Ronald Redmer

List of Publications by Year
in descending order

112 papers	6,886 citations	71102 41 h-index	60623 81 g-index
114 all docs	114 docs citations	114 times ranked	4207 citing authors

#	Article	IF	Citations
1	Electron-Ion Temperature Relaxation in Warm Dense Hydrogen Observed With Picosecond Resolved X-Ray Scattering. Frontiers in Physics, 2022, 10, .	2.1	9
2	Extending <i>ab initio</i> simulations for the ion-ion structure factor of warm dense aluminum to the hydrodynamic limit using neural network potentials. Physical Review B, 2022, 105, .	3.2	6
3	Towards performing high-resolution inelastic X-ray scattering measurements at hard X-ray free-electron lasers coupled with energetic laser drivers. Journal of Synchrotron Radiation, 2022, 29, .	2.4	3
4	Electronic transport coefficients from density functional theory across the plasma plane. Physical Review E, 2022, 105, .	2.1	7
5	Gibbs-ensemble Monte Carlo simulation of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi mathvariant="normal">H</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mtext>âˆ’</mml:mtext><mml:mi mathvariant="normal">He</mml:mi></mml:math> mixtures. Physical Review E, 2021, 103, 013307.	2.1	5
6	Metallization of Shock-Compressed Liquid Ammonia. Physical Review Letters, 2021, 126, 025003.	7.8	21
7	Gibbs-ensemble Monte Carlo simulation of H2â€“H2O mixtures. Physical Chemistry Chemical Physics, 2021, 23, 12637-12643.	2.8	4
8	Demonstration of a laser-driven, narrow spectral bandwidth x-ray source for collective x-ray scattering experiments. Physics of Plasmas, 2021, 28, .	1.9	8
9	Ionic self-diffusion coefficient and shear viscosity of high-Z materials in the hot dense regime. Matter and Radiation at Extremes, 2021, 6, 026901.	3.9	4
10	Ultrafast multi-cycle terahertz measurements of the electrical conductivity in strongly excited solids. Nature Communications, 2021, 12, 1638.	12.8	20
11	Thermal evolution of Uranus and Neptune. Astronomy and Astrophysics, 2021, 650, A200.	5.1	13
12	Ionization and transport in partially ionized multicomponent plasmas: Application to atmospheres of hot Jupiters. Physical Review E, 2021, 103, 063203.	2.1	7
13	Observation of a highly conductive warm dense state of water with ultrafast pumpâ€“probe free-electron-laser measurements. Matter and Radiation at Extremes, 2021, 6, .	3.9	6
14	High-resolution inelastic x-ray scattering at the high energy density scientific instrument at the European X-Ray Free-Electron Laser. Review of Scientific Instruments, 2021, 92, 013101.	1.3	15
15	Virial expansion of the electrical conductivity of hydrogen plasmas. Physical Review E, 2021, 104, 045204.	2.1	6
16	Understanding dense hydrogen at planetary conditions. Nature Reviews Physics, 2020, 2, 562-574.	26.6	29
17	An approach for the measurement of the bulk temperature of single crystal diamond using an X-ray free electron laser. Scientific Reports, 2020, 10, 14564.	3.3	21
18	Sodium-potassium system at high pressure. Physical Review B, 2020, 101, .	3.2	6

#	Article	IF	Citations
19	Thermodynamics of the insulator-metal transition in dense liquid deuterium. Physical Review B, 2020, 101, .	3.2	6
20	High-energy-density-science capabilities at the Facility for Antiproton and Ion Research. Physics of Plasmas, 2020, 27, .	1.9	16
21	Metallization of dense fluid helium from <i>ab initio</i> simulations. Physical Review B, 2020, 102, .	3.2	10
22	Carbon ionization at gigabar pressures: An <i>ab initio</i> perspective on astrophysical high-density plasmas. Physical Review Research, 2020, 2, .	3.6	34
23	Laser-driven shock compression of â€œsynthetic planetary mixturesâ€•of water, ethanol, and ammonia. Scientific Reports, 2019, 9, 10155.	3.3	19
24	Transition to metallization in warm dense helium-hydrogen mixtures using stochastic density functional theory within the Kubo-Greenwood formalism. Physical Review B, 2019, 100, .	3.2	10
25	Ionization dynamics of dense matter generated by intense ultrashort Xâ€•ray pulses. Contributions To Plasma Physics, 2019, 59, e201800156.	1.1	3
26	Comment on â€œIsochoric, isobaric, and ultrafast conductivities of aluminum, lithium, and carbon in the warm dense matter regimeâ€• Physical Review E, 2019, 99, 047201.	2.1	6
27	Comment on â€œInsulator-metal transition in dense fluid deuteriumâ€• Science, 2019, 363, .	12.6	5
28	Ionization potential depression and Pauli blocking in degenerate plasmas at extreme densities. Physical Review E, 2019, 99, 033201.	2.1	31
29	Paramagnetic-to-Diamagnetic Transition in Dense Liquid Iron and Its Influence on Electronic Transport Properties. Physical Review Letters, 2019, 122, 086601.	7.8	17
30	The Effect of Clouds as an Additional Opacity Source on the Inferred Metallicity of Giant Exoplanets. Atmosphere, 2019, 10, 664.	2.3	11
31	High-pressure melting line of helium from <i>ab initio</i> calculations. Physical Review B, 2019, 100, .	3.2	10
32	Thermal evolution of Uranus and Neptune. Astronomy and Astrophysics, 2019, 632, A70.	5.1	27
33	Equation of state and optical properties of warm dense helium. Physics of Plasmas, 2018, 25, .	1.9	18
34	<i>AbÂInitio</i> Calculation of the Miscibility Diagram for Hydrogen-Helium Mixtures. Physical Review Letters, 2018, 120, 115703.	7.8	70
35	Observations of non-linear plasmon damping in dense plasmas. Physics of Plasmas, 2018, 25, .	1.9	29
36	Evaluation of exchange-correlation functionals with multiple-shock conductivity measurements in hydrogen and deuterium at the molecular-to-atomic transition. Physical Review B, 2018, 98, .	3.2	17

#	Article	IF	Citations
37	Determination of the electron-lattice coupling strength of copper with ultrafast MeV electron diffraction. Review of Scientific Instruments, 2018, 89, 10C108.	1.3	8
38	Using time-resolved penumbral imaging to measure low hot spot x-ray emission signals from capsule implosions at the National Ignition Facility. Review of Scientific Instruments, 2018, 89, 10G111.	1.3	5
39	Material Properties for the Interiors of Massive Giant Planets and Brown Dwarfs. Astronomical Journal, 2018, 156, 149.	4.7	18
40	High-pressure chemistry of hydrocarbons relevant to planetary interiors and inertial confinement fusion. Physics of Plasmas, 2018, 25, .	1.9	24
41	Heterogeneous to homogeneous melting transition visualized with ultrafast electron diffraction. Science, 2018, 360, 1451-1455.	12.6	133
42	Simulations of Hâ€“He mixtures using the van der Waals density functional. Journal of Plasma Physics, 2018, 84, .	2.1	4
43	A Review of Equation-of-State Models for Inertial Confinement Fusion Materials. High Energy Density Physics, 2018, 28, 7-24.	1.5	54
44	Average-atom model for two-temperature states and ionic transport properties of aluminum in the warm dense matter regime. High Energy Density Physics, 2017, 22, 21-26.	1.5	17
45	Density-functional calculations of transport properties in the nondegenerate limit and the role of electron-electron scattering. Physical Review E, 2017, 95, 033203.	2.1	52
46	Planetary Ices and the Linear Mixing Approximation. Astrophysical Journal, 2017, 848, 67.	4.5	54
47	Electronic transport in partially ionized water plasmas. Physics of Plasmas, 2017, 24, 092306.	1.9	24
48	<i>Ab initio</i>simulations of the dynamic ion structure factor of warm dense lithium. Physical Review B, 2017, 95, .	3.2	25
49	Warm Dense Matter Demonstrating Non-Drude Conductivity from Observations of Nonlinear Plasmon Damping. Physical Review Letters, 2017, 118, 225001.	7.8	68
50	<i>Ab initio</i>calculation of thermodynamic potentials and entropies for superionic water. Physical Review E, 2016, 93, 022140.	2.1	47
51	Uranus evolution models with simple thermal boundary layers. Icarus, 2016, 275, 107-116.	2.5	84
52	H/He demixing and the cooling behavior of Saturn. Icarus, 2016, 267, 323-333.	2.5	26
53	<i>Ab initio</i>calculation of the ion feature in x-ray Thomson scattering. Physical Review E, 2015, 92, 013103.	2.1	30
54	Conductivity of warm dense matter including electron-electron collisions. Physical Review E, 2015, 91, 043105.	2.1	70

#	Article	IF	Citations
55	Direct observation of an abrupt insulator-to-metal transition in dense liquid deuterium. Science, 2015, 348, 1455-1460.	12.6	241
56	Average-atom model combined with the hypernetted chain approximation applied to warm dense matter. Physical Review E, 2015, 91, 033114.	2.1	13
57	Superionic Phases of the 1:1 Waterâ€“Ammonia Mixture. Journal of Physical Chemistry A, 2015, 119, 10582-10588.	2.5	36
58	The PLATO 2.0 mission. Experimental Astronomy, 2014, 38, 249-330.	3.7	912
59	AB INITIO EQUATIONS OF STATE FOR HYDROGEN (H-REOS.3) AND HELIUM (He-REOS.3) AND THEIR IMPLICATIONS FOR THE INTERIOR OF BROWN DWARFS. Astrophysical Journal, Supplement Series, 2014, 215, 21.	7.7	121
60	Equilibration dynamics and conductivity of warm dense hydrogen. Physical Review E, 2014, 90, 013104.	2.1	22
61	Resolving Ultrafast Heating of Dense Cryogenic Hydrogen. Physical Review Letters, 2014, 112, 105002.	7.8	95
62	<i>Ab Initio</i>Simulations for the Ion-Ion Structure Factor of Warm Dense Aluminum. Physical Review Letters, 2014, 112, 145007.	7.8	63
63	The Influence of Dynamical Screening on the Transport Properties of Dense Plasmas. Contributions To Plasma Physics, 2013, 53, 639-652.	1.1	10
64	New indication for a dichotomy in the interior structure of Uranus and Neptune from the application of modified shape and rotation data. Planetary and Space Science, 2013, 77, 143-151.	1.7	157
65	Equation of state and phase diagram of ammonia at high pressures from <i>ab initio</i> simulations. Journal of Chemical Physics, 2013, 138, 234504.	3.0	39
66	Hypernetted Chain Calculations for Multiâ€Component and NonEquilibrium Plasmas. Contributions To Plasma Physics, 2013, 53, 276-284.	1.1	28
67	Lowâ€Density Equation of State for Water from a Chemical Model. Contributions To Plasma Physics, 2013, 53, 336-346.	1.1	9
68	JUPITER MODELS WITH IMPROVED AB INITIO HYDROGEN EQUATION OF STATE (H-REOS.2). Astrophysical Journal, 2012, 750, 52.	4.5	165
69	AB INITIO SIMULATIONS FOR MATERIAL PROPERTIES ALONG THE JUPITER ADIABAT. Astrophysical Journal, Supplement Series, 2012, 202, 5.	7.7	170
70	Probing the Interiors of the Ice Giants: Shock Compression of Water to 700 GPa and<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mn>3.8</mml:mn><mml:mtext>â€‰</mml:mtext><mml:mtext>â€‰</mml:mtext><mml:mi mathvariant="bold">g</mml:mi><mml:mo>/</mml:mo><mml:msup><mml:mi>cm</mml:mi><mml:mn>3</mml:mn></mml:msup></mm Physical Review Letters, 2012, 108, 091102.	7.8	130
71	Dynamic structure factor in warm dense beryllium. New Journal of Physics, 2012, 14, 055020.	2.9	52
72	Optical properties of water at high temperature. Physics of Plasmas, 2011, 18, .	1.9	20

#	Article	IF	Citations
73	Metallization in hydrogen-helium mixtures. Physical Review B, 2011, 84, .	3.2	78
74	Electronic transport coefficients from<i>ab initio</i>simulations and application to dense liquid hydrogen. Physical Review B, 2011, 83, .	3.2	148
75	THERMAL EVOLUTION AND STRUCTURE MODELS OF THE TRANSITING SUPER-EARTH GJ 1214b. Astrophysical Journal, 2011, 733, 2.	4.5	156
76	Laboratory planetary physics using intense heavy ion beams atÂtheÂFacility for Antiprotons and Ion Research at Darmstadt: theÂHEDgeHOB collaboration. Astrophysics and Space Science, 2011, 336, 61-65.	1.4	3
77	Ionization Equiibrium and Composition of a Dense Partially Ionized Metal Plasma. Contributions To Plasma Physics, 2011, 51, 391-394.	1.1	4
78	Transport Coefficients in Dense Plasmas Including Ionâ€Ion Structure Factor. Contributions To Plasma Physics, 2011, 51, 355-360.	1.1	7
79	The phase diagram of water and the magnetic fields of Uranus and Neptune. Icarus, 2011, 211, 798-803.	2.5	195
80	X-ray Thomson scattering for measuring dense beryllium plasma collisionality. Journal of Physics: Conference Series, 2010, 244, 032044.	0.4	4
81	Modeling giant planets and brown dwarfs. Proceedings of the International Astronomical Union, 2010, 6, 473-474.	0.0	1
82	Constraining planetary interiors with the Love number k2. Proceedings of the International Astronomical Union, 2010, 6, 482-484.	0.0	0
83	First-order liquid-liquid phase transition in dense hydrogen. Physical Review B, 2010, 82, .	3.2	121
84	Interior structure models of GJ436b. Astronomy and Astrophysics, 2010, 523, A26.	5.1	38
85	Ultrahigh compression of water using intense heavy ion beams: laboratory planetary physics. New Journal of Physics, 2010, 12, 073022.	2.9	57
86	â€˜â€¦ a metal conducts and a non-metal doesn'tâ€™. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2010, 368, 941-965.	3.4	42
87	Application of linear response theory to magnetotransport properties of dense plasmas. Physical Review E, 2010, 81, 036409.	2.1	7
88	Diffusion and electrical conductivity in water at ultrahigh pressures. Physical Review B, 2010, 82, .	3.2	73
89	Equation of state and phase diagram of water at ultrahigh pressures as in planetary interiors. Physical Review B, 2009, 79, .	3.2	212
90	X-ray Thomson scattering in high energy density plasmas. Reviews of Modern Physics, 2009, 81, 1625-1663.	45.6	612

#	Article	IF	Citations
91	X-Ray Thomson-Scattering Measurements of Density and Temperature in Shock-Compressed Beryllium. Physical Review Letters, 2009, 102, 115001.	7.8	147
92	Demixing of Hydrogen and Helium at Megabar Pressures. Physical Review Letters, 2009, 102, 115701.	7.8	121
93	Warm dense matter in giant planets and exoplanets. Physics of Particles and Nuclei, 2008, 39, 1122-1127.	0.7	19
94	Thermophysical properties of warm dense hydrogen using quantum molecular dynamics simulations. Physical Review B, 2008, 77, .	3.2	204
95	Ab Initio Equation of State Data for Hydrogen, Helium, and Water and the Internal Structure of Jupiter. Astrophysical Journal, 2008, 683, 1217-1228.	4.5	222
96	Electrical conductivity of noble gases at high pressures. Physical Review E, 2007, 76, 036405.	2.1	35
97	Hypernetted Chain Calculations for Two-Component Plasmas. Contributions To Plasma Physics, 2007, 47, 324-330.	1.1	27
98	Quantum Molecular Dynamics Simulations for the Nonmetal-to-Metal Transition in Fluid Helium. Physical Review Letters, 2007, 98, 190602.	7.8	63
99	Thomson scattering from near-solid density plasmas using soft X-ray free electron lasers. High Energy Density Physics, 2007, 3, 120-130.	1.5	61
100	Molecular dynamic simulation of the microscopic properties and electrical conductivity of a dense semiclassical plasma. Journal of Plasma Physics, 2006, 72, 1031.	2.1	5
101	Electrical Conductivity of Noble Gases at High Pressures. Contributions To Plasma Physics, 2005, 45, 61-69.	1.1	39
102	COMPTRA04 - a Program Package to Calculate Composition and Transport Coefficients in Dense Plasmas. Contributions To Plasma Physics, 2005, 45, 73-88.	1.1	76
103	Interpolation formula for the electrical conductivity of nonideal plasmas. Contributions To Plasma Physics, 2003, 43, 33-38.	1.1	32
104	Transport coefficients for dense metal plasmas. Physical Review E, 2000, 62, 7191-7200.	2.1	96
105	Electrical conductivity of dense metal plasmas. Physical Review E, 1999, 59, 1073-1081.	2.1	128
106	Physical properties of dense, low-temperature plasmas. Physics Reports, 1997, 282, 35-157.	25.6	166
107	Nonlinear electrical conductivity in hydrogen plasma. Physics of Fluids B, 1993, 5, 55-62.	1.7	3
108	Electrical conductivity of nondegenerate, fully ionized plasmas. Physical Review A, 1989, 39, 907-910.	2.5	52

#	Article	IF	Citations
109	Transport Coefficients for Nonideal Hydrogen and Cesium Plasmas. Contributions To Plasma Physics, 1989, 29, 395-412.	1.1	48
110	Ionization Equilibrium in Nonideal Alkali and Noble Gas Plasmas. Contributions To Plasma Physics, 1988, 28, 41-55.	1.1	24
111	X-ray thomson scattering in dense plasmas. , 0, , .		0
112	Nonmetalâ€toâ€metal transition in dense fluid helium. Contributions To Plasma Physics, 0, , e202100105.	1.1	2