Tim Oliver Wehling

List of Publications by Year
in descending order

118 papers	9,274 citations	41344 49 h-index	38395 95 g-index
118 all docs	118 docs citations	118 times ranked	11301 citing authors

#	Article	IF	Citations
1	Molecular Doping of Graphene. Nano Letters, 2008, 8, 173-177.	9.1	1,025
2	Dirac materials. Advances in Physics, 2014, 63, 1-76.	14.4	759
3	Strength of Effective Coulomb Interactions in Graphene and Graphite. Physical Review Letters, 2011, 106, 236805.	7.8	453
4	Resonant Scattering by Realistic Impurities in Graphene. Physical Review Letters, 2010, 105, 056802.	7.8	300
5	First-principles studies of water adsorption on graphene: The role of the substrate. Applied Physics Letters, 2008, 93, .	3.3	294
6	Adhesion and electronic structure of graphene on hexagonal boron nitride substrates. Physical Review B, 2011, 84, .	3.2	269
7	Adsorbates on graphene: Impurity states and electron scattering. Chemical Physics Letters, 2009, 476, 125-134.	2.6	234
8	Ultrafast Transport of Laser-Excited Spin-Polarized Carriers in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Au</mml:mi><mml:mo>/</mml:mo><mml:mi>Fe</mml:mi><mml:mo>/</mml:mo><mml:mi>MgO</mml:mi><mml:mo stretchy="false">(</mml:mo><mml:mn>001</mml:mn><mml:mo) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 447 Td (stretchy="false">)</mml:mo>	7.8	224
9	Impurities on graphene: Midgap states and migration barriers. Physical Review B, 2009, 80, .	3.2	217
10	Local electronic signatures of impurity states in graphene. Physical Review B, 2007, 75, .	3.2	216
11	Influence of Excited Carriers on the Optical and Electronic Properties of MoS₂. Nano Letters, 2014, 14, 3743-3748.	9.1	213
12	Optimal Hubbard Models for Materials with Nonlocal Coulomb Interactions: Graphene, Silicene, and Benzene. Physical Review Letters, 2013, 111, 036601.	7.8	209
13	Plane-wave based electronic structure calculations for correlated materials using dynamical mean-field theory and projected local orbitals. Physical Review B, 2008, 77, .	3.2	202
14	Current-Driven Spin Dynamics of Artificially Constructed Quantum Magnets. Science, 2013, 339, 55-59.	12.6	197
15	Efficient Excitonic Photoluminescence in Direct and Indirect Band Gap Monolayer MoS₂. Nano Letters, 2015, 15, 6841-6847.	9.1	171
16	Adatoms and Clusters of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mn>3</mml:mn><mml:mi>d</mml:mi></mml:math>Transition Metals on Graphene: Electronic and Magnetic Configurations. Physical Review Letters, 2013, 110, 136804.	7.8	159
17	Transition-metal adatoms on graphene: Influence of local Coulomb interactions on chemical bonding and magnetic moments. Physical Review B, 2011, 84, .	3.2	149
18	In-Plane Magnetic Anisotropy of Fe Atoms on<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>Bi</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi>Se</mml:mi> stretchy="false">(</mml:mo><mml:mn>111</mml:mn><mml:mo) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 47 Td (stretchy="false">)</mml	7.8	144

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19	Exciton fission in monolayer transition metal dichalcogenide semiconductors. Nature Communications, 2017, 8, 1166.	12.8	142
20	Orbitally controlled Kondo effect of Co adatoms on graphene. Physical Review B, 2010, 81, .	3.2	132
21	Nature of the Mott Transition in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>Ca</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi>RuO</mml:mi><mml:mn Physical Review Letters, 2010, 104, 226401.	7.8	121
22	Graphene-Based Topological Insulator with an Intrinsic Bulk Band Gap above Room Temperature. Nano Letters, 2013, 13, 6251-6255.	9.1	116
23	Midgap states in corrugated graphene: Ab initio calculations and effective field theory. Europhysics Letters, 2008, 84, 17003.	2.0	113
24	The Dielectric Impact of Layer Distances on Exciton and Trion Binding Energies in van der Waals Heterostructures. Nano Letters, 2018, 18, 2725-2732.	9.1	113
25	Double counting in LDA+DMFTâ€"The example of NiO. Journal of Electron Spectroscopy and Related Phenomena, 2010, 181, 11-15.	1.7	108
26	Doping mechanisms in graphene-MoS2 hybrids. Applied Physics Letters, 2013, 103, .	3.3	107
27	Observation of Exciton Redshiftâ€"Blueshift Crossover in Monolayer WS₂. Nano Letters, 2017, 17, 4210-4216.	9.1	107
28	Observation of Carrier-Density-Dependent Many-Body Effects in Graphene via Tunneling Spectroscopy. Physical Review Letters, 2010, 104, 036805.	7.8	106
29	Controllable Magnetic Doping of the Surface State of a Topological Insulator. Physical Review Letters, 2013, 110, 126804.	7.8	98
30	Ferromagnetic two-dimensional crystals: Single layers of K<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>CuF<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>4</mml:mn></mml:msub></mml:math>. Physical Review B, 2013, 88, .	3.2	85
31	Two-Dimensional Heterojunctions from Nonlocal Manipulations of the Interactions. Nano Letters, 2016, 16, 2322-2327.	9.1	80
32	Theory of Fano resonances in graphene: The influence of orbital and structural symmetries on STM spectra. Physical Review B, 2010, 81, .	3.2	79
33	Controlling the Kondo Effect in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>CoCu</mml:mi><mml:mi>n</mml:mi></mml:msub></mml:math>Clusters Atom by Atom. Physical Review Letters, 2008, 101, 266803.	7.8	77
34	Phonon-Mediated Tunneling into Graphene. Physical Review Letters, 2008, 101, 216803.	7.8	76
35	The Backside of Graphene: Manipulating Adsorption by Intercalation. Nano Letters, 2013, 13, 5013-5019.	9.1	74
36	Electric-Field Switchable Second-Harmonic Generation in Bilayer MoS₂ by Inversion Symmetry Breaking. Nano Letters, 2017, 17, 392-398.	9.1	71

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37	Europium underneath graphene on Ir(111): Intercalation mechanism, magnetism, and band structure. Physical Review B, 2014, 90, .	3.2	67
38	Internal screening and dielectric engineering in magic-angle twisted bilayer graphene. Physical Review B, 2019, 100, .	3.2	67
39	Rigid Band Shifts in Two-Dimensional Semiconductors through External Dielectric Screening. Physical Review Letters, 2019, 123, 206403.	7.8	65
40	Tuning emergent magnetism in a Hund's impurity. Nature Nanotechnology, 2015, 10, 958-964.	31.5	62
41	Phase diagram of electron-doped dichalcogenides. Physical Review B, 2014, 90, .	3.2	59
42	Separation of ultrafast spin currents and spin-flip scattering in Co/Cu(001) driven by femtosecond laser excitation employing the complex magneto-optical Kerr effect. Physical Review B, 2015, 92, .	3.2	59
43	Two-Site Kondo Effect in Atomic Chains. Physical Review Letters, 2011, 107, 106804.	7.8	58
44	Electronic Structures and Optical Properties of Partially and Fully Fluorinated Graphene. Physical Review Letters, 2015, 114, 047403.	7.8	58
45	Intact Dirac Cones at Broken Sublattice Symmetry: Photoemission Study of Graphene on Ni and Co. Physical Review X, 2012, 2, .	8.9	57
46	General DFT + + method implemented with projector augmented waves: electronic structure of SrVO₃and the Mott transition in Ca_{2 â^'x}Sr_xRuO₄. Journal of Physics Condensed Matter, 2011, 23, 085601.	1.8	56
47	Wannier function approach to realistic Coulomb interactions in layered materials and heterostructures. Physical Review B, 2015, 92, .	3.2	55
48	Introducing strong correlation effects into graphene by gadolinium intercalation. Physical Review B, 2019, 100, .	3.2	55
49	Multiorbital Kondo physics of Co in Cu hosts. Physical Review B, 2012, 85, .	3.2	50
50	Strain in Epitaxial Graphene Visualized by Intercalation. Physical Review Letters, 2013, 110, 086111.	7.8	50
51	Multiscale magnetic study of Ni(111) and graphene on Ni(111). Physical Review B, 2011, 84, .	3.2	48
52	Tuning the van der Waals Interaction of Graphene with Molecules via Doping. Physical Review Letters, 2015, 115, 236101.	7.8	48
53	Environmental Control of Charge Density Wave Order in Monolayer 2H-TaS₂. ACS Nano, 2019, 13, 10210-10220.	14.6	44
54	Local Gating of an Ir(111) Surface Resonance by Graphene Islands. Physical Review Letters, 2012, 108, 206805.	7.8	43

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55	Quantum-Dot-Like States in Molybdenum Disulfide Nanostructures Due to the Interplay of Local Surface Wrinkling, Strain, and Dielectric Confinement. Nano Letters, 2019, 19, 3182-3186.	9.1	43
56	Phase coexistence of clusters and islands: europium on graphene. New Journal of Physics, 2012, 14, 023022.	2.9	42
57	Probing of valley polarization in graphene via optical second-harmonic generation. Physical Review B, 2015, 91, .	3.2	41
58	Competing Coulomb and electronâ€“phonon interactions in NbS2. Npj Quantum Materials, 2018, 3, .	5.2	41
59	Atomic-scale quantification of charge densities in two-dimensional materials. Physical Review B, 2018, 98, .	3.2	36
60	Relevance of the complete Coulomb interaction matrix for the Kondo problem: Co impurities in Cu hosts. Physical Review B, 2009, 80, .	3.2	31
61	Nonequilibrium carrier dynamics in transition metal dichalcogenide semiconductors. 2D Materials, 2016, 3, 031006.	4.4	30
62	Pseudodoping of a metallic two-dimensional material by the supporting substrate. Nature Communications, 2019, 10, 180.	12.8	30
63	Electronic Transport in Graphene with Aggregated Hydrogen Adatoms. Physical Review Letters, 2014, 113, 246601.	7.8	29
64	Proximity enhanced quantum spin Hall state in graphene. Carbon, 2015, 87, 418-423.	10.3	29
65	Phonon-Pump Extreme-Ultraviolet-Photoemission Probe in Graphene: Anomalous Heating of Dirac Carriers by Lattice Deformation. Physical Review Letters, 2015, 114, 125503.	7.8	29
66	Valley plasmonics in transition metal dichalcogenides. Physical Review B, 2016, 93, .	3.2	28
67	Orbital selective coupling between Ni adatoms and graphene Dirac electrons. Physical Review B, 2012, 85, .	3.2	27
68	Phthalocyanine adsorption to graphene on Ir(111): Evidence for decoupling from vibrational spectroscopy. Journal of Chemical Physics, 2014, 141, 184308.	3.0	26
69	Enhanced Screening in Chemically Functionalized Graphene. Physical Review Letters, 2012, 109, 156601.	7.8	25
70	Electronic structure of single layer 1T-NbSe₂: interplay of lattice distortions, non-local exchange, and Mottâ€“Hubbard correlations. Journal of Physics Condensed Matter, 2018, 30, 325601.	1.8	25
71	Midgap states and band gap modification in defective graphene/h-BN heterostructures. Physical Review B, 2016, 94, .	3.2	23
72	Capturing nonlocal interaction effects in the Hubbard model: Optimal mappings and limits of applicability. Physical Review B, 2016, 94, .	3.2	23

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73	Reducing orbital occupancy in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>VO</mml:mi><mml:mn>2</mml:mn></mml:msub></mml suppresses Mott physics while Peierls distortions persist. Physical Review B, 2017, 96, .	3.2	23
74	Importance of full Coulomb interactions for understanding the electronic structure ofÎ´-Pu. Physical Review B, 2010, 82, .	3.2	21
75	Realistic theory of electronic correlations in nanoscopic systems. European Physical Journal: Special Topics, 2017, 226, 2615-2640.	2.6	21
76	Frequency-dependent substrate screening of excitons in atomically thin transition metal dichalcogenide semiconductors. Physical Review B, 2018, 98, .	3.2	20
77	Long- versus Short-Range Scattering in Doped Epitaxial Graphene. Nano Letters, 2015, 15, 2825-2829.	9.1	19
78	Inelastic electron tunneling into graphene nanostructures on a metal surface. Physical Review B, 2017, 95, .	3.2	18
79	Local impurity effects in superconducting graphene. Physical Review B, 2008, 78, .	3.2	17
80	Noninvasive control of excitons in two-dimensional materials. Physical Review B, 2017, 96, .	3.2	16
81	A full gap above the Fermi level: the charge density wave of monolayer VS2. Nature Communications, 2021, 12, 6837.	12.8	16
82	Charge inhomogeneity in a single and bilayer graphene. Physica B: Condensed Matter, 2010, 405, 2241-2244.	2.7	15
83	Correlated electron behavior of metal-organic molecules: Insights from density functional theory combined with many-body effects using exact diagonalization. Physical Review B, 2016, 93, .	3.2	15
84	Random phase approximation for gapped systems: Role of vertex corrections and applicability of the constrained random phase approximation. Physical Review B, 2021, 104, .	3.2	15
85	Excitation Spectra of Transition-Metal Atoms on the Ag (100) Surface Controlled by Hundâ€™s Exchange. Physical Review Letters, 2013, 110, 186404.	7.8	14
86	Manifestation of nonlocal electron-electron interaction in graphene. Physical Review B, 2016, 94, .	3.2	14
87	Interplay of screening and superconductivity in low-dimensional materials. Physical Review B, 2016, 94, .	3.2	13
88	Deconfinement of Mott localized electrons into topological and spinâ€“orbit-coupled Dirac fermions. Npj Quantum Materials, 2020, 5, .	5.2	13
89	Ab initio phonon self-energies and fluctuation diagnostics of phonon anomalies: Lattice instabilities from Dirac pseudospin physics in transition metal dichalcogenides. Physical Review B, 2020, 101, .	3.2	13
90	Emergent properties and trends of a new class of carbon nanocomposites: graphene nanoribbons encapsulated in a carbon nanotube. Nanoscale, 2013, 5, 3306.	5.6	12

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91	Ultrafast dynamics at lanthanide surfaces: microscopic interaction of the charge, lattice and spin subsystems. Journal Physics D: Applied Physics, 2008, 41, 164004.	2.8	11
92	Nickel: The time-reversal symmetry conserving partner of iron on a chalcogenide topological insulator. Physical Review B, 2016, 94, .	3.2	11
93	Efficient fluctuation-exchange approach to low-temperature spin fluctuations and superconductivity: From the Hubbard model to <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Na</mml:mi><mml:mi>x</mml:mi></mml:msub><mml:msub><mml:mi mathvariant="normal">H</mml:mi></mml:mrow><mml:mn>2</mml:mn></mml:msub><mml:mi mathvariant="normal">O</mml:mi></mml:mrow></mml:math>. Physical Review B, 2021, 103, .	3.2	11
94	Spectral Functions of Isolated Ce Adatoms on Paramagnetic Surfaces. Physical Review Letters, 2011, 107, 026801.	7.8	10
95	Possibility of a Field Effect Transistor Based on Dirac Particles in Semiconducting Anatase-TiO₂ Nanowires. Nano Letters, 2013, 13, 1073-1079.	9.1	10
96	Magnetic impurity affected by spin-orbit coupling: Behavior near a topological phase transition. Physical Review B, 2013, 88, .	3.2	10
97	Electronic excitation spectra of the five-orbital Anderson impurity model: From the atomic limit to itinerant atomic magnetism. Physical Review B, 2014, 89, .	3.2	10
98	Variational exact diagonalization method for Anderson impurity models. Physical Review B, 2015, 91, .	3.2	10
99	First-order metal-insulator transitions in the extended Hubbard model due to self-consistent screening of the effective interaction. Physical Review B, 2018, 97, .	3.2	10
100	Bandwidth renormalization due to the intersite Coulomb interaction. Journal of Physics Condensed Matter, 2019, 31, 465603.	1.8	9
101	Effects of the Fermi level energy on the adsorption of O ₂ to monolayer MoS ₂. 2D Materials, 2018, 5, 045025.	4.4	8
102	Thermodynamics of the metal-insulator transition in the extended Hubbard model. SciPost Physics, 2019, 6, .	4.9	8
103	Two-dimensional materials: Electronic structure and many-body effects. Annalen Der Physik, 2014, 526, A81-A82.	2.4	7
104	Electronic structure of Fe_{1.08}Te bulk crystals and epitaxial FeTe thin films on Bi₂Te₃. Journal of Physics Condensed Matter, 2018, 30, 065502.	1.8	7
105	Polar EuO(111) on Ir(111): A two-dimensional oxide. Physical Review B, 2014, 89, .	3.2	6
106	Many-body effects on Cr(001) surfaces: An LDA+DMFT study. Physical Review B, 2016, 93, .	3.2	6
107	Local Probes of Graphene Lattice Dynamics. Small Methods, 2020, 4, 1900817.	8.6	6
108	Doping fingerprints of spin and lattice fluctuations in moirÃ© superlattice systems. Physical Review B, 2022, 105, .	3.2	6

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109	Manipulation of the two-site Kondo effect in linear CoCu_nCoCu_m clusters. Journal of Physics Condensed Matter, 2020, 32, 055303.	1.8	5
110	Charge-doping-induced phase transitions in hydrogenated and fluorinated graphene. Physical Review B, 2014, 90, .	3.2	4
111	Optically and Electrically Controllable Adatom Spinâ€“orbital Dynamics in Transition Metal Dichalcogenides. Nano Letters, 2017, 17, 6721-6726.	9.1	4
112	Analyzing ultrafast laser-induced demagnetization in Co/Cu(001) via the depth sensitivity of the time-resolved transversal magneto-optical Kerr effect. , 2016, , .		3
113	Downfolding approaches to electron-ion coupling: Constrained density-functional perturbation theory for molecules. Physical Review B, 2021, 103, .	3.2	3
114	Ultrafast Non-local Spin Dynamics in Metallic Bi-Layers by Linear and Non-linear Magneto-Optics. Springer Proceedings in Physics, 2015, , 34-36.	0.2	2
115	Theory of Doping: Monovalent Adsorbates. , 0, , .		1
116	TiO2 Nanowires as a Wide Bandgap Dirac Material: a numerical study of impurity scattering and Anderson disorder. Materials Research Society Symposia Proceedings, 2014, 1659, 187-191.	0.1	0
117	Nonlocal exchange interactions in strongly correlated electron systems. Physical Review B, 2020, 101, .	3.2	0
118	Downfolding the Su-Schrieffer-Heeger model. SciPost Physics, 2021, 11, .	4.9	0