Viraht Sahni

List of Publications by Year
in descending order

81 papers	2,261 citations	304743 22 h-index	233421 45 g-index
92 all docs	92 docs citations	92 times ranked	783 citing authors

#	Article	IF	Citations
1	Wave function identity: A new symmetry for 2-electron systems in an electromagnetic field. Chemical Physics, 2022, 556, 111453.	1.9	4
2	The â€˜Quantal Newtonianâ€™ First Law:Â A Complementary Perspective to the Stationaryâ€state Quantum Theory of Electrons. ChemPhysChem, 2022, , .	2.1	1
3	<scp>SchrÃ¶dingerâ€“Pauli</scp> theory of electrons: New perspectives. International Journal of Quantum Chemistry, 2021, 121, e26556.	2.0	11
4	Triplet 23S state of a quantum dot in a magnetic field: A â€˜Quantal Newtonianâ€™ first law study. Chemical Physics, 2021, 546, 111073.	1.9	10
5	Study of the kinetic energy densities of electrons as applied to quantum dots in a magnetic field. International Journal of Quantum Chemistry, 2019, 119, e25818.	2.0	2
6	Generalization of the SchrÃ¶dinger Theory of Electrons. Journal of Computational Chemistry, 2018, 39, 1083-1089.	3.3	7
7	Kinetic effects in 2D and 3D quantum dots: Comparison between high and low electron correlation regimes. Computational and Theoretical Chemistry, 2018, 1138, 140-157.	2.5	5
8	Dissipation Effects in SchrÃ¶dinger and Quantal Density Functional Theories of Electrons in an Electromagnetic Field. Computation, 2018, 6, 25.	2.0	1
9	Electron correlations in an excited state of a quantum dot in a uniform magnetic field. Computational and Theoretical Chemistry, 2017, 1114, 125-139.	2.5	14
10	SchrÃ¶dinger Theory of Electrons in Electromagnetic Fields: New Perspectives. Computation, 2017, 5, 15.	2.0	9
11	Electron Correlations in Local Effective Potential Theory. Computation, 2016, 4, 30.	2.0	11
12	Quantal Density Functional Theory. , 2016, , .		15
13	Hohenbergâ€“Kohn, Kohnâ€“Sham, and Runge-Gross Density Functional Theories. , 2016, , 135-183.		0
14	SchrÃ¶dinger Theory from the â€˜Newtonianâ€™ Perspective of â€˜Classicalâ€™ Fields Derived fromÂQuantal Sources. , 2016, , 15-65.		1
15	Generalized Hohenberg-Kohn Theorems inÂElectrostatic and Magnetostatic Fields. , 2016, , 253-282.		0
16	Quantal Density Functional Theory. , 2016, , 67-133.		0
17	Hohenberg-Kohn theorems in electrostatic and uniform magnetostatic fields. Journal of Chemical Physics, 2015, 143, 174105.	3.0	18
18	Wave function for harmonically confined electrons in time-dependent electric and magnetostatic fields. Journal of Chemical Physics, 2014, 140, 024318.	3.0	10

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19	Wigner high-electron-correlation regime of nonuniform density systems: A quantal-density-functional-theory study. Physical Review A, 2014, 90, .	2.5	13
20	Comment on â€œDensity and physical current density functional theoryâ€. International Journal of Quantum Chemistry, 2014, 114, 233-236.	2.0	6
21	Wigner high electron correlation regime in nonuniform electron density systems: Kinetic and correlation-kinetic aspects. Computational and Theoretical Chemistry, 2014, 1035, 14-18.	2.5	12
22	Reply to the comment by Vignale et al. International Journal of Quantum Chemistry, 2013, 113, 1424-1425.	2.0	6
23	Hohenberg-Kohn theorem including electron spin. Physical Review A, 2012, 86, .	2.5	7
24	Demonstration of the Gunnarsson-Lundqvist theorem and the multiplicity of potentials for excited states. Physical Review A, 2012, 85, .	2.5	12
25	Hohenberg-Kohn and Percus-Levy-Lieb proofs of density-functional theory. Physical Review A, 2012, 85, .	2.5	14
26	Generalization of the Hohenbergâ€“Kohn theorem to the presence of a magnetostatic field. Journal of Physics and Chemistry of Solids, 2012, 73, 630-634.	4.0	12
27	Quantal density-functional theory in the presence of a magnetic field. Physical Review A, 2011, 83, .	2.5	35
28	Density and physical current density functional theory. International Journal of Quantum Chemistry, 2010, 110, 2833-2843.	2.0	26
29	Particle number and probability density functional theory and A-representability. Journal of Chemical Physics, 2010, 132, 164116.	3.0	5
30	Quantal Density Functional Theory II. , 2009, , .		19
31	New perspectives on the fundamental theorem of density functional theory. International Journal of Quantum Chemistry, 2008, 108, 2756-2762.	2.0	16
32	Local effective potential theory: Nonuniqueness of potential and wave function. Journal of Chemical Physics, 2007, 126, 204106.	3.0	8
33	Asymptotic near-nucleus structure of the electron-interaction potential in local effective potential theories. Physical Review A, 2007, 75, .	2.5	7
34	Normalization and Fermiâ€“Coulomb and Coulomb hole sum rules for approximate wave functions. International Journal of Quantum Chemistry, 2007, 107, 816-823.	2.0	3
35	Quantal density functional theory: Wave function arbitrariness of the noninteracting fermion model. International Journal of Quantum Chemistry, 2006, 106, 3087-3096.	2.0	3
36	Exact electronic properties in the classically forbidden region of a metal surface. International Journal of Quantum Chemistry, 2005, 104, 929-945.	2.0	14

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37	Determination of wave-function functionals: The constrained-search variational method. Physical Review A, 2005, 72, .	2.5	7
38	Quantal density functional theory of the hydrogen molecule. Journal of Chemical Physics, 2004, 120, 5642-5649.	3.0	9
39	Determination of a Wave Function Functional. Physical Review Letters, 2004, 93, 130401.	7.8	19
40	On Ehrenfest's theorem. International Journal of Quantum Chemistry, 2004, 97, 953-960.	2.0	2
41	State arbitrariness of the noninteracting fermion model in quantal density functional theory. International Journal of Quantum Chemistry, 2004, 100, 858-866.	2.0	8
42	Corollary to the Hohenberg-Kohn theorem. International Journal of Quantum Chemistry, 2003, 95, 387-393.	2.0	12
43	Integral coalescence conditions in Dâ©¾2, dimension space. Journal of Chemical Physics, 2003, 119, 7083-7086.	3.0	33
44	Quantal density-functional theory of excited states: The state arbitrariness of the model noninteracting system. Physical Review A, 2003, 68, .	2.5	15
45	Criticality of the electron-nucleus cusp condition to local effective potential-energy theories. Physical Review A, 2003, 67, .	2.5	21
46	Quantal Density Functional Theory of Degenerate States. Physical Review Letters, 2003, 90, 123001.	7.8	26
47	Quantum mechanical image potential theory. Physical Review B, 2002, 66, .	3.2	14
48	Quantal density functional theory of excited states: Application to an exactly solvable model. International Journal of Quantum Chemistry, 2001, 85, 436-448.	2.0	28
49	Quantal Density Functional Theory of Excited States. Physical Review Letters, 2001, 87, 113002.	7.8	47
50	Sum rules and properties in time-dependent density-functional theory. Physical Review A, 2001, 63, .	2.5	23
51	Time-dependent differential virial theorems. International Journal of Quantum Chemistry, 2000, 78, 341-347.	2.0	26
52	Proof of finiteness of Kohn-Sham theory electron interaction potential at the nucleus of atoms. International Journal of Quantum Chemistry, 2000, 79, 205-208.	2.0	17
53	Analytical properties of the Kohn-Sham theory exchange and correlation energy and potential via quantal density functional theory. International Journal of Quantum Chemistry, 2000, 80, 555-566.	2.0	31
54	Origin of the derivative discontinuity in density functional theory. Physical Review B, 2000, 62, 16364-16369.	3.2	21

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55	Critical analysis of the Colle-Salvetti wave-function functional of the density. Physical Review A, 1999, 60, 4135-4139.	2.5	43
56	Electron correlations in Kohn-Sham exchange-only theory. International Journal of Quantum Chemistry, 1999, 71, 473-480.	2.0	7
57	Structure of the Pauli and Correlation-Kinetic Components of the Kohnâ€“Sham Exchange Potential at a Metal Surface. Annals of Physics, 1998, 268, 149-171.	2.8	7
58	Analytical asymptotic structure of the Pauli, Coulomb, and correlation-kinetic components of the Kohn-Sham theory exchange-correlation potential in atoms. International Journal of Quantum Chemistry, 1998, 70, 671-680.	2.0	25
59	Quantum-mechanical interpretation of time-dependent density-functional theory. Physics Letters, Section A: General, Atomic and Solid State Physics, 1998, 247, 303-308.	2.1	29
60	Physics of transformation from SchrÃ¶dinger theory to Kohn-Sham density-functional theory: Application to an exactly solvable model. Physical Review A, 1998, 57, 2527-2538.	2.5	98
61	Recent Developments in the Electronic Structure of Metal Surfaces. Advances in Quantum Chemistry, 1998, 33, 241-271.	0.8	9
62	Analytical asymptotic structure of the Kohn-Sham exchange potential at a metal surface. Physical Review B, 1997, 56, 3655-3658.	3.2	24
63	Physical interpretation of density-functional theory and of its representation of the Hartree-Fock and Hartree theories. Physical Review A, 1997, 55, 1846-1856.	2.5	66
64	Quantum mechanics of asymptotic effective potential and â€˜imageâ€™ charge at metal surfaces. Progress in Surface Science, 1997, 54, 115-163.	8.3	14
65	Structure of the correlation-kinetic component of the Kohn-Sham exchange potential in atoms and at metal surfaces. International Journal of Quantum Chemistry, 1997, 65, 893-906.	2.0	13
66	Analytical Asymptotic Structure of the Slater Exchange and Kohnâ€“Sham Exchange and Correlation Potentials at a Metal Surface. Annals of Physics, 1997, 259, 97-119.	2.8	21
67	Analytical asymptotic structure of the exchange and correlation potentials at a metal surface. Physics Letters, Section A: General, Atomic and Solid State Physics, 1996, 212, 263-269.	2.1	22
68	Quantum-mechanical interpretation of density functional theory. Topics in Current Chemistry, 1996, , 1-39.	4.0	40
69	Reinterpretation of Electron Correlations within Density Functional Theory: Hartree, Local Density and Gradient Expansion Approximations via the Work Formalism of Electronic Structure. Recent Advances in Computational, 1995, , 79-128.	0.8	1
70	Derivation and reinterpretation of approximations in SchrÃ¶udinger and Kohn-;Sham theory via a hierarchy within the work formalism. International Journal of Quantum Chemistry, 1995, 53, 591-606.	2.0	6
71	The work formalism of electronic structure. International Journal of Quantum Chemistry, 1995, 56, 265-283.	2.0	11
72	Coulomb holes and correlation potentials in the helium atom. Physical Review A, 1995, 51, 2815-2825.	2.5	32

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73	Asymptotic structure of the Kohn-Sham effective potential at metal surfaces. International Journal of Quantum Chemistry, 1993, 48, 101-109.	2.0	14
74	The gradient expansion approximation for exchange: A physical prespective. International Journal of Quantum Chemistry, 1992, 44, 333-345.	2.0	10
75	Analysis of the density-gradient-expansion approximation for the exchange-correlation energy of density-functional theory. International Journal of Quantum Chemistry, 1991, 40, 235-248.	2.0	8
76	Generalized gradient-expansion approximation for the exchange energy. Physical Review B, 1991, 44, 10921-10924.	3.2	10
77	Quantum-Mechanical interpretation of the local many-body potential of density-functional theory. International Journal of Quantum Chemistry, 1990, 38, 569-584.	2.0	65
78	Quantum-mechanical origin of the asymptotic effective potential at metal surfaces. Physical Review B, 1989, 39, 10437-10440.	3.2	44
79	Hartree-Fock theory of the inhomogeneous electron gas at metallic surfaces. Surface Science, 1989, 213, 226-253.	1.9	36
80	Structure of the Fermi hole at surfaces. Physical Review B, 1988, 37, 745-754.	3.2	50
81	Exact differential equation for the density and ionization energy of a many-particle system. Physical Review A, 1984, 30, 2745-2748.	2.5	803