7.4	151
223	Ab initio treatment of noncollinear magnets with the full-potential linearized augmented plane wave method. *Physical Review B*, **2004**, 69,	3.3	150
222	Direct observation of spin splitting in bismuth surface states. *Physical Review B*, **2007**, 76,	3.3	148

221	The Rashba-effect at metallic surfaces. *Surface Science*, **2006**, 600, 3888-3891	1.8	145
220	Role of spin in quasiparticle interference. *Physical Review Letters*, **2004**, 93, 196802	7.4	144
219	Enhanced Rashba spin-orbit splitting in Bi/Ag(111) and Pb/Ag(111) surface alloys from first principles. *Physical Review B*, **2007**, 75,	3.3	142
218	Ir(111) surface state with giant Rashba splitting persists under graphene in air. *Physical Review Letters*, **2012**, 108, 066804	7.4	133
217	Highly-ordered wide bandgap materials for quantized anomalous Hall and magnetoelectric effects. *2D Materials*, **2017**, 4, 025082	5.9	125
216	Focus on the Rashba effect. *New Journal of Physics*, **2015**, 17, 050202	2.9	125
215	Revealing antiferromagnetic order of the Fe monolayer on W(001): spin-polarized scanning tunneling microscopy and first-principles calculations. *Physical Review Letters*, **2005**, 94, 087204	7.4	119
214	Rashba-type spin-orbit splitting of quantum well states in ultrathin Pb films. *Physical Review Letters* , **2008**, 101, 266802	7.4	113
213	Thermal collapse of spin polarization in half-metallic ferromagnets. *Physical Review Letters*, **2006**, 97, 026404	7.4	113
212	Elemental topological insulator with tunable Fermi level: strained α-Sn on InSb(001). *Physical Review Letters*, **2013**, 111, 157205	7.4	110
211	Magnetism and electronic structure of hcp Gd and the Gd(0001) surface. *Journal of Physics Condensed Matter*, **2002**, 14, 6353-6371	1.8	110
210	Magnetization-direction-dependent local electronic structure probed by scanning tunneling spectroscopy. *Physical Review Letters*, **2002**, 89, 237205	7.4	109
209	Hund's Rule-Driven Dzyaloshinskii-Moriya Interaction at 3d-5d Interfaces. *Physical Review Letters*, **2016**, 117, 247202	7.4	105
208	Coulomb correlations and orbital polarization in the metal-insulator transition of VO2. *Physical Review B*, **2005**, 71,	3.3	104
207	Three-dimensional spin structure on a two-dimensional lattice: Mn/Cu(111). *Physical Review Letters*, **2001**, 86, 1106-9	7.4	99
206	Giant magnetocrystalline anisotropies of 4d transition-metal monowires. *Physical Review Letters*, **2006**, 96, 147201	7.4	93
205	Describing Dzyaloshinskii-Moriya spirals from first principles. *Physica B: Condensed Matter*, **2009**, 404, 2678-2683	2.8	92
204	Quantum well states in ultrathin Bi films: Angle-resolved photoemission spectroscopy and first-principles calculations study. *Physical Review B*, **2007**, 75,	3.3	91

203	Broken-bond rule for the surface energies of noble metals. *Europhysics Letters*, **2002**, 58, 751-757	1.6	90
202	Engineering skyrmions in transition-metal multilayers for spintronics. *Nature Communications*, **2016**, 7, 11779	17.4	85
201	Observation of a complex nanoscale magnetic structure in a hexagonal Fe monolayer. *Physical Review Letters*, **2006**, 96, 167203	7.4	85
200	Quantum-well-induced giant spin-orbit splitting. *Physical Review Letters*, **2010**, 104, 066802	7.4	84
199	Strong rashba-type spin polarization of the photocurrent from bulk continuum States: experiment and theory for Bi(111). *Physical Review Letters*, **2010**, 105, 076804	7.4	80
198	Probing two topological surface bands of Sb2Te3 by spin-polarized photoemission spectroscopy. *Physical Review B*, **2012**, 86,	3.3	73
197	Structure of the (111) surface of bismuth: LEED analysis and first-principles calculations. *Physical Review B*, **2005**, 72,	3.3	72
196	Realization of a vertical topological p-n junction in epitaxial Sb2Te3/Bi2Te3 heterostructures. *Nature Communications*, **2015**, 6, 8816	17.4	70
195	Phase separation and dilution in implanted MnxGe1 alloys. *Applied Physics Letters*, **2006**, 88, 061907	3.4	70
194	GW study of topological insulators Bi2Se3, Bi2Te3, and Sb2Te3: Beyond the perturbative one-shot approach. *Physical Review B*, **2013**, 88,	3.3	69
193	Identification of Te alloys with suitable phase change characteristics. *Applied Physics Letters*, **2003**, 83, 2572-2574	3.4	67
192	Ab initiotheory of exchange interactions and the Curie temperature of bulk Gd. *Journal of Physics Condensed Matter*, **2003**, 15, 2771-2782	1.8	66
191	Femtosecond electron dynamics of image-potential states on clean and oxygen-covered Pt(111). *Physical Review B*, **2001**, 63,	3.3	63
190	Electronic Structure of Ultrathin Bismuth Films with A7 and Black-Phosphorus-like Structures. *Journal of the Physical Society of Japan*, **2008**, 77, 014701	1.5	61
189	Origin of the surface-state band-splitting in ultrathin Bi films: from a Rashba effect to a parity effect. *New Journal of Physics*, **2008**, 10, 083038	2.9	60
188	Origin and manipulation of the Rashba splitting in surface alloys. *Europhysics Letters*, **2009**, 87, 37003	1.6	59
187	Oxygen-enabled control of Dzyaloshinskii-Moriya Interaction in ultra-thin magnetic films. *Scientific Reports*, **2016**, 6, 24634	4.9	57
186	Topological-chiral magnetic interactions driven by emergent orbital magnetism. *Nature Communications*, **2020**, 11, 511	17.4	56

185	Functionalized bismuth films: Giant gap quantum spin Hall and valley-polarized quantum anomalous Hall states. *Physical Review B*, **2015**, 91,	3.3	56
184	Electronic and magnetic structure of the (001) surfaces of V, Cr, and V/Cr. *Physical Review B*, **2000**, 62, R11937-R11940	3.3	56
183	Magnetic order and exchange interactions in monoatomic 3d transition-metal chains. *Physical Review B*, **2007**, 75,	3.3	55
182	Interface properties of NiMnSb□InP and NiMnSb□GaAs contacts. *Physical Review B*, **2005**, 71,	3.3	55
181	First-principles stabilization of an unconventional collinear magnetic ordering in distorted manganites. *Physical Review B*, **2006**, 74,	3.3	54
180	Electronic structure of buried alpha -FeSi2 and beta -FeSi2 layers: Soft-x-ray-emission and -absorption studies compared to band-structure calculations. *Physical Review B*, **1994**, 50, 18330-18340	3.3	54
179	Electronic structure and Fermi surface of Bi(100). *Physical Review B*, **2005**, 71,	3.3	53
178	Full-potential linearized augmented plane-wave method for one-dimensional systems: Gold nanowire and iron monowires in a gold tube. *Physical Review B*, **2005**, 72,	3.3	52
177	The characterization of SrTiO3() with MIES, UPS(HeI) and first-principles calculations. *Surface Science*, **2002**, 515, 499-506	1.8	51
176	Ab initio electronic structure of thallium-based topological insulators. *Physical Review B*, **2011**, 83,	3.3	50
175	Direct Observation of the Band Gap Transition in Atomically Thin ReS. *Nano Letters*, **2017**, 17, 5187-5192	11.5	49
174	Electronic structure of the Nowotny chimney-ladder silicide Ru2 Si3s. *Physical Review B*, **1997**, 55, 6918-6926	3.3	49
173	Unexpected trend of magnetic order of 3d transition-metal monolayers on W(001). *Physical Review B*, **2005**, 72,	3.3	47
172	BiTe is a dual topological insulator. *Nature Communications*, **2017**, 8, 14976	17.4	46
171	Nature of the Resistive Switching Phenomena in TiO2 and SrTiO3. *Solid State Physics*, **2014**, 353-559	2	46
170	Spin orientation and sign of the Rashba splitting in Bi/Cu(111). *Physical Review B*, **2011**, 84,	3.3	46
169	Unoccupied surface state on Pt(111) revealed by scanning tunneling spectroscopy. *Physical Review B*, **2005**, 72,	3.3	46
168	The interplay of structure and spin-orbit strength in the magnetism of metal-benzene sandwiches: from single molecules to infinite wires. *Nanotechnology*, **2007**, 18, 495402	3.4	45

167	First-principles analysis of a homochiral cycloidal magnetic structure in a monolayer Cr on W(110). *Physical Review B*, **2014**, 90,	3.3	42
166	Self-Assembled Nanometer-Scale Magnetic Networks on Surfaces: Fundamental Interactions and Functional Properties. *Advanced Functional Materials*, **2011**, 21, 1212-1228	15.6	42
165	Band dispersion in the deep 1s core level of graphene. *Nature Physics*, **2010**, 6, 345-349	16.2	42
164	Complex magnetism of iron monolayers on hexagonal transition metal surfaces from first principles. *Physical Review B*, **2009**, 79,	3.3	42
163	Cluster-like resistive switching of SrTiO3:Nb surface layers. *New Journal of Physics*, **2013**, 15, 103017	2.9	40
162	Electronic structure, surface morphology, and topologically protected surface states of Sb2Te3 thin films grown on Si(111). *Journal of Applied Physics*, **2013**, 113, 053706	2.5	39
161	Comparative study of ab initio and tight-binding electronic structure calculations applied to platinum surfaces. *Physical Review B*, **2004**, 70,	3.3	39
160	Structural, electronic, and magnetic properties of a Mn monolayer on W(110). *Physical Review B*, **2002**, 66,	3.3	39
159	Elastic properties of B2-NiTi and B2-PdTi. *Physical Review B*, **1994**, 50, 13113-13117	3.3	39
158	A-Site and B-Site Charge Orderings in an s-d Level Controlled Perovskite Oxide PbCoO. *Journal of the American Chemical Society*, **2017**, 139, 4574-4581	16.4	38
157	First-principles study of the electronic structure and exchange interactions in bcc europium. *Physical Review B*, **2003**, 68,	3.3	38
156	Structure, growth, and magnetism of Mn on Cu(110). *Physical Review B*, **1998**, 57, 2607-2620	3.3	38
155	Exchange interactions and local-moment fluctuation corrections in ferromagnets at finite temperatures based on noncollinear density-functional calculations. *Physical Review B*, **2013**, 88,	3.3	37
154	Topological phases of Bi(111) bilayer in an external exchange field. *Physical Review B*, **2012**, 86,	3.3	37
153	Role of Dzyaloshinskii-Moriya interaction for magnetism in transition-metal chains at Pt step edges. *Physical Review B*, **2016**, 94,	3.3	36
152	Extrinsic screening of ferroelectric domains in Pb(Zr0.48Ti0.52)O3. *Applied Physics Letters*, **2010**, 97, 222903	3.3	36
151	Controlling the magnetization direction in molecules via their oxidation state. *Physical Review Letters*, **2008**, 100, 117207	7.4	36
150	Spin-polarization limit in Bi2Te3 Dirac cone studied by angle- and spin-resolved photoemission experiments and ab initio calculations. *Physical Review B*, **2013**, 87,	3.3	33

149	Toward surface orbitronics: giant orbital magnetism from the orbital Rashba effect at the surface of sp-metals. *Scientific Reports*, **2017**, 7, 46742	4.9	33
148	Two-Dimensional Topological Crystalline Insulator and Topological Phase Transition in TlSe and TlS Monolayers. *Nano Letters*, **2015**, 15, 6071-5	11.5	32
147	Highly spin-polarized Dirac fermions at the graphene/Co interface. *Physical Review B*, **2015**, 91,	3.3	32
146	Rashba effect at the surfaces of rare-earth metals and their monoxides. *New Journal of Physics*, **2009**, 11, 013035	2.9	32
145	Overlayers, interlayers, and surface alloys of Mn on the Cu(111) surface. *Physical Review B*, **2000**, 62, 4726-4732	3.3	32
144	Influence of Dislocations in Transition Metal Oxides on Selected Physical and Chemical Properties. *Crystals*, **2018**, 8, 241	2.3	31
143	Spin-resolved two-photon photoemission study of the surface resonance state on Co/Cu(001). *Physical Review B*, **2006**, 74,	3.3	31
142	Magnetic phase control in monolayer films by substrate tuning. *Physical Review Letters*, **2007**, 99, 187203	7.4	29
141	Topological crystalline insulator and quantum anomalous Hall states in IV-VI-based monolayers and their quantum wells. *Physical Review B*, **2015**, 91,	3.3	28
140	Two-dimensional topological nodal line semimetal in layered X2Y (X=Ca, Sr, and Ba; Y=As, Sb, and Bi). *Physical Review B*, **2017**, 95,	3.3	28
139	Dynamics of the self-energy of the Gd(0001) surface state probed by femtosecond photoemission spectroscopy. *Physical Review Letters*, **2007**, 98, 097401	7.4	28
138	Ab initio calculations of interface effects in tunnelling through MgO barriers on Fe(100). *Journal of Physics Condensed Matter*, **2004**, 16, S5819-S5822	1.8	28
137	Quasi 2D electronic states with high spin-polarization in centrosymmetric MoS2 bulk crystals. *Scientific Reports*, **2016**, 6, 26197	4.9	28
136	Robust dual topological character with spin-valley polarization in a monolayer of the Dirac semimetal Na3Bi. *Physical Review B*, **2017**, 95,	3.3	27
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133	Evidence for topological band inversion of the phase change material Ge2Sb2Te5. *Applied Physics Letters*, **2013**, 103, 243109	3.4	26
132	Direct observation of spin-polarized surface states in the parent compound of a topological insulator using spin- and angle-resolved photoemission spectroscopy in a Mott-polarimetry mode. *New Journal of Physics*, **2010**, 12, 125001	2.9	26

131	Relaxation effects on the magnetism of decorated step edges: Co/Pt(664). *Physical Review B*, **2006**, 73,	3.3	26
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129	Strong coupling between the spin polarization of Mn and Tb in multiferroic TbMnO3 determined by x-ray resonance exchange scattering. *Physical Review B*, **2007**, 76,	3.3	26
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127	Intra- and interband electron scattering in a hybrid topological insulator: Bismuth bilayer on Bi2Se3. *Physical Review B*, **2014**, 90,	3.3	24
126	Interplay between forward and backward scattering of spin-orbit split surface states of Bi(111). *Nano Letters*, **2013**, 13, 2717-22	11.5	24
125	Anisotropic scattering of surface state electrons at a point defect on Bi(111). *Applied Physics Letters* , **2011**, 98, 022108	3.4	24
124	Magnetic anisotropy energies of metal/benzene sandwiches. *International Journal of Quantum Chemistry*, **2006**, 106, 3208-3213	2.1	24
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122	Scanning tunneling spectroscopy on Co(0001): Spectroscopic signature of stacking faults and dislocation lines. *Physical Review B*, **2004**, 70,	3.3	23
121	Magnetic Ground State Stabilized by Three-Site Interactions: Fe/Rh(111). *Physical Review Letters*, **2018**, 120, 207202	7.4	23
120	Influence of the substrate bands on the sp-levels topology of Ag films on Ge(111). *Physical Review B* , **2009**, 80,	3.3	22
119	One-dimensional spin-polarized quantum-wire states in Au on Ni(110). *Physical Review Letters*, **2000** , 85, 2561-4	7.4	22
118	First-principles studies of FeS2 using many-body perturbation theory in the G0W0 approximation. *Physical Review B*, **2013**, 88,	3.3	21
117	Resistive Switching of a Quasi-Homogeneous Distribution of Filaments Generated at Heat-Treated TiO2 (110)-Surfaces. *Advanced Functional Materials*, **2015**, 25, 6382-6389	15.6	21
116	Magnetic order in RMn2Ge2 (R=Y,Ca) compounds and their solid solutions with LaMn2Ge2. *Physical Review B*, **2007**, 75,	3.3	21
115	Spin-Flip and Element-Sensitive Electron Scattering in the BiAg2 Surface Alloy. *Physical Review Letters*, **2015**, 114, 166801	7.4	20
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113	Electronic band structure and Fermi surface of ferromagnetic Tb: Experiment and theory. *Physical Review B*, **2007**, 76,	3.3	20
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108	Magnetism of 3d transition-metal monolayers on Rh(100). *Physical Review B*, **2011**, 83,	3.3	19
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105	Interpreting STM images of the MnCu/Cu(100) surface alloy. *Physical Review B*, **2000**, 62, 2862-2868	3.3	19
104	Magnetization-dependent Rashba splitting of quantum well states at the Co/W interface. *Physical Review B*, **2015**, 91,	3.3	18
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102	Manipulating the Rashba-type spin splitting and spin texture of Pb quantum well states. *Physical Review B*, **2011**, 84,	3.3	17
101	Comparison of first-principles methods to extract magnetic parameters in ultrathin films: Co/Pt(111). *Physical Review B*, **2019**, 99,	3.3	16
100	Co atoms on Bi2Se3revealing a coverage dependent spin reorientation transition. *New Journal of Physics*, **2013**, 15, 113026	2.9	16
99	Three- and two-dimensional topological insulators in Pb2Sb2Te5, Pb2Bi2Te5, and Pb2Bi2Se5 layered compounds. *JETP Letters*, **2011**, 94, 217-221	1.2	16
98	Modeling magnetism of hexagonal Fe monolayers on 4d substrates. *Physica Status Solidi (B): Basic Research*, **2011**, 248, 2242-2247	1.3	16
97	Mn-Rich MnSb Te : A Topological Insulator with Magnetic Gap Closing at High Curie Temperatures of 45-50 K. *Advanced Materials*, **2021**, 33, e2102935	24	16
96	Manipulating quantum-well states by surface alloying: Pb on ultrathin Ag films. *Physical Review B*, **2008**, 78,	3.3	15

95	Martensitic phase transformation and electronic structure of NiTi and PdTi. *The Philosophical Magazine: Physics of Condensed Matter B, Statistical Mechanics, Electronic, Optical and Magnetic Properties*, **1996**, 73, 511-524		15
94	Tailoring the topological surface state in ultrathin Sn(111) films. *Physical Review B*, **2019**, 100,	3.3	15
93	Tuning the Curie temperature of FeCo compounds by tetragonal distortion. *Applied Physics Letters*, **2013**, 103, 102404	3.4	14
92	Conservation of the lateral electron momentum at a metal-semiconductor interface studied by ballistic electron emission microscopy. *Physical Review Letters*, **2009**, 102, 136807	7.4	14
91	Intrinsic spin-Hall accumulation in honeycomb lattices: Band structure effects. *Physical Review B*, **2007**, 76,	3.3	14
90	Magnetic structure and transport properties of noncollinear LaMn2X2(X=Ge,Si) systems. *Physical Review B*, **2004**, 70,	3.3	14
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83	Self-reduction of the native TiO (110) surface during cooling after thermal annealing - in-operando investigations. *Scientific Reports*, **2019**, 9, 12563	4.9	12
82	Mapping the band structure of GeSbTe phase change alloys around the Fermi level. *Communications Physics*, **2018**, 1,	5.4	12
81	Charge and orbital order at head-to-head domain walls in PbTiO3. *Physical Review B*, **2014**, 90,	3.3	12
80	Influence of the GeSb sublattice atomic composition on the topological electronic properties of Ge2Sb2Te5. *Applied Surface Science*, **2013**, 267, 169-172	6.7	12
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77	Anomalous behavior of the electronic structure of (Bi1−xInx)2Se3 across the quantum phase transition from topological to trivial insulator. *Physical Review B*, **2018**, 98,	3.3	12
76	Magnetism in a graphene-4f–5d hybrid system. *Physical Review B*, **2017**, 95,	3.3	11
75	Electronic Structure of Oxygen-Deficient SrTiO3 and Sr2TiO4. *Crystals*, **2019**, 9, 580	2.3	11
74	Spin-resolved photoemission and ab initio theory of graphene/SiC. *Physical Review B*, **2013**, 88,	3.3	11
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70	Comment on "Ultrathin Mn films on Cu(111) substrates: Frustrated antiferromagnetic order" *Physical Review B*, **2001**, 63,	3.3	11
69	Fermi Surface Manipulation by External Magnetic Field Demonstrated for a Prototypical Ferromagnet. *Physical Review X*, **2016**, 6,	9.1	11
68	Towards microscopic control of the magnetic exchange coupling at the surface of a topological insulator. *JPhys Materials*, **2018**, 1, 015002	4.2	11
67	Indirect chiral magnetic exchange through Dzyaloshinskii-Moriya-enhanced RKKY interactions in manganese oxide chains on Ir(100). *Nature Communications*, **2019**, 10, 2610	17.4	10
66	Kink far below the Fermi level reveals new electron-magnon scattering channel in Fe. *Nature Communications*, **2019**, 10, 505	17.4	10
65	Plumbene on a Magnetic Substrate: A Combined Scanning Tunneling Microscopy and Density Functional Theory Study. *Physical Review Letters*, **2020**, 124, 126401	7.4	10
64	Chalcogenide-based van der Waals epitaxy: Interface conductivity of tellurium on Si(111). *Physical Review B*, **2017**, 96,	3.3	10
63	Scattering properties of the three-dimensional topological insulator Sb2Te3: Coexistence of topologically trivial and nontrivial surface states with opposite spin-momentum helicity. *Physical Review B*, **2016**, 93,	3.3	9
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61	Quantum electron confinement in closely matched metals: Au films on Ag(111). *Physical Review B*, **2012**, 86,	3.3	9
60	First-principles investigation of Co wires at Pt(1 1 1) step-edges. *Surface Science*, **2006**, 600, 4301-4304	1.8	9

59	Resolving noncollinear magnetism by spin-polarized scanning tunneling microscopy. *Journal of Magnetism and Magnetic Materials*, **2002**, 240, 57-63	2.8	9
58	Tunneling voltage dependent heights of faulted and unfaulted Ir islands on Ir(111). *Physical Review B*, **2003**, 68,	3.3	9
57	First-principles investigation of the stability of 3d monolayer/Fe(001) against bilayer formation. *Journal of Applied Physics*, **2000**, 87, 5935-5937	2.5	9
56	Electric dipole moment as descriptor for interfacial Dzyaloshinskii-Moriya interaction. *Physical Review Materials*, **2020**, 4,	3.2	9
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