

CITATION REPORT

List of articles citing

Metallic Hydrogen: A High-Temperature Superconductor?

DOI: 10.1103/physrevlett.21.1748

Physical Review Letters, 1968, 21, 1748-1749.

Source: <https://exaly.com/paper-pdf/9492665/citation-report.pdf>

Version: 2024-04-26

This report has been generated based on the citations recorded by exaly.com for the above article. For the latest version of this publication list, visit the link given above.

The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

| # | Paper | IF | Citations |
|-----|---|-----|-----------|
| 945 | SUPERFLUIDITY AND SUPERCONDUCTIVITY IN THE UNIVERSE. 1969 , 12, 241-251 | | 13 |
| 944 | Pseudopotential Calculation of the Mass Enhancement and Superconducting Transition Temperature of Simple Metals. 1969 , 187, 525-538 | | 215 |
| 943 | Superfluidity and superconductivity in the universe. 1969 , 1, 3-24 | | 60 |
| 942 | Metallic hydrogen. 1969 , 7, 875-876 | | 6 |
| 941 | Superconductivity of Hydrides and Deuterides of Thorium. <i>Physical Review Letters</i> , 1970 , 25, 741-743 | 7.4 | 137 |
| 940 | Zenomagnetic core-mantle coupling and the rotation of Jupiter's Great Red Spot. 1971 , 4, 237-242 | | 3 |
| 939 | Superfluidity and superconductivity in astrophysics. 1971 , 55, 207-212 | | 4 |
| 938 | Metallic hydrogen II high-temperature superconductivity. 1971 , 55, 702-710 | | 30 |
| 937 | Quantum Crystal Effects in Solid Hydrogen at Zero Temperature. 1971 , 4, 2638-2644 | | 8 |
| 936 | Lithium Dihydrogen Fluoride An Approach to Metallic Hydrogen. <i>Physical Review Letters</i> , 1971 , 26, 546-548 | 7.4 | 34 |
| 935 | Equation of State for Solid Hydrogen. 1972 , 5, 4170-4179 | | 43 |
| 934 | Linear Symmetric H4. 1972 , 57, 217-220 | | 62 |
| 933 | Correlation of theory and experiment for high-pressure hydrogen. 1972 , 6, 60-64 | | 15 |
| 932 | Statistical Exchange-Correlation in the Self-Consistent Field. 1972 , 6, 1-92 | | 909 |
| 931 | Structure of Jupiter and Saturn. 1973 , 14, 599-662 | | 58 |
| 930 | Superconducting critical field in cold magnetic white dwarfs and in neutron stars. 1973 , 25, 133-148 | | |
| 929 | Superconductivity in the palladium-hydrogen system. 1973 , 59, 329-334 | | 41 |

| | | | |
|-----|--|-----|-----|
| 928 | Superconductivity in the palladium-hydrogen system. 1973 , 7, 545-549 | | 16 |
| 927 | Electron-phonon interactions and superconductivity. 1973 , 181, 1209-14 | | 14 |
| 926 | Metallic hydrogen: simulating jupiter in the laboratory. 1973 , 180, 398-9 | | 4 |
| 925 | Electronic-Structure Studies of Solids. II. "Exact" Hartree-Fock Calculations for Cubic Atomic-Hydrogen Crystals. 1973 , 7, 2850-2866 | | 61 |
| 924 | Electron-phonon interactions and superconductivity. 1973 , 26, 41-47 | | 5 |
| 923 | On the Equation of State of Hydrogen and its Use in Models of Major Planets. 1974 , 65, 329-335 | | |
| 922 | A Priori Prediction of the Cohesive Energy of One-Dimensional Metallic Hydrogen. <i>Physical Review Letters</i> , 1974 , 32, 933-936 | 7.4 | 22 |
| 921 | Low-temperature thermostatics of face-centered-cubic metallic hydrogen. 1974 , 9, 5025-5038 | | 49 |
| 920 | A theoretical analysis of the shock compression experiments of the liquid hydrogen isotopes and a prediction of their metallic transition. 1974 , 60, 3634-3644 | | 68 |
| 919 | Planetary magnetism. 1974 , 22, 403-415 | | 26 |
| 918 | Mode-locked maser theory of pulsars. 1974 , 30, 43-55 | | 5 |
| 917 | Gas-gas equilibrium: High pressure limits. 1974 , 52, 92-97 | | 24 |
| 916 | High pressure in coordination chemistry. 1974 , 12, 185-220 | | 20 |
| 915 | Experiments on hydrogen at megabar pressures; Metallic hydrogen. 1974 , 111-118 | | 1 |
| 914 | Band structure of solid o-H ₂ with the molecular tight-binding and OPW method. 1975 , 67, 345-354 | | 12 |
| 913 | Ion implantation a powerful technique for the production of metastable superconducting alloys. 1975 , 7, 239-248 | | 35 |
| 912 | Alternative to the geomagnetic self-reversing dynamo. 1975 , 253, 707-708 | | 6 |
| 911 | Exact-Exchange Crystal Hartree-Fock Calculations of Molecular and Metallic Hydrogen and Their Transitions. <i>Physical Review Letters</i> , 1975 , 34, 812-814 | 7.4 | 104 |

| | | | |
|-----|---|-----|------|
| 910 | Transition temperature of strong-coupled superconductors reanalyzed. 1975 , 12, 905-922 | | 2163 |
| 909 | The Electron-Phonon Interaction in Normal Metals. 1976 , 14, 63-78 | | 154 |
| 908 | Lattice gas aspects of metal-hydrogen system. 1976 , 49, 1-12 | | 32 |
| 907 | Phase relations and structures of solids at high pressures. 1976 , 11, 1-151 | | 168 |
| 906 | Self-consistent phonon calculations and equations of state of solid hydrogen and deuterium. 1976 , 14, 814-822 | | 10 |
| 905 | Einstein-Kanzaki model of static and dynamic lattice relaxation: Application to vacancies in metallic hydrogen. 1977 , 16, 5326-5340 | | 9 |
| 904 | NMR study of thorium hydride (Th ₄ H ₁₅). 1977 , 15, 2449-2457 | | 23 |
| 903 | Structure and Stability of Metallic Hydrogen. <i>Physical Review Letters</i> , 1977 , 39, 1340-1342 | 7-4 | 19 |
| 902 | Electron-phonon interaction and superconductivity in metallic hydrogen. 1977 , 16, 307-310 | | 44 |
| 901 | Studies of hydride formation and superconductivity in hydrides of alloys Th-M (M = La, Y, Ce, Zr and Bi). 1977 , 52, 129-135 | | 7 |
| 900 | Superconductivity in metal-hydrogen systems. 1978 , 243-272 | | 24 |
| 899 | Electronic band structure of metallic hydrogen using a μ -function basis. 1978 , 18, 3810-3815 | | 5 |
| 898 | Repulsive intermolecular potential between two H ₂ molecules. 1979 , 71, 5362 | | 62 |
| 897 | Critical temperature of superconducting metallic hydrogen. 1980 , 80, 193-194 | | 3 |
| 896 | Simulation studies of a model of high-density metallic hydrogen. 1980 , 21, 2641-2646 | | 31 |
| 895 | Two-component Fermi-liquid theory: Equilibrium properties of liquid metallic hydrogen. 1981 , 23, 6399-6407 | | 40 |
| 894 | Structure and screening in molecular and metallic hydrogen at high pressure. 1982 , 25, 2532-2544 | | 11 |
| 893 | Certain Problems of Polymorphism (I). 1982 , 17, 661-691 | | 14 |

| | | |
|-----|---|--------|
| 892 | Electromagnetic collapse. Equilibrium of a dense pinch. 1982 , 92, 83-133 | 7 |
| 891 | Physics of condensed matter in the planets. 1983 , 74, 129-145 | |
| 890 | Some consequences for solids of the non-local topology of valence orbital interactions. 1983 , 101, 452-458 | 1 |
| 889 | Diamond anvil cell and high-pressure physical investigations. 1983 , 55, 65-108 | 1049 |
| 888 | Molecular-orbital basis for superconductivity in high- and low-dimensional metals. 1983 , 5, 151-204 | 28 |
| 887 | Approaches for Reducing the Insulator-Metal Transition Pressure in Hydrogen. <i>Physical Review Letters</i> , 1983 , 50, 1305-1308 | 7-4 42 |
| 886 | Critical fields of liquid superconducting metallic hydrogen. 1983 , 27, 5852-5855 | 11 |
| 885 | Structural properties, superconductivity, and magnetism of metallic hydrogen. 1984 , 30, 5076-5083 | 63 |
| 884 | Matter under extreme conditions of temperature and pressure. 1985 , 48, 1-52 | 100 |
| 883 | New materials at high pressure. 1986 , 30, 393-408 | 3 |
| 882 | Extension of the Lang-Kohn work-function calculation to the density of metallic hydrogen. 1986 , 33, 7294-7296 | 6 |
| 881 | Theory of superconductivity based on direct electron-phonon coupling. I. 1986 , 33, 1585-1594 | 4 |
| 880 | Electronic structure and electron-phonon coupling in LiBeH ₃ . 1987 , 17, L201-L208 | 22 |
| 879 | Binary phase diagrams of H ₂ -He mixtures at high temperature and high pressure. 1987 , 36, 3723-3730 | 27 |
| 878 | Ground state of solid hydrogen at high pressures. 1987 , 36, 2092-2106 | 229 |
| 877 | Plasmons and high-temperature superconductivity in alloys of copper oxides. 1987 , 35, 8869-8872 | 180 |
| 876 | Crystal structure of lithium beryllium hydride. 1987 , 35, 411-414 | 73 |
| 875 | Electronic structure of LiBeH ₃ . 1988 , 38, 2380-2387 | 23 |

| | | | |
|-----|---|-----|-----|
| 874 | Possibility of LiBeH ₃ being metallic. 1988 , 38, 3576-3579 | | 24 |
| 873 | Phase transition in solid molecular hydrogen at ultrahigh pressures. <i>Physical Review Letters</i> , 1988 , 61, 857-860 | 7-4 | 203 |
| 872 | Electronic and structural properties of LiBeH ₃ . 1988 , 38, 12776-12779 | | 21 |
| 871 | Synchrotron X-ray Diffraction Measurements of Single-Crystal Hydrogen to 26.5 Gigapascals. 1988 , 239, 1131-4 | | 138 |
| 870 | Theory of high-pressure phases of hydrogen. <i>Physical Review Letters</i> , 1989 , 62, 1150-1153 | 7-4 | 137 |
| 869 | Comment on "Crystal structure of lithium beryllium hydride". 1989 , 39, 12329-12330 | | 11 |
| 868 | Metallic ferromagnetism in a single-band model. II. Finite-temperature magnetic properties. 1989 , 40, 9061-9069 | | 55 |
| 867 | Ferromagnetism in metallic hydrogen. 1989 , 141, 191-195 | | 15 |
| 866 | Hydrogen and Helium under high pressure: A case for a classical theory of dense matter. 1989 , 45, 291-298 | | 3 |
| 865 | First-principles prediction of high-temperature superconductivity in metallic hydrogen. 1989 , 340, 369-371 | | 66 |
| 864 | Electronic structure of lithium beryllium hydride. 1989 , 39, 7949-7954 | | 27 |
| 863 | Theoretical Study of High Pressure Metallic Hydrogen. 1990 , 193, 15 | | |
| 862 | Mono- and dilayer analogues of crystalline atomic hydrogen. 1990 , 38, 873-879 | | 2 |
| 861 | Superconductivity and hydromagnetism. 1990 , 163, 291-298 | | 20 |
| 860 | Pairing instabilities in dense hydrogen. 1990 , 41, 10963-10971 | | 84 |
| 859 | High-pressure chemistry of hydrogen in metals: in situ study of iron hydride. 1991 , 253, 421-4 | | 158 |
| 858 | On the possibility of nonequilibrium high-temperature superconductivity in PdH and PdD. 1991 , 13, 1449-1451 | | 1 |
| 857 | Theoretical properties of a 3-layer film of LiBeH ₃ . 1991 , 40, 629-639 | | 5 |

| | | | |
|-----|--|-----|-----|
| 856 | Prediction of high-temperature superconductivity in hexagonal and rhombohedral phases of metallic hydrogen. 1991 , 43, 5269-5275 | | 15 |
| 855 | Theoretical study of atomic phases of metallic hydrogen. 1991 , 44, 11563-11568 | | 19 |
| 854 | Materials Science of the Earth – Deep Interior. 1992 , 17, 30-37 | | 7 |
| 853 | Structure, energetics, and molecular- to atomic-ordering transitions in hydrogen thin films. 1992 , 45, 8610-8622 | | 4 |
| 852 | Vibrational Raman spectra of hydrogen and deuterium mixtures at high pressures. 1992 , 45, 6429-6435 | | 21 |
| 851 | Introduction. 1992 , 1-13 | | 1 |
| 850 | Near-equilibrium ordering of the crystalline phases of atomic hydrogen. 1992 , 42, 1037-1045 | | 2 |
| 849 | Metallischer Wasserstoff im Wandel der Zeit. 1992 , 26, 285-291 | | 1 |
| 848 | Origin of Superelectrons. 1993 , 175, 421-432 | | 6 |
| 847 | Crystal structure of atomic hydrogen. <i>Physical Review Letters</i> , 1993 , 70, 1952-1955 | 7.4 | 112 |
| 846 | Orientalional order in dense molecular hydrogen: A first-principles path-integral Monte Carlo calculation. 1994 , 49, 11822-11832 | | 21 |
| 845 | The pressure-induced superconductivity of iodine. 1994 , 7, 921-924 | | 41 |
| 844 | Observation of pressure-induced superconductivity of iodine. 1994 , 194-196, 1959-1960 | | 5 |
| 843 | Dynamic compression of hydrogen for probing the molecular-atomic phase transition. 1994 , 1, 1962-1970 | | 7 |
| 842 | Ultrahigh-pressure transitions in solid hydrogen. 1994 , 66, 671-692 | | 527 |
| 841 | Electronic states and charge-transfer mechanisms in solid molecular hydrogen. 1995 , 3, 368-376 | | 1 |
| 840 | Physics of solids under strong compression. 1996 , 59, 29-90 | | 219 |
| 839 | Hydrogen under extreme conditions. 1996 , 1, 846-852 | | 2 |

| | | |
|-----|---|---------|
| 838 | Metallization and electrical conductivity of hydrogen in Jupiter. 1996 , 273, 936-8 | 91 |
| 837 | Metallization of fluid molecular hydrogen at 140 GPa (1.4 Mbar). <i>Physical Review Letters</i> , 1996 , 76, 1860-1863 | 650 |
| 836 | Shocking states of matter. 1996 , 380, 671-672 | 8 |
| 835 | High-pressure Raman spectroscopy of solid oxygen. 1996 , 54, R15602-R15605 | 55 |
| 834 | Rotational ordering in solid deuterium and hydrogen: A path integral Monte Carlo study. 1997 , 55, 12253-12264 | 44 |
| 833 | High Temperature Superconductivity in Metallic Hydrogen: Electron-Electron Enhancements. <i>Physical Review Letters</i> , 1997 , 78, 118-121 | 7-4 154 |
| 832 | Correlations between normal-state properties and superconductivity. 1997 , 55, 9007-9024 | 43 |
| 831 | Progress in the Search for Metallic Hydrogen: 342 GPa. 1997 , 499, 341 | |
| 830 | Theory of dense hydrogen: Proton pairing. 1996 , 1-22 | |
| 829 | Physical properties of dense, low-temperature plasmas. 1997 , 282, 35-157 | 155 |
| 828 | Irréversibilité magnétique dans un hydrure métallique : Li ₂ BeH ₄ . 1997 , 324, 641-651 | 2 |
| 827 | Suppression of the scattering of conduction electrons by lattice phonons in palladium in the presence of small hydrogen (deuterium) inclusions. 1997 , 39, 1891-1894 | 1 |
| 826 | Metallic Hydrogen at High Pressures and Temperatures in Jupiter. 1997 , 3, 1921-1924 | 7 |
| 825 | Metallization of fluid hydrogen. 1998 , 356, 119-138 | 44 |
| 824 | Solid hydrogen at 342 GPa: no evidence for an alkali metal. 1998 , 393, 46-49 | 208 |
| 823 | Dense Hydrogen and Disproportionation. 1998 , 138, 369-371 | 1 |
| 822 | Band structure study on LiBeH ₃ . 1998 , 68, 415-419 | 7 |
| 821 | The use of high pressure in basic and materials science. 1998 , 59, 553-568 | 47 |

| | | |
|-----|--|----------|
| 820 | Creation of metallic hydrogen in imploding cylindrical targets with intense heavy ion beams to be produced at the GSI Darmstadt SIS Facility. 1998 , 249, 489-494 | 9 |
| 819 | Hydrogen at megabar pressures and the importance of ortho-para concentration. 1998 , 10, 11169-11177 | 4 |
| 818 | Numerical simulations and theoretical analysis of proposed heavy-ion-matter experiments at the GSI Darmstadt accelerator facility. 1998 , 5, 4426-4455 | 33 |
| 817 | Hydrogen at High Pressures and Temperatures: Implications for Jupiter. 1998 , 357-364 | 1 |
| 816 | Electrical conductivity of nonideal hydrogen plasma at megabar dynamic pressures. 1999 , 69, 926-931 | 43 |
| 815 | Metastable solid metallic hydrogen. 1999 , 79, 655-661 | 15 |
| 814 | Minimum metallic conductivity of fluid hydrogen at 140 GPa (1.4 Mbar). 1999 , 59, 3434-3449 | 212 |
| 813 | Localization of acoustic vibrational modes in a chain-type lattice. 2000 , 90, 308-318 | 5 |
| 812 | Electronic and magnetic studies of materials to megabar pressures. 2000 , 128, 323-343 | 13 |
| 811 | The use of high pressure in basic, materials, and life sciences. 2000 , 128, 3-27 | 9 |
| 810 | Metallization of hydrogen using heavy-ion-beam implosion of multilayered cylindrical targets. 2001 , 63, 016402 | 92 |
| 809 | Review of the superconducting properties of MgB ₂ . 2001 , 14, R115-R146 | 953 |
| 808 | Superconductivity in boron. 2001 , 293, 272-4 | 266 |
| 807 | Lattice stability and superconductivity of the metallic hydrogen at high pressure. 2001 , 119, 569-572 | 53 |
| 806 | Inelastic x-ray scattering at ultrahigh pressures. 2001 , 13, 7847-7858 | 31 |
| 805 | Structural phase transition at high temperatures in solid molecular hydrogen and deuterium. 2001 , 64, | 8 |
| 804 | Superconductivity of metallic boron in MgB ₂ . <i>Physical Review Letters</i> , 2001 , 86, 4656-9 | 7-4 1037 |
| 803 | Magnetic properties of LiBeH ₃ and Li ₂ BeH ₄ . 2002 , 65, | 5 |

| | | |
|-----|---|---------|
| 802 | BCS and generalized BCS superconductivity in relativistic quantum field theory. II. Numerical calculations. 2002 , 66, | 12 |
| 801 | Improved techniques for measurement of superconductivity in diamond anvil cells by magnetic susceptibility. 2002 , 73, 371-377 | 42 |
| 800 | Hydrogen in Nanostructured, Carbon-Related, and Metallic Materials. 2002 , 27, 705-711 | 49 |
| 799 | chapter 3 Magnetic and Superconducting Properties of Rare Earth Borocarbides of the Type RNi ₂ B ₂ C. 2002 , 199-305 | 4 |
| 798 | Superconductivity. Putting the squeeze on lithium. 2002 , 419, 569, 571-2 | 43 |
| 797 | Pressure-produced ionization of nonideal plasma in a megabar range of dynamic pressures. 2003 , 97, 259-278 | 133 |
| 796 | Solids, Static High-Pressure Effects in. 2003 , | 1 |
| 795 | Structural stability of BeH ₂ at high pressures. 2004 , 84, 34-36 | 47 |
| 794 | Bridgman's high-pressure atomic destructibility and its growing legacy of ordered states. 2004 , 16, S945-S952 | 28 |
| 793 | A quantum fluid of metallic hydrogen suggested by first-principles calculations. 2004 , 431, 669-72 | 248 |
| 792 | Hydrogen dominant metallic alloys: high temperature superconductors?. <i>Physical Review Letters</i> , 2004 , 92, 187002 | 7-4 707 |
| 791 | Electron-forbidden energy gap of hydrogen in a wide pressure interval. 2005 , 100, 14-21 | 0 |
| 790 | Electron transport, penetration depth, and the upper critical magnetic field in ZrB ₁₂ and MgB ₂ . 2005 , 101, 98-106 | 8 |
| 789 | Pressure Ionization and Transitions in Dense Hydrogen. 2005 , 45, 160-167 | 15 |
| 788 | Metallic Superfluids. 2005 , 139, 711-726 | 29 |
| 787 | Detection of Superconductivity in a High-Pressure Chamber with Diamond Anvils by Mutual Induction Method with Laser-Modulated Sample Temperature. 2005 , 48, 550-555 | 2 |
| 786 | Assembling the puzzle of superconducting elements: a review. 2005 , 18, R1-R8 | 114 |
| 785 | Shock compression of nonideal plasmas at megabars. 2005 , 47, A65-A72 | |

| | | | |
|-----|--|-----|-----|
| 784 | High Pressure Effects on Superconductivity. 2005 , 459-497 | | 19 |
| 783 | Ionization potential and nature of charge carriers of fluid hydrogen in wide pressure interval. | | 1 |
| 782 | Electronic Structure. 2005 , 401-437 | | |
| 781 | Two-gap superconductivity in ZrB ₁₂ : Temperature dependence of critical magnetic fields in single crystals. 2006 , 73, | | 53 |
| 780 | Linear response study of strong electron-phonon coupling in yttrium under pressure. 2006 , 74, | | 33 |
| 779 | Structures and potential superconductivity in at high pressure: en route to "metallic hydrogen". <i>Physical Review Letters</i> , 2006 , 96, 017006 | 7-4 | 174 |
| 778 | Superconductivity in the alkali metals. 2006 , 26, 145-163 | | 33 |
| 777 | High Pressure Synthesis of Solids. 2006 , | | |
| 776 | Pressure induced metallization of Germane. 2006 , 67, 2095-2099 | | 55 |
| 775 | Dynamic compression of materials: metallization of fluid hydrogen at high pressures. 2006 , 69, 1479-1580 | | 166 |
| 774 | Magnetic characterization of a hydrogen phase trapped inside deep dislocation cores in a hydrogen-cycled PdH _x (x ≈ 0.5 - 1.0) single crystal. 2006 , 103, 385-397 | | 4 |
| 773 | Optical properties of methane to 288GPa at 300K. 2006 , 67, 2603-2608 | | 33 |
| 772 | High pressure studies on silane to 210 GPa at 300 K: optical evidence of an insulator-semiconductor transition. 2006 , 18, 8573-80 | | 19 |
| 771 | No evidence of metallic methane at high pressure. 2006 , 26, 369-375 | | 18 |
| 770 | PRESSURE DISSOCIATION AND THE MELTING CURVE OF HYDROGEN AT VERY HIGH DENSITY. 2006 , 20, 1789-1793 | | |
| 769 | Strong electron-phonon coupling in the rare-earth carbide superconductor La ₂ C ₃ . 2007 , 76, | | 34 |
| 768 | Coherent anti-stokes Raman spectroscopy of highly compressed solid deuterium at 300 K: evidence for a new phase and implications for the band gap. <i>Physical Review Letters</i> , 2007 , 98, 235503 | 7-4 | 22 |
| 767 | Ab initio prediction of superconductivity in molecular metallic hydrogen under high pressure. 2007 , 141, 610-614 | | 55 |

| | | | |
|-----|---|-----|-----|
| 766 | First-principles calculation on phase stability and metallization in GeH ₄ under pressure. 2007 , 143, 353-357 | | 27 |
| 765 | Superconductivity in Lithium Under Pressure. 2007 , 147, 549-557 | | 6 |
| 764 | Design for a Room-Temperature Superconductor. 2007 , 19, 291-297 | | 24 |
| 763 | The Influence of Vitaly Ginzburg on a Young Scientist. 2007 , 19, 453-457 | | 1 |
| 762 | Fluctuation and higher temperature superconductivity in lighter element systems. 2008 , 468, 115-125 | | 2 |
| 761 | The next breakthrough in phonon-mediated superconductivity. 2008 , 468, 126-135 | | 31 |
| 760 | Energy spectrum of one-particle excitations in liquid dielectrics under high pressures and temperatures. 2008 , 106, 910-917 | | 3 |
| 759 | Material Witness: Renewing old promises. 2008 , 7, 615 | | |
| 758 | Melting line of hydrogen at high pressures. <i>Physical Review Letters</i> , 2008 , 100, 155701 | 7.4 | 102 |
| 757 | Tetrahedral clustering in molten lithium under pressure. <i>Physical Review Letters</i> , 2008 , 101, 075703 | 7.4 | 74 |
| 756 | First-principles investigations of the MMgH ₃ (M=Li, Na, K, Rb, Cs) series. 2008 , 450, 327-337 | | 45 |
| 755 | Ab initio description of high-temperature superconductivity in dense molecular hydrogen. <i>Physical Review Letters</i> , 2008 , 100, 257001 | 7.4 | 167 |
| 754 | Recent studies in superconductivity at extreme pressures. 2008 , 121, 052006 | | 9 |
| 753 | Superconductivity in hydrogen dominant materials: silane. 2008 , 319, 1506-9 | | 302 |
| 752 | Superconducting high pressure phase of germane. <i>Physical Review Letters</i> , 2008 , 101, 107002 | 7.4 | 204 |
| 751 | Properties of Hydrogen. 2008 , 71-147 | | 3 |
| 750 | Pressure-induced metallization of silane. 2008 , 105, 20-3 | | 145 |
| 749 | The possibility for superconductor fusion in metallic hydrogen. 2008 , 112, 042081 | | 0 |

| | | | |
|-----|--|-----|-----|
| 748 | Significant reduction of the internuclear potential in superconductive solid metallic hydrogen. 2008 , 20, 075231 | | 2 |
| 747 | Rare-Earth Nickel Borocarbides. 2008 , 38, 175-336 | | 8 |
| 746 | Pressure-induced hydrogen-dominant metallic state in aluminum hydride. <i>Physical Review Letters</i> , 2008 , 100, 045504 | 7.4 | 111 |
| 745 | Using molecular fragments to estimate electron-phonon coupling and possible superconductivity in covalent materials. 2008 , 78, | | 11 |
| 744 | Studies on silane to 70 GPa. 2008 , 121, 042019 | | 4 |
| 743 | Studies of high-energy density states using isochoric heating of matter by intense heavy ion beams: the HEDgeHOB Collaboration. 2008 , T132, 014023 | | 2 |
| 742 | A Simple System to Measure Superconducting Transition Temperature at High Pressure. 2009 , 26, 026201 | | 4 |
| 741 | Multiband superconductivity in Pb, H under pressure and CaBeSi from ab initio calculations. 2009 , 21, 164209 | | 9 |
| 740 | Mean Field Superconductivity Approach in Two Dimensions. 2009 , 22, 439-444 | | 9 |
| 739 | Equation of state of molecular hydrogen at high pressure. 2009 , 10, 297-303 | | 8 |
| 738 | The superconducting state in metallic hydrogen under pressure at 2000 GPa. 2009 , 149, 2053-2057 | | 49 |
| 737 | BCS theory of superconductivity: it is time to question its validity. 2009 , 80, 035702 | | 45 |
| 736 | Novel structures and superconductivity of silane under pressure. <i>Physical Review Letters</i> , 2009 , 102, 087005 | | 137 |
| 735 | The role of Coulomb interaction in the superconducting properties of CaC6 and H under pressure. 2009 , 22, 034006 | | 29 |
| 734 | Dielectric function analysis of superstoichiometric samarium dihydride films. 2009 , 105, 083512 | | 0 |
| 733 | FUELS [HYDROGEN STORAGE Hydrides. 2009 , 440-458 | | 2 |
| 732 | Metallization of Boron by hydrogen doping. 2009 , 176, 012005 | | 2 |
| 731 | Pathways to metallic hydrogen. 2009 , 35, 318-325 | | 7 |

| | | |
|-----|---|-----|
| 730 | Generation of New High-Pressure Conditions and Approach to Material Science: toward Exploration of Unknown High-Pressure Materials. 2009 , 37, 48-51 | 1 |
| 729 | Giant anharmonicity suppresses superconductivity in AlH ₃ under pressure. 2010 , 82, | 44 |
| 728 | Superconductivity in Hydrogen-rich Material: GeH ₄ . 2010 , 23, 717-719 | 22 |
| 727 | Pressure-induced superconductivity in the fcc phase of lithium: Strong-coupling approach. 2010 , 405, 4897-4902 | 35 |
| 726 | Möglichkeiten der Darstellung von metallischem Wasserstoff. 2010 , 13, 281-287 | 0 |
| 725 | Pressure-induced bonding and compound formation in xenon-hydrogen solids. 2010 , 2, 50-3 | 116 |
| 724 | Non-Adiabatic Effects of Superconductor Silane under High Pressure. 2010 , 27, 087402 | 3 |
| 723 | Electronic, Vibrational, and Superconducting Properties of High-Pressure Metallic SiH ₄ : ab initio Calculations. 2010 , 27, 017401 | 8 |
| 722 | Structural transitions of solid germane under pressure. 2010 , 90, 66006 | 22 |
| 721 | Silane plus molecular hydrogen as a possible pathway to metallic hydrogen. 2010 , 107, 20893-8 | 37 |
| 720 | Electron-phonon interaction and superconductivity in metallic molecular hydrogen. I. Electronic and dynamical properties under pressure. 2010 , 81, | 39 |
| 719 | A note on the metallization of compressed liquid hydrogen. 2010 , 132, 134503 | 19 |
| 718 | Structure dependence of metallization density in solid atomic hydrogen using dynamical mean field theory. 2010 , 82, | 4 |
| 717 | High Pressure and Superconductivity: Intercalated Graphite C ₆ as a Model System. 2010 , 407-418 | |
| 716 | Chemical Trend of Pressure-Induced Metallization in Alkaline Earth Hydrides. 2010 , 114, 14614-14617 | 17 |
| 715 | Pressure-induced behavior of the hydrogen-dominant compound SiH ₄ (H ₂) ₂ from first-principles calculations. 2010 , 82, | 13 |
| 714 | High-pressure crystal structures and superconductivity of Stannane (SnH ₄). 2010 , 107, 1317-20 | 153 |
| 713 | Superconducting high-pressure phases of disilane. 2010 , 107, 9969-73 | 91 |

| | | | | |
|-----|--|-----|--|-----|
| 712 | Percy W. Bridgman's second century. 2010 , 30, 581-619 | | | 37 |
| 711 | Metallic hydrogen: The most powerful rocket fuel yet to exist. 2010 , 215, 012194 | | | 13 |
| 710 | Electron Structure, Transport, and Superconducting Properties of ZrB ₁₂ , ZrB ₂ , YB ₆ and MgB ₂ . 2010 , 237-260 | | | |
| 709 | Compressing the most hydrogen-rich inorganic ion. 2010 , 132, 748-55 | | | 22 |
| 708 | Pressure-stabilized sodium polyhydrides: NaH(n) (n>1). <i>Physical Review Letters</i> , 2011 , 106, 237002 | 7.4 | | 80 |
| 707 | Metallization of solid hydrogen: the challenge and possible solutions. 2011 , 13, 16999-7006 | | | 22 |
| 706 | Rhodium dihydride (RhH ₂) with high volumetric hydrogen density. 2011 , 108, 18618-21 | | | 72 |
| 705 | High-T _c Superconductivity. 2011 , 81-147 | | | 2 |
| 704 | Bonding changes in hot fluid hydrogen at megabar pressures. 2011 , 108, 6014-9 | | | 47 |
| 703 | Light-induced phase transition in AlD ₃ at high pressure. 2011 , 84, | | | 3 |
| 702 | High-pressure physics: Testing one's metal. 2011 , 10, 904-5 | | | 7 |
| 701 | High-temperature superconductivity in atomic metallic hydrogen. 2011 , 84, | | | 117 |
| 700 | Ground-state structures of atomic metallic hydrogen. <i>Physical Review Letters</i> , 2011 , 106, 165302 | 7.4 | | 117 |
| 699 | Conductive dense hydrogen. 2011 , 10, 927-31 | | | 264 |
| 698 | Isentropic Compression of Substances Using Ultra-High Magnetic Field: Zero Isotherms of Protium and Deuterium in Pressure Range up to ~5 Mbar. 2011 , 51, 339-348 | | | 10 |
| 697 | Properties of the superconducting state in molecular metallic hydrogen under pressure at 347 GPa. 2011 , 406, 2235-2239 | | | 20 |
| 696 | Specific heat and thermodynamic critical field for the molecular metallic hydrogen. 2011 , 406, 3493-3497 | | | 21 |
| 695 | Influence of ordered structures on electrical conductivity and XANES from warm to hot dense matter. 2011 , 7, 84-90 | | | 8 |

- 694 High-pressured solid atomic hydrogen with photodissociation. **2011**, 7, 288-293
- 693 Ab initio studies of superconductivity in monatomic metallic hydrogen under high pressure. **2011**, 375, 1264-1268 21
- 692 Highly repulsive interaction in novel inclusion D₂-N₂ compound at high pressure: Raman and x-ray evidence. **2011**, 134, 044519 19
- 691 Vortex states and the phase diagram of a multiple-component Ginzburg-Landau theory with competing repulsive and attractive vortex interactions. **2011**, 84, 30
- 690 Metallic and superconducting gallane under high pressure. **2011**, 84, 58
- 689 Laser-shock compression and Hugoniot measurements of liquid hydrogen to 55 GPa. **2011**, 83, 32
- 688 High Pressure Synthesis of Solids. **2011**,
- 687 Superconductivity in layered binary silicides: A density functional theory study. **2011**, 84, 18
- 686 High-pressure study of silane to 150 GPa. **2011**, 83, 48
- 685 High-pressure phase transition and metallization in Ar(H₂)₂. **2011**, 83, 10
- 684 Crystalline diborane at high pressures. **2011**, 84, 35
- 683 Synthesis and properties of platinum hydride. **2011**, 83, 67
- 682 Superconducting high-pressure phase of platinum hydride from first principles. **2011**, 84, 43
- 681 Covalent Bond Cluster Effects and Phase Transitions in Superconductor Mg_{1-x}Al_xB₂ Compounds. **2011**, 55-57, 950-954
- 680 Charge carriers and electrical conductivity in fluid molecular dielectrics under wide pressure range. **2011**,
- 679 Anharmonicity in aluminum hydride at high pressures. **2011**, 31, 30-34 4
- 678 Pressure-Induced Metallization of Yttrium Trihydride, YH₃. **2012**, 81, SB041 6
- 677 Room-temperature structures of solid hydrogen at high pressures. **2012**, 137, 074501 64

| | | |
|-----|---|---------|
| 676 | Enhanced Anharmonicity Under Pressure. 2012 , 377, 012060 | 4 |
| 675 | High-pressure behavior of dense hydrogen up to 3.5 TPa from density functional theory calculations. 2012 , 111, 063510 | 29 |
| 674 | Metallic hydrogen: Hard pressed. 2012 , 486, 174-6 | 10 |
| 673 | Solid-State and Materials-Chemistry at High Pressure. 2012 , 245-263 | |
| 672 | Dense Hydrogen. 2012 , 301-323 | |
| 671 | A possible approach from BCS through HTS to RTS with three examples. 2012 , 482, 33-44 | 7 |
| 670 | The properties of hydrogen and helium under extreme conditions. 2012 , 84, 1607-1653 | 359 |
| 669 | High Pressure Potassium Polyhydrides: A Chemical Perspective. 2012 , 116, 13322-13328 | 55 |
| 668 | High-pressure phases of lithium borohydride LiBH ₄ : A first-principles study. 2012 , 86, | 16 |
| 667 | Structural, Electronic, Dynamical, and Superconducting Properties in Dense GeH ₄ (H ₂) ₂ . 2012 , 116, 5225-5234 | 48 |
| 666 | Synchrotron infrared measurements of dense hydrogen to 360 GPa. <i>Physical Review Letters</i> , 2012 , 108, 146402 | 7-4 138 |
| 665 | Quasi-Molecular and Atomic Phases of Dense Solid Hydrogen. 2012 , 116, 9221-9226 | 67 |
| 664 | Metals and superconductors: molecular analogs of atomic hydrogen. 2012 , 13, 3581-3 | 31 |
| 663 | Synthesis and Specific Heat of CaPdH ₃ -With the Perovskite Structure. 2012 , 81, 034704 | 6 |
| 662 | A fresh look at dense hydrogen under pressure. I. an introduction to the problem, and an index probing equalization of H-H distances. 2012 , 136, 074501 | 50 |
| 661 | LiBeB: A predicted phase with structural and electronic peculiarities. 2012 , 86, | 13 |
| 660 | Superconducting state in the atomic metallic hydrogen just above the pressure of the molecular dissociation. 2012 , 152, 2023-2026 | 27 |
| 659 | Dielectric catastrophe and insulator-conductor transition. 2012 , 97, 15004 | 1 |

| | | | |
|-----|--|-----|-----|
| 658 | High-pressure structures of disilane and their superconducting properties. <i>Physical Review Letters</i> , 2012 , 108, 117004 | 7.4 | 80 |
| 657 | Special structures and properties of hydrogen nanowire confined in a single walled carbon nanotube at extreme high pressure. 2012 , 2, 022161 | | 2 |
| 656 | Rubidium polyhydrides under pressure: emergence of the linear H ₃ (-) species. 2012 , 18, 5013-21 | | 62 |
| 655 | Density functional theory study of phase IV of solid hydrogen. 2012 , 85, | | 111 |
| 654 | Materials and mechanisms of hole superconductivity. 2012 , 472, 78-82 | | 14 |
| 653 | Absence of metallization in solid molecular hydrogen. 2012 , 95, 449-453 | | 18 |
| 652 | Evidence for Effective Weakening of Electron-Phonon Interaction in Superconducting Tantalum, Niobium, Lead and Aluminum. 2013 , 173, 120-142 | | 6 |
| 651 | Materials from Extreme Conditions. 2013 , 17-46 | | 4 |
| 650 | New perspectives on potential hydrogen storage materials using high pressure. 2013 , 15, 14524-47 | | 63 |
| 649 | Fate of density functional theory in the study of high-pressure solid hydrogen. 2013 , 88, | | 53 |
| 648 | Physical and chemical transformations of highly compressed carbon dioxide at bond energies. 2013 , 15, 7949-66 | | 38 |
| 647 | Superconductivity in GeH ₄ (H ₂) ₂ above 220 GPa high-pressure. 2013 , 410, 90-92 | | 10 |
| 646 | Multigap superconducting state in molecular metallic hydrogen. 2013 , 19, 167-171 | | 24 |
| 645 | The high-pressure superconductivity in SiH ₄ : The strong-coupling approach. 2013 , 172, 5-9 | | 9 |
| 644 | Synthesis of Perovskite-type Hydrides APdH ₃ (A = Sr, Ba) by a New Method Using CaH ₂ as a H ₂ -Source. 2013 , 45, 109-112 | | 3 |
| 643 | The characterization of high-pressure superconducting state in Si ₂ H ₆ compound: The strong-coupling description. 2013 , 74, 641-646 | | 16 |
| 642 | The superconducting state in the B ₂ H ₆ compound at 360 GPa. 2013 , 166, 50-55 | | 14 |
| 641 | Observational signatures of the giant planets collisions. 2013 , 78, 64-68 | | 0 |

| | | | |
|-----|---|-----|-----|
| 640 | Rhombohedral boron: at the crossroads of the chemistry of boron and the physics of frustration. 2013 , 113, 3425-49 | | 140 |
| 639 | Dissociation transition of a composite lattice of magnetic vortices in the flux-flow regime of two-band superconductors. <i>Physical Review Letters</i> , 2013 , 110, 087003 | 7-4 | 21 |
| 638 | Non-Abrikosov vortices in liquid metallic hydrogen. 2013 , 377, 2182-2188 | | 3 |
| 637 | Study of the superconducting state in the Cmmm phase of GeH ₄ compound. 2013 , 165, 39-44 | | 13 |
| 636 | On the critical temperature and the energy gap in dense SiH ₄ (H ₂) ₂ at 250 GPa. 2013 , 153, 26-30 | | 16 |
| 635 | Polyhydrides of the Alkaline Earth Metals: A Look at the Extremes under Pressure. 2013 , 117, 2982-2992 | | 71 |
| 634 | Quantum Monte Carlo study of high pressure solid molecular hydrogen. 2013 , 15, 113005 | | 40 |
| 633 | Phase transitions in a hydrogen-rich compound: tetramethylsilane. 2013 , 37, 098001 | | |
| 632 | Graphene physics and insulator-metal transition in compressed hydrogen. 2013 , 88, | | 16 |
| 631 | Quantum disproportionation: The high hydrides at elevated pressures. 2013 , 88, | | 22 |
| 630 | Stabilizing fractional vortices in multiband superconductors with periodic pinning arrays. 2013 , 87, | | 16 |
| 629 | Evidence of a liquid-liquid phase transition in hot dense hydrogen. 2013 , 110, 8040-4 | | 80 |
| 628 | Superconductivity in highly disordered dense carbon disulfide. 2013 , 110, 11720-4 | | 30 |
| 627 | Phonon-mediated superconductivity in compressed NbH ₄ compound. 2014 , 87, 1 | | 11 |
| 626 | Estimation of the superconducting parameters for silane at high pressure. 2014 , 28, 1450052 | | 6 |
| 625 | INVESTIGATION OF THE SUPERCONDUCTING PHASE IN METALLIC HYDROGEN NEAR THE PRESSURE OF METALLIZATION. 2014 , 28, 1450010 | | |
| 624 | Metallization of Atomic Solid Hydrogen within the Extended Hubbard Model with Renormalized Wannier Wave Functions. 2014 , 126, A-58-A-62 | | 1 |
| 623 | Pressure-induced reentrant metallic phase in lithium. 2014 , 89, | | 43 |

| | | |
|-----|--|--------|
| 622 | Ab initio studies on phase transition, thermoelastic, superconducting and thermodynamic properties of the compressed cubic phase of AlH ₃ . 2014 , 115, 124904 | 8 |
| 621 | High-pressure phase transition of MH ₂ (M: Er, Ho). 2014 , 141, 054703 | 4 |
| 620 | Ground state, collective mode, phase soliton and vortex in multiband superconductors. 2014 , 26, 493202 | 25 |
| 619 | Exploration of stable compounds, crystal structures, and superconductivity in the Be-H system. 2014 , 4, 107118 | 15 |
| 618 | On the room-temperature phase diagram of high pressure hydrogen: an ab initio molecular dynamics perspective and a diffusion Monte Carlo study. 2014 , 141, 024501 | 18 |
| 617 | Search for metallization in benzene to 209 GPa pressure. 2014 , 34, 1-8 | 6 |
| 616 | Superconducting state above the boiling point of liquid nitrogen in the GaH ₃ compound. 2014 , 27, 015003 | 29 |
| 615 | Empirical rule to reconcile Bardeen-Cooper-Schrieffer theory with electron-phonon interaction in normal state. 2014 , 89, 095803 | 11 |
| 614 | Final state of thermal evolution of Jupiter-type planet. 2014 , 501, 7-13 | 6 |
| 613 | Metallization and superconductivity of BeH ₂ under high pressure. 2014 , 140, 124707 | 39 |
| 612 | Perspective: crystal structure prediction at high pressures. 2014 , 140, 040901 | 116 |
| 611 | In situ synchrotron X-ray diffraction in the laser-heated diamond anvil cell: Melting phenomena and synthesis of new materials. 2014 , 277-278, 15-30 | 32 |
| 610 | Layers of intrigue: superconductivity at 4.4 K in Ba ₂ Bi ₃ . 2014 , 27, 070501 | 1 |
| 609 | A theoretical investigation on phase transition and dissociation of ammonium bromide under high pressure. 2014 , 59, 5272-5277 | 2 |
| 608 | Structure and stability prediction of compounds with evolutionary algorithms. 2014 , 345, 181-222 | 26 |
| 607 | Dissociation of high-pressure solid molecular hydrogen: a quantum Monte Carlo and anharmonic vibrational study. <i>Physical Review Letters</i> , 2014 , 112, 165501 | 7-4 77 |
| 606 | High pressure superconducting phase of Bi ₃ : an ab initio study. 2014 , 4, 32068-32074 | 3 |
| 605 | High temperature superconducting properties of atomic hydrogen at 802 GPa. 2014 , 195, 55-60 | 4 |

| | | |
|-----|---|-----|
| 604 | Composition and Constitution of Compressed Strontium Polyhydrides. 2014 , 118, 6433-6447 | 50 |
| 603 | Hydrogen Bond in Compressed Solid Hydrazine. 2014 , 118, 3236-3243 | 14 |
| 602 | Anharmonicity and finite-temperature effects on the structure, stability, and vibrational spectrum of phase III of solid molecular hydrogen. 2014 , 90, | 12 |
| 601 | Pressure induced metallization of $\text{SiH}_4(\text{H}_2)_2$ via first-principles calculations. 2014 , 88, 116-123 | 4 |
| 600 | Quasiparticle energies and excitonic effects in dense solid hydrogen near metallization. 2014 , 90, | 7 |
| 599 | Superconductivity of lithium-doped hydrogen under high pressure. 2014 , 70, 104-11 | 43 |
| 598 | Plasma frequency approach to estimate the Debye temperature of the ionic crystals and metal alloys. 2014 , 75, 903-910 | 5 |
| 597 | Anharmonic free energies and phonon dispersions from the stochastic self-consistent harmonic approximation: Application to platinum and palladium hydrides. 2014 , 89, | 171 |
| 596 | High-Pressure Synthesis of Solids. 2014 , 1-17 | |
| 595 | Description of the superconducting state in the high-pressure fcc phase of platinum-hydride. 2014 , 251, 178-183 | 13 |
| 594 | Light-Element Superconductors. 2015 , 1-15 | |
| 593 | Phase Diagram and High-Temperature Superconductivity of Compressed Selenium Hydrides. 2015 , 5, 15433 | 56 |
| 592 | Chemical Bonding under Pressure. 2015 , 131-157 | |
| 591 | Influence of bonding on superconductivity in high-pressure hydrides. 2015 , 92, | 70 |
| 590 | Emergence of a Kondo singlet state with Kondo temperature well beyond 1000 K in a proton-embedded electron gas. 2015 , 92, | 3 |
| 589 | Discontinuous transition of molecular-hydrogen chain to the quasiatomic state: Combined exact diagonalization and ab initio approach. 2015 , 92, | 5 |
| 588 | Electron-phonon coupling and exchange-correlation effects in superconducting H_3S under high pressure. 2015 , 92, | 28 |
| 587 | Cubic H_3S around 200 GPa: An atomic hydrogen superconductor stabilized by sulfur. 2015 , 91, | 165 |

| | | |
|-----|---|-----|
| 586 | Synthesis of a predicted layered LiB via cold compression. 2015 , 92, | 16 |
| 585 | Pressure-induced superconductivity in H ₂ -containing hydride PbH ₄ (H ₂) ₂ . 2015 , 5, 16475 | 29 |
| 584 | Pulsed laser deposition of air-sensitive hydride epitaxial thin films: LiH. 2015 , 3, 096106 | 10 |
| 583 | Lifshitz transitions and zero point lattice fluctuations in sulfur hydride showing near room temperature superconductivity. 2015 , 1, | 28 |
| 582 | What superconducts in sulfur hydrides under pressure and why. 2015 , 91, | 198 |
| 581 | High-temperature superconductivity in compressed solid silane. 2015 , 5, 8845 | 18 |
| 580 | Prediction of novel crystal structures and superconductivity of compressed HBr. 2015 , 5, 45812-45816 | 6 |
| 579 | Overview of Superconducting Materials with T _c Higher than 23 K. 2015 , 7-21 | 0 |
| 578 | Predicted structures and superconductivity of hypothetical Mg-CH ₄ compounds under high pressures. 2015 , 2, 046001 | 16 |
| 577 | Magnetic Field Sources. 2015 , 39-95 | |
| 576 | Enhancement of T(c) in the atomic phase of iodine-doped hydrogen at high pressures. 2015 , 17, 32335-40 | 13 |
| 575 | Superconductivity above the lowest Earth temperature in pressurized sulfur hydride. 2015 , 112, 37001 | 71 |
| 574 | Detailed study of the superconducting properties in compressed germane. 2015 , 88, 1 | 1 |
| 573 | Superconductivity in compressed hydrogen-rich materials: Pressing on hydrogen. 2015 , 514, 77-85 | 30 |
| 572 | Phase transition in crystal hydrogen under high pressure. 2015 , 217, 6-12 | 1 |
| 571 | High-pressure superconductivity in yttrium: The strong-coupling approach. 2015 , 219, 1-6 | 4 |
| 570 | Compressed sodalite-like MgH ₆ as a potential high-temperature superconductor. 2015 , 5, 59292-59296 | 104 |
| 569 | First-principles study of the pressure and crystal-structure dependences of the superconducting transition temperature in compressed sulfur hydrides. 2015 , 91, | 127 |

| | | | |
|-----|--|-----|------|
| 568 | On the high-pressure superconducting phase in platinum hydride. 2015 , 28, 085018 | | 27 |
| 567 | Metallization and Superconductivity in the Hydrogen-Rich Ionic Salt BaReH ₉ . 2015 , 119, 18007-18013 | | 41 |
| 566 | First-principles study on the structural and electronic properties of metallic HfH ₂ under pressure. 2015 , 5, 11381 | | 18 |
| 565 | High pressure: Compressed hydrogen heats up. 2015 , 14, 466-8 | | 4 |
| 564 | High-pressure hydrogen sulfide from first principles: a strongly anharmonic phonon-mediated superconductor. <i>Physical Review Letters</i> , 2015 , 114, 157004 | 7-4 | 299 |
| 563 | Ab initio study of germanium-hydride compounds under high pressure. 2015 , 5, 19432-19438 | | 12 |
| 562 | Thermodynamics of the hydrogen dominant potassium hydride superconductor at high pressure. 2015 , 212, 1-4 | | 4 |
| 561 | Hydriding and dehydriding energies of PuH _x from ab initio calculations. 2015 , 379, 1649-1653 | | 16 |
| 560 | Pressure-Induced Structures and Properties in Indium Hydrides. 2015 , 54, 9924-8 | | 23 |
| 559 | Pressure-induced vibrational and superconducting properties of lanthanum hydrides from first principles calculations. 2015 , 93, 1630-1637 | | 1 |
| 558 | The hydrogen-bond effect on the high pressure behavior of hydrazinium monochloride. 2015 , 46, 266-272 | | 8 |
| 557 | Conventional superconductivity at 203 kelvin at high pressures in the sulfur hydride system. 2015 , 525, 73-6 | | 1239 |
| 556 | Superconductivity: Extraordinarily conventional. 2015 , 525, 40-1 | | 24 |
| 555 | Quantum Monte Carlo study of the phase diagram of solid molecular hydrogen at extreme pressures. 2015 , 6, 7794 | | 66 |
| 554 | Predicting crystal structures and properties of matter under extreme conditions via quantum mechanics: the pressure is on. 2015 , 17, 2917-34 | | 81 |
| 553 | Pressure-induced metallization of dense (H ₂) _n with high-T _c superconductivity. 2014 , 4, 6968 | | 502 |
| 552 | Synthesis, electron transport properties of transition metal nitrides and applications. 2015 , 70, 50-154 | | 89 |
| 551 | Stabilization of H in the high pressure crystalline structure of H Cl (= 2-7). 2015 , 6, 522-526 | | 25 |

| | | |
|-----|--|----|
| 550 | Discovering New Materials via A Priori Crystal Structure Prediction. 2016 , 274-326 | 10 |
| 549 | High-pressure Raman study of solid hydrogen up to 300 GPa. 2016 , 25, 037401 | 6 |
| 548 | Quasi-two-dimensional metallic hydrogen inside di-phosphide at high pressure. 2016 , 747, 012029 | |
| 547 | Perspective: Role of structure prediction in materials discovery and design. 2016 , 4, 053210 | 95 |
| 546 | Critical temperature of metallic hydrogen at a pressure of 500 GPa. 2016 , 104, 460-465 | 17 |
| 545 | High-pressure structural properties of tetramethylsilane. 2016 , 25, 026104 | 2 |
| 544 | Note: Novel diamond anvil cell for electrical measurements using boron-doped metallic diamond electrodes. 2016 , 87, 076103 | 27 |
| 543 | Vortices and magnetic bags in Abelian models with extended scalar sectors and some of their applications. 2016 , 94, | 9 |
| 542 | Pathways to exotic metastable silicon allotropes. 2016 , 3, 040808 | 49 |
| 541 | Superconducting state in bromium halide at high pressure. 2016 , 495, 106-116 | 5 |
| 540 | Materials design for new superconductors. 2016 , 79, 074502 | 41 |
| 539 | Vortices with scalar condensates in two-component Ginzburg-Landau systems. 2016 , 762, 271-275 | 5 |
| 538 | Anharmonic enhancement of superconductivity in metallic molecular Cmca - 4 hydrogen at high pressure: a first-principles study. 2016 , 28, 494001 | 17 |
| 537 | Search for high-Tc conventional superconductivity at megabar pressures in the lithium-sulfur system. 2016 , 94, | 23 |
| 536 | High-temperature superconductivity at high pressures for H ₃ Si ₆ P ₁₀ , H ₃ P _x S ₁₀ , and H ₃ Cl _x S ₁₀ . 2016 , 99, 105-110 | 18 |
| 535 | Stable structure of metallic hydrogen at a pressure of 500 GPa. 2016 , 104, 319-322 | 12 |
| 534 | Structural phase transition in InSn nanoalloys and its impact on superconducting properties. 2016 , 688, 61-68 | 4 |
| 533 | Dissociation products and structures of solid H ₂ S at strong compression. 2016 , 93, | 96 |

| | | | |
|-----|--|-----|-----|
| 532 | Superconductivity in metastable phases of phosphorus-hydride compounds under high pressure. 2016, 93, | | 108 |
| 531 | Superconductivity in dense carbon-based materials. 2016, 93, | | 18 |
| 530 | Van Hove singularities and spectral smearing in high-temperature superconducting H3S. 2016, 93, | | 79 |
| 529 | Anharmonic effects in atomic hydrogen: Superconductivity and lattice dynamical stability. 2016, 93, | | 60 |
| 528 | First-principles demonstration of superconductivity at 280 K in hydrogen sulfide with low phosphorus substitution. 2016, 93, | | 65 |
| 527 | Tellurium Hydrides at High Pressures: High-Temperature Superconductors. <i>Physical Review Letters</i> , 2016, 116, 057002 | 7.4 | 104 |
| 526 | Optical Properties of Fluid Hydrogen at the Transition to a Conducting State. <i>Physical Review Letters</i> , 2016, 116, 255501 | 7.4 | 54 |
| 525 | Effect of Van Hove singularities on high-Tc superconductivity in H3S. 2016, 93, | | 85 |
| 524 | Evidence of a first-order phase transition to metallic hydrogen. 2016, 93, | | 92 |
| 523 | Pressure and high-Tc superconductivity in sulfur hydrides. 2016, 6, 25608 | | 36 |
| 522 | Electronic structure and electron-phonon coupling in TiH2. 2016, 6, 28102 | | 16 |
| 521 | Synthesis of sodium polyhydrides at high pressures. 2016, 7, 12267 | | 71 |
| 520 | Superconductivity of novel tin hydrides (Sn(n)H(m)) under pressure. 2016, 6, 22873 | | 29 |
| 519 | Topological Surface States in Dense Solid Hydrogen. <i>Physical Review Letters</i> , 2016, 117, 206403 | 7.4 | 8 |
| 518 | Unconventional superconductivity in low density electron systems and conventional superconductivity in hydrogen metallic alloys. 2016, 103, 728-738 | | 8 |
| 517 | Structural, vibrational, and electronic properties of BaReH under pressure. 2016, 28, 505701 | | 0 |
| 516 | Reconstruction of the conduction band in metallic hydrogen sulfide. 2016, 123, 481-488 | | 3 |
| 515 | Solvation of carbonaceous molecules by para-H2 and ortho-D2 clusters. I. Polycyclic aromatic hydrocarbons. 2016, 144, 224302 | | 9 |

| | | |
|-----|---|-----|
| 514 | Quasi-two-dimensional metallic hydrogen in diphosphide at a high pressure. 2016 , 123, 277-283 | 2 |
| 513 | Solvation of carbonaceous molecules by para-H ₂ and ortho-D ₂ clusters. II. Fullerenes. 2016 , 145, 084304 | 3 |
| 512 | High temperature superconductivity in sulfur and selenium hydrides at high pressure. 2016 , 89, 1 | 129 |
| 511 | Superconductivity well above room temperature in compressed MgH ₆ . 2016 , 11, 1 | 13 |
| 510 | Pressure-induced phase transition of SnH ₄ : a new layered structure. 2016 , 6, 10456-10461 | 6 |
| 509 | Crystal Structure and Superconductivity of PH ₃ at High Pressures. 2016 , 120, 3458-3461 | 59 |
| 508 | Origin of distinct hydrogen absorption behavior of Zr ₂ Pd and ZrPd ₂ . 2016 , 41, 1736-1743 | 3 |
| 507 | Hydrogen-modified superconductors: A review. 2016 , 44, 20-34 | 13 |
| 506 | High-Pressure Phase Stability and Superconductivity of Pnictogen Hydrides and Chemical Trends for Compressed Hydrides. 2016 , 28, 1746-1755 | 57 |
| 505 | First principle predictions of new crystal structures for hydrogen reservoirs. 2016 , 41, 5682-5687 | 8 |
| 504 | On the mechanism of high-temperature superconductivity in hydrogen sulfide at 200 GPa: Transition into superconducting anti-adiabatic state in coupling to H-vibrations. 2016 , 6, 1-2 | 9 |
| 503 | Structure and superconductivity of hydrides at high pressures. 2017 , 4, 121-135 | 65 |
| 502 | Nonempirical Calculation of Superconducting Transition Temperatures in Light-Element Superconductors. 2017 , 29, 1602421 | 18 |
| 501 | Multigap Superconductivity at Extremely High Temperature: A Model for the Case of Pressurized H ₂ S. 2017 , 30, 151-156 | 11 |
| 500 | Observation of the Wigner-Huntington transition to metallic hydrogen. 2017 , 355, 715-718 | 319 |
| 499 | Materials discovery at high pressures. 2017 , 2, | 266 |
| 498 | Material Witness: Metallic hydrogen in the spotlight. 2017 , 16, 288 | 3 |
| 497 | Emergence of novel hydrogen chlorides under high pressure. 2017 , 19, 8236-8242 | 13 |

| | | |
|-----|---|-----|
| 496 | Confirmation of the Structural Phase Transitions in XeF ₂ under High Pressure. 2017 , 121, 6264-6271 | 13 |
| 495 | Metallic Hydrogen. 2017 , 187, 4-19 | 0 |
| 494 | Accelerated materials design approaches based on structural classification: application to low enthalpy high pressure phases of SH ₃ and SeH ₃ . 2017 , 3, | 4 |
| 493 | Two-year progress in experimental investigation on high-temperature superconductivity of sulfur hydride. 2017 , 56, 05FA13 | 12 |
| 492 | High-pressure hydrogen sulfide by diffusion quantum Monte Carlo. 2017 , 146, 084503 | 12 |
| 491 | Chemical Bonding at High Pressure. 2017 , 1-41 | 1 |
| 490 | Ternary Gold Hydrides: Routes to Stable and Potentially Superconducting Compounds. 2017 , 139, 8740-8751 | 32 |
| 489 | Spectroscopic evidence of a new energy scale for superconductivity in HS. 2017 , 13, 859-863 | 49 |
| 488 | Potential high- superconducting lanthanum and yttrium hydrides at high pressure. 2017 , 114, 6990-6995 | 387 |
| 487 | van Hove singularities and tight-binding model in high-temperature superconductor H ₃ Se. 2017 , 381, 2526-2530 | 3 |
| 486 | Nb-H system at high pressures and temperatures. 2017 , 95, | 27 |
| 485 | On the Coexistence of Superconductivity and Magnetic Ordering in Unconventional Superconductors. 2017 , 47, 151-156 | |
| 484 | Band Gaps and Effective Oscillator Models for Solid Hydrogen and H ₂ O Ice at High Pressure. 2017 , 107-126 | 0 |
| 483 | Stability of Ar(H) to 358 GPa. 2017 , 114, 3596-3600 | 16 |
| 482 | London penetration depth and thermal fluctuations in the sulphur hydride 203 K superconductor. 2017 , 529, 1600390 | 23 |
| 481 | The renaissance of hydrides as energy materials. 2017 , 2, | 240 |
| 480 | Prediction of superconducting iron-bismuth intermetallic compounds at high pressure. 2017 , 8, 2226-2234 | 20 |
| 479 | Spreading Frost Under the Microscope. 2017 , 10, | |

| | | | |
|-----|--|-----|-----|
| 478 | Electron-phonon coupling mechanisms for hydrogen-rich metals at high pressure. 2017 , 96, | | 35 |
| 477 | Hydrogen-rich scandium compounds at high pressures. 2017 , 96, | | 27 |
| 476 | Nature of the metallization transition in solid hydrogen. 2017 , 95, | | 23 |
| 475 | Auxiliary-field quantum Monte Carlo calculations with multiple-projector pseudopotentials. 2017 , 95, | | 16 |
| 474 | Stability and superconducting properties of GaH ₅ at high pressure. 2017 , 525, 36-40 | | 3 |
| 473 | A topological study of chemical bonds under pressure: solid hydrogen as a model case. 2017 , 19, 26381-26395 | | 6 |
| 472 | Hydrogen Clathrate Structures in Rare Earth Hydrides at High Pressures: Possible Route to Room-Temperature Superconductivity. <i>Physical Review Letters</i> , 2017 , 119, 107001 | 7.4 | 352 |
| 471 | Metallization of solid molecular hydrogen in two dimensions: Mott-Hubbard-type transition. 2017 , 96, | | 2 |
| 470 | Emergence of superconductivity in doped HO ice at high pressure. 2017 , 7, 6825 | | 19 |
| 469 | The role of van der Waals and exchange interactions in high-pressure solid hydrogen. 2017 , 19, 21829-21839 | | 15 |
| 468 | High-temperature superconducting phase of HBr under pressure predicted by first-principles calculations. 2017 , 96, | | 6 |
| 467 | Melting and High P-T Transitions of Hydrogen up to 300 GPa. <i>Physical Review Letters</i> , 2017 , 119, 075302 | 7.4 | 33 |
| 466 | Synthesis of FeH: A layered structure with atomic hydrogen slabs. 2017 , 357, 382-385 | | 106 |
| 465 | Superconductivity in FeH ₅ . 2017 , 96, | | 30 |
| 464 | Public debate on metallic hydrogen to boost high pressure research. 2017 , 2, 275-277 | | 15 |
| 463 | The generalized maximum hardness principle revisited and applied to solids (Part 2). 2017 , 19, 30984-31006 | | 6 |
| 462 | Superconductivity and unexpected chemistry of germanium hydrides under pressure. 2017 , 95, | | 15 |
| 461 | Crystal structures and electronic properties of solid fluorine under high pressure. 2017 , 26, 076103 | | 14 |

| | | |
|-----|--|--------|
| 460 | Reconstruction of bands in metallic hydrogen. 2017 , 105, 430-434 | 4 |
| 459 | First-principles study of superconducting hydrogen sulfide at pressure up to 500 GPa. 2017 , 7, 4473 | 27 |
| 458 | Non-BCS superconducting state in yttrium hydride at a record low value of the external pressure. 2017 , 250, 5-8 | 7 |
| 457 | The isotope effect in H3S superconductor. 2017 , 249, 30-33 | 10 |
| 456 | Magnetic effects of interstitial hydrogen in nickel. 2017 , 421, 7-12 | 6 |
| 455 | On the lifetime of metastable metallic hydrogen. 2017 , 43, 1152-1162 | 3 |
| 454 | Diamond anvil cell using metallic diamond electrodes. 2017 , 56, 05FC01 | 7 |
| 453 | Crystal structure and superconductivity in atomic hydrogen: Deformation between I41/amd and Fddd. 2017 , 950, 042009 | 1 |
| 452 | On the critical temperature discontinuity at the theoretical bcc-fcc phase transition in compressed selenium and tellurium superconductors. 2017 , 29, 445602 | 3 |
| 451 | The Pressing Role of Theory in Studies of Compressed Matter. 2017 , 571-605 | 6 |
| 450 | High-Pressure Neutron Science. 2017 , 637-681 | 1 |
| 449 | Unexpected robustness of the band gaps of TiO2 under high pressures. 2017 , 1, 055014 | 1 |
| 448 | Correlation matrix renormalization theory for correlated-electron materials with application to the crystalline phases of atomic hydrogen. 2018 , 97, | 2 |
| 447 | Crystal structures of CsSi6 at high pressures. 2018 , 150, 144-148 | 8 |
| 446 | Ab initio Eliashberg Theory: Making Genuine Predictions of Superconducting Features. 2018 , 87, 041012 | 40 |
| 445 | Strain-induced modulations of electronic structure and electron-phonon coupling in dense HS. 2018 , 20, 5952-5957 | 13 |
| 444 | Nonsymmorphic symmetry protected node-line semimetal in the trigonal YH. 2018 , 8, 1467 | 8 |
| 443 | Strong Electron-Phonon and Band Structure Effects in the Optical Properties of High Pressure Metallic Hydrogen. <i>Physical Review Letters</i> , 2018 , 120, 057402 | 7.4 10 |

| | | |
|-----|--|-----|
| 442 | High-Pressure Formation of Cobalt Polyhydrides: A First-Principle Study. 2018 , 57, 181-186 | 19 |
| 441 | Colloquium: High pressure and road to room temperature superconductivity. 2018 , 90, | 73 |
| 440 | Probing quantum effects in lithium. 2018 , 548, 68-71 | 3 |
| 439 | Breakdown of the Migdal-Eliashberg theory: A determinant quantum Monte Carlo study. 2018 , 97, | 37 |
| 438 | Solids, liquids, and gases under high pressure. 2018 , 90, | 216 |
| 437 | Soliton-induced critical current oscillations in two-band superconducting bridges. 2018 , 97, | 3 |
| 436 | Similar local order in disordered fluorite and aperiodic pyrochlore structures. 2018 , 144, 60-67 | 48 |
| 435 | Stability and high-temperature superconductivity in hydrogenated chlorine. 2018 , 5, 23-33 | 5 |
| 434 | Band structure and Van Hove singularities in H(₃)S. 2018 , 5, 35-39 | 2 |
| 433 | Hydrogen-rich superconductors at high pressures. 2018 , 8, e1330 | 41 |
| 432 | Conventional/unconventional superconductivity in high-pressure hydrides and beyond: insights from theory and perspectives. 2018 , 5, 5-21 | 4 |
| 431 | Synthesis and Stability of Lanthanum Superhydrides. 2018 , 57, 688-692 | 134 |
| 430 | Synthesis and Stability of Lanthanum Superhydrides. 2018 , 130, 696-700 | 10 |
| 429 | Paths to Room-Temperature Superconductivity. 2018 , 31, 611-617 | 4 |
| 428 | Potential Semiconducting and Superconducting Metastable Si ₃ C Structures under Pressure. 2018 , 30, 421-427 | 4 |
| 427 | Superconducting Hydrogen Sulfide. 2018 , 24, 1769-1778 | 28 |
| 426 | Nuclear quantum effects induce metallization of dense solid molecular hydrogen. 2018 , 39, 262-268 | 12 |
| 425 | Coupled electron-ion Monte Carlo simulation of hydrogen molecular crystals. 2018 , 148, 102314 | 28 |

| | | |
|-----|--|-------|
| 424 | Compressed H ₃ S, Superfluid Density and the Quest for Room-Temperature Superconductivity. 2018 , 31, 619-624 | 5 |
| 423 | The Fluctuation Formation of Phase Solitons in Superconducting Two-Band Bridges. 2018 , 60, 2150-2156 | 3 |
| 422 | Interplay between magnetism and superconductivity in metallic hydrogen and hydrides at high pressure. 2018 , 185, 08003 | 2 |
| 421 | Searching for Superconducting Hydrides – The Experimental Achievements – 2018 , 28, 268-280 | 1 |
| 420 | Deformation behavior of an amorphous zeolitic imidazolate framework - from a supersoft material to a complex organometallic alloy. 2018 , 20, 29001-29011 | 18 |
| 419 | Understanding Novel Superconductors with Ab Initio Calculations. 2018 , 1-41 | |
| 418 | Recent Progress on High-Temperature Superconducting Sulfur Hydride. 2018 , 28, 251-259 | |
| 417 | Dynamics and superconductivity in compressed lanthanum superhydride. 2018 , 98, | 53 |
| 416 | Finite-temperature infrared and Raman spectra of high-pressure hydrogen from first-principles molecular dynamics. 2018 , 98, | 6 |
| 415 | Gradual reduction of the superconducting transition temperature of H ₃ S by partial replacing sulfur with phosphorus. 2018 , 554, 38-43 | 12 |
| 414 | Structural and Superconducting Properties of Tungsten Hydrides Under High Pressure. 2018 , 6, | 5 |
| 413 | High-pressure properties of dense metallic zirconium hydrides studied by ab initio calculations. 2018 , 98, | 16 |
| 412 | Synthesis of Ni ₂ H ₃ at high temperatures and pressures. 2018 , 98, | 12 |
| 411 | Frustrated Structural Instability in Superconducting Quasi-One-Dimensional K ₂ Cr ₃ As ₃ . <i>Physical Review Letters</i> , 2018 , 121, 187002 | 7-4 9 |
| 410 | Effect of covalent bonding on the superconducting critical temperature of the H-S-Se system. 2018 , 98, | 34 |
| 409 | Ab initio investigation on the experimental observation of metallic hydrogen. 2018 , 98, | 6 |
| 408 | Stable structures and superconductivity of an At-H system at high pressure. 2018 , 20, 24783-24789 | 1 |
| 407 | Description of the thermodynamic properties of BiH ₅ and BiH ₆ superconductors beyond the mean-field approximation. 2018 , 279, 27-29 | 1 |

| | | | |
|-----|---|-----|----|
| 406 | High-temperature superconductivity using a model of hydrogen bonds. 2018 , 115, 5709-5713 | | 8 |
| 405 | Metallic hydrogen. 2018 , 30, 254003 | | 12 |
| 404 | At Its Extremes: NMR at Giga-Pascal Pressures. 2018 , 93, 1-74 | | 10 |
| 403 | A stable C2/m phase of H2S at 150–175 GPa. 2018 , 57, 083101 | | 1 |
| 402 | Diamond anvil cells using boron-doped diamond electrodes covered with undoped diamond insulating layer. 2018 , 11, 053101 | | 16 |
| 401 | Crystal structure prediction of uranium hydrides at high pressure: A new hydrogen-rich phase. 2018 , 382, 2959-2964 | | 3 |
| 400 | Metal-Insulator Transition of Solid Hydrogen by the Antisymmetric Shadow Wave Function. 2018 , 73, 845-858 | | 3 |
| 399 | Superconductivity in hydrogenated carbon nanostructures. 2018 , 91, 1 | | 6 |
| 398 | Atomization of correlated molecular-hydrogen chain: A fully microscopic variational Monte Carlo solution. 2018 , 98, | | 3 |
| 397 | Effect of electrons scattered by optical phonons on superconductivity in MH3 (M=S, Ti, V, Se). 2018 , 98, | | 11 |
| 396 | Detecting Superconductivity in the High Pressure Hydrides and Metallic Hydrogen from Optical Properties. <i>Physical Review Letters</i> , 2018 , 121, 047002 | 7-4 | 12 |
| 395 | Unusual sulfur isotope effect and extremely high critical temperature in HS superconductor. 2018 , 8, 6037 | | 16 |
| 394 | Study of thermodynamic critical field in Ba(AuH2)2 superconductor. 2018 , | | |
| 393 | High-Tc Hydrides: Interplay of Optical and Acoustic Modes and Comments Regarding the Upper Limit of Tc. 2018 , 31, 3391-3395 | | 3 |
| 392 | Insulator-metal transition in dense fluid deuterium. 2018 , 361, 677-682 | | 83 |
| 391 | The Mechanism of the Transition of Solid Hydrogen to the Conducting State at High Pressures. 2018 , 63, 272-275 | | 3 |
| 390 | Absence of superconductivity in iron polyhydrides at high pressures. 2018 , 97, | | 21 |
| 389 | Superconductivity and structural studies of highly compressed hydrogen sulfide. 2018 , 552, 27-29 | | 8 |

| | | | |
|-----|---|-----|----|
| 388 | Structure and Metallicity of Phase V of Hydrogen. <i>Physical Review Letters</i> , 2018 , 120, 255701 | 7.4 | 36 |
| 387 | Pressure dependence of the superconducting transition temperature of compressed LaH ₁₀ . 2019 , 100, | | 21 |
| 386 | Classifying hydrogen-rich superconductors. 2019 , 6, 106002 | | 15 |
| 385 | Hydrogen-Induced High-Temperature Superconductivity in Two-Dimensional Materials: The Example of Hydrogenated Monolayer MgB ₂ . <i>Physical Review Letters</i> , 2019 , 123, 077001 | 7.4 | 17 |
| 384 | Mechanism of High-Temperature Superconductivity in Correlated-Electron Systems. 2019 , 4, 57 | | 11 |
| 383 | Atomic and Electronic Properties of a 155 HS Cluster under Pressure. 2019 , 4, 10524-10533 | | 2 |
| 382 | Improving resolution of solid state NMR in dense molecular hydrogen. 2019 , 115, 131903 | | 3 |
| 381 | Finite-element simulation of the liquid-liquid transition to metallic hydrogen. 2019 , 100, | | 4 |
| 380 | Ab initio study of metallic aluminum hydrides at high pressures. 2019 , 100, | | 3 |
| 379 | Ternary superconducting phosphorus hydrides stabilized via lithium. 2019 , 5, | | 13 |
| 378 | The role of CALYPSO in the discovery of high- T _c hydrogen-rich superconductors. 2019 , 28, 107104 | | 14 |
| 377 | Unconventional phase III of high-pressure solid hydrogen. 2019 , 100, | | 4 |
| 376 | Enhancing superconductivity in bulk Bi ₂ Pd by negative pressure induced by quantum electronic stress. 2019 , 100, | | 2 |
| 375 | Fermi-Bose Mixtures and BCS-BEC Crossover in High-T _c Superconductors. 2019 , 4, 51 | | 17 |
| 374 | Synthesis of clathrate cerium superhydride CeH at 80-100 GPa with atomic hydrogen sublattice. 2019 , 10, 4453 | | 64 |
| 373 | Semimetallic molecular hydrogen at pressure above 350 GPa. 2019 , 15, 1246-1249 | | 54 |
| 372 | Unexpected calcium polyhydride CaH: A possible route to dissociation of hydrogen molecules. 2019 , 150, 044507 | | 10 |
| 371 | Ab initio study of the LiH phase diagram at extreme pressures and temperatures. 2019 , 99, | | 3 |

- 370 Superconductivity of the hydrogen-rich metal hydride Li5MoH11 under high pressure. **2019**, 99, 22
- 369 Dynamics of the Structural Transformation of Crystalline Hydrogen upon the Transition into the Conductive State under Compression. **2019**, 64, 145-149 3
- 368 Superconducting phase diagram of HS under high magnetic fields. **2019**, 10, 2522 37
- 367 Superconductivity in sodalite-like yttrium hydride clathrates. **2019**, 99, 54
- 366 Classifying superconductivity in compressed H3S. **2019**, 33, 1950195 12
- 365 High-temperature superconductivity in sulfur hydride evidenced by alternating-current magnetic susceptibility. **2019**, 6, 713-718 32
- 364 Superconductivity by doping in alkali-metal hydrides without applied pressure: An ab initio study. **2019**, 99, 6
- 363 Prospects to attain room temperature superconductivity. **2019**, 297, 17-20 1
- 362 Characterization of the superconducting phase in tellurium hydride at high pressure. **2019**, 33, 1950169 2
- 361 The quest for room-temperature superconductivity in hydrides. **2019**, 72, 52-58 14
- 360 Superconductivity of light-metal hydrides. **2019**, 66, 1246-1256 5
- 359 Favored decomposition paths of hydrogen sulfide at high pressure. **2019**, 21, 033023 5
- 358 Hydrogen Confined in a Single Wall Carbon Nanotube Becomes a Metallic and Superconductive Nanowire under High Pressure. **2019**, 19, 2537-2542 8
- 357 First-principles investigation of the superconducting properties of thallium sulfide. **2019**, 562, 1-6 1
- 356 Potential high-Tc superconductivity in CaYH12 under pressure. **2019**, 99, 53
- 355 Band gap closure, incommensurability and molecular dissociation of dense chlorine. **2019**, 10, 1134 7
- 354 Viewpoint: the road to room-temperature conventional superconductivity. **2019**, 31, 234002 19
- 353 Superconductivity of boron-doped graphane under high pressure.. **2019**, 9, 7680-7686 2

| | | |
|-----|---|-------|
| 352 | The Search for Superconductivity in High Pressure Hydrides. 2019 , | 17 |
| 351 | NiP2: A Story of Two Divergent Polymorphic Multifunctional Materials. 2019 , 31, 3407-3418 | 35 |
| 350 | Superconductivity at 23 K in MgLi compound at ultrahigh pressure. 2019 , 164, 158-165 | |
| 349 | Thermodynamic properties of superconducting GeH3 under high pressure. 2019 , 132, 110-115 | |
| 348 | Nuclear Magnetic Resonance Spectroscopy as a Dynamical Structural Probe of Hydrogen under High Pressure. <i>Physical Review Letters</i> , 2019 , 122, 135501 | 7-4 6 |
| 347 | Structure prediction drives materials discovery. 2019 , 4, 331-348 | 242 |
| 346 | Microscopic mechanism of room-temperature superconductivity in compressed LaH10. 2019 , 99, | 31 |
| 345 | High-temperature superconductivity in alkaline and rare earth polyhydrides at high pressure: A theoretical perspective. 2019 , 150, 050901 | 77 |
| 344 | Novel superconducting structures of BH under high pressure. 2019 , 21, 5466-5473 | 9 |
| 343 | Determination of the contribution of a phonon and a magnetic field to the chemical properties of the hydrogen molecule using the density functional theory approach. 2019 , 560, 197-203 | 1 |
| 342 | Thermodynamics and superconductivity of SxSe1-xH3. 2019 , 99, | 20 |
| 341 | Mechanism of the transition of solid hydrogen to the conducting state at high pressures. 2019 , 1147, 012002 | |
| 340 | Magnetic Sensing inside a Diamond Anvil Cell via Nitrogen-Vacancy Center Spins*. 2019 , 36, 086201 | 12 |
| 339 | A comparative study using state-of-the-art electronic structure theories on solid hydrogen phases under high pressures. 2019 , 5, | 10 |
| 338 | Evidence of Ideal Superconducting Sulfur Superhydride in a Pressure Cell. 2019 , 16, 18 | 1 |
| 337 | Predicted high-temperature superconductivity in cerium hydrides at high pressures. 2019 , 126, 235901 | 10 |
| 336 | X-rays glimpse solid hydrogen's structure. 2019 , 573, 504-505 | |
| 335 | CALYPSO Method for Structure Prediction and Its Applications to Materials Discovery. 2019 , 1-28 | 5 |

| | | | |
|-----|---|-----|-----|
| 334 | Evidence for Superconductivity above 260 K in Lanthanum Superhydride at Megabar Pressures. <i>Physical Review Letters</i> , 2019 , 122, 027001 | 7.4 | 493 |
| 333 | Inducing a Curl with a Stretch. 2019 , 12, | | 5 |
| 332 | A chemical perspective on high pressure crystal structures and properties. 2020 , 7, 149-169 | | 15 |
| 331 | Superconducting Hydrides Under Pressure. 2020 , 11, 57-76 | | 70 |
| 330 | High-temperature superconductors: underlying physics and applications. 2020 , 75, 3-14 | | 5 |
| 329 | Superconductivity at 161 K in thorium hydride ThH10: Synthesis and properties. 2020 , 33, 36-44 | | 102 |
| 328 | Distinguishing the Structure of High-Pressure Hydrogen with Dielectric Constants. 2020 , 11, 664-669 | | 2 |
| 327 | Seeking high temperature superconductors in ambient from exemplary beryllium-based alloys. 2020 , 306, 113769 | | 0 |
| 326 | Metallization and superconductivity in methane doped by beryllium at low pressure. 2020 , 22, 1069-1077 | | 11 |
| 325 | Pressure-induced high-temperature superconductivity in hypothetical H3X (X=As, Se, Br, Sb, Te and I) in the H3S structure with Im $\bar{3}$ m symmetry. 2020 , 139, 109315 | | 8 |
| 324 | Stability and superconductivity of TiPHn (n = 18) under high pressure. 2020 , 384, 126189 | | 6 |
| 323 | Room-temperature superconductivity in a carbonaceous sulfur hydride. 2020 , 586, 373-377 | | 251 |
| 322 | Notes on superconducting hydrides. 2020 , 73, 12-12 | | 1 |
| 321 | Phononic Thermal Transport in Yttrium Hydrides Allotropes. 2020 , 7, | | 2 |
| 320 | Hydrogen Pentagraphenelike Structure Stabilized by Hafnium: A High-Temperature Conventional Superconductor. <i>Physical Review Letters</i> , 2020 , 125, 217001 | 7.4 | 31 |
| 319 | The Pseudopotential Approach within Density-Functional Theory: The Case of Atomic Metallic Hydrogen. 2020 , 5, 74 | | |
| 318 | Emerging Functional Materials under High Pressure toward Enhanced Properties. 2020 , 2, 1233-1239 | | 16 |
| 317 | Extreme Energetic Materials at Ultrahigh Pressures. 2020 , 6, 976-980 | | 0 |

| | | |
|-----|--|----|
| 316 | High-Tc state of lanthanum hydrides. 2020 , 102, | 3 |
| 315 | Phase diagram and superconductivity of calcium borohydrides at extreme pressures. 2020 , 102, | 16 |
| 314 | High-temperature conventional superconductivity in the boron-carbon system: Material trends. 2020 , 102, | 4 |
| 313 | Second group of high-pressure high-temperature lanthanide polyhydride superconductors. 2020 , 102, | 62 |
| 312 | Two good metals make a semiconductor: A potassium-nickel compound under pressure. 2020 , 102, | 3 |
| 311 | New possible candidate structure for phase IV of solid hydrogen.. 2020 , 10, 26443-26450 | 0 |
| 310 | Understanding dense hydrogen at planetary conditions. 2020 , 2, 562-574 | 10 |
| 309 | Evidence for supercritical behaviour of high-pressure liquid hydrogen. 2020 , 585, 217-220 | 34 |
| 308 | Underlying mechanism of charge transfer in Li-doped MgH16 at high pressure. 2020 , 102, | 3 |
| 307 | First-principles study on crystal structures and superconductivity of molybdenum hydrides under high pressure. 2020 , 128, 105901 | 5 |
| 306 | Superconductivity of Lanthanum Superhydride Investigated Using the Standard Four-Probe Configuration under High Pressures. 2020 , 37, 107401 | 21 |
| 305 | Computational discovery of a dynamically stable cubic SH3-like high-temperature superconductor at 100 GPa via CH4 intercalation. 2020 , 101, | 37 |
| 304 | Semimetal States of Crystalline Molecular Hydrogen at High Pressures. 2020 , 111, 162-166 | 3 |
| 303 | Isotope effect in superconducting lanthanum hydride under high compression. 2020 , 101, | 13 |
| 302 | Ab initio study of pressure-induced metallization and superconductivity in orthorhombic LiBH2 phase under ultra-high pressure. 2020 , 384, 126525 | 4 |
| 301 | Simulation of ab Initio Dynamics of the Formation of Metastable Conducting Solid Hydrogen. 2020 , 130, 423-430 | 0 |
| 300 | TurboRVB: A many-body toolkit for ab initio electronic simulations by quantum Monte Carlo. 2020 , 152, 204121 | 19 |
| 299 | Demonstration of electric double layer gating under high pressure by the development of field-effect diamond anvil cell. 2020 , 116, 223506 | 2 |

| | | |
|-----|--|-----|
| 298 | Analysis of Zero-Point Isotherm of Hydrogen Isotopes in the Ultrahigh Pressure Range. 2020 , 130, 183-197 | 2 |
| 297 | Advanced McMillan β equation and its application for the analysis of highly-compressed superconductors. 2020 , 33, 094009 | 7 |
| 296 | Superconductivity in La and Y hydrides: Remaining questions to experiment and theory. 2020 , 5, 028201 | 34 |
| 295 | Multiband nature of room-temperature superconductivity in LaH ₁₀ at high pressure. 2020 , 101, | 12 |
| 294 | Superconductivity in Palladium Hydride Systems. 2020 , 89, 051004 | 6 |
| 293 | A Boosted Critical Temperature of 166 K in Superconducting D ₃ S Synthesized from Elemental Sulfur and Hydrogen. 2020 , 59, 18970-18974 | 14 |
| 292 | Stability and superconductivity of lanthanum and yttrium decahydrides. 2020 , 101, | 10 |
| 291 | Electronic correlations in uranium hydride UH under pressure. 2020 , 32, 385602 | 2 |
| 290 | A Boosted Critical Temperature of 166 K in Superconducting D ₃ S Synthesized from Elemental Sulfur and Hydrogen. 2020 , 132, 19132-19136 | |
| 289 | Optical properties of superconducting pressurized LaH ₁₀ . 2020 , 102, | 5 |
| 288 | Nonlocal Electronic Correlations in the Cohesive Properties of High-Pressure Hydrogen Solids. 2020 , 11, 1521-1527 | 3 |
| 287 | From LaH to room-temperature superconductors. 2020 , 10, 1592 | 12 |
| 286 | Superconductivity of LaH ₁₀ and LaH ₁₆ polyhydrides. 2020 , 101, | 38 |
| 285 | Classifying superconductivity in ThH-ThD superhydrides/superdeuterides. 2020 , 7, 016003 | 4 |
| 284 | High-temperature superconductivity in LaH ₁₀ . 2020 , 101, | 11 |
| 283 | A perspective on conventional high-temperature superconductors at high pressure: Methods and materials. 2020 , 856, 1-78 | 132 |
| 282 | High-Pressure Synthesis of Magnetic Neodymium Polyhydrides. 2020 , 142, 2803-2811 | 28 |
| 281 | Synchrotron infrared spectroscopic evidence of the probable transition to metal hydrogen. 2020 , 577, 631-635 | 83 |

| | | |
|-----|---|-------|
| 280 | Chemistry under extreme conditions: Pressure evolution of chemical bonding and structure in dense solids. 2020 , 5, 018202 | 26 |
| 279 | Pressure-induced superconductivity in SnSbTe. 2020 , 32, 235901 | 1 |
| 278 | Ab initio phonon self-energies and fluctuation diagnostics of phonon anomalies: Lattice instabilities from Dirac pseudospin physics in transition metal dichalcogenides. 2020 , 101, | 3 |
| 277 | Everything you always wanted to know about metallic hydrogen but were afraid to ask. 2020 , 5, 038101 | 26 |
| 276 | Predicting novel superconducting hydrides using machine learning approaches. 2020 , 101, | 13 |
| 275 | Investigation of Superconductivity in Hydrogen-rich Systems. 2020 , 89, 051005 | 6 |
| 274 | Quantum electrocatalysts: theoretical picture, electrochemical kinetic isotope effect analysis, and conjecture to understand microscopic mechanisms. 2020 , 22, 11219-11243 | 11 |
| 273 | High-temperature superconductivity in the Ti-H system at high pressures. 2020 , 101, | 6 |
| 272 | The XtalOpt Evolutionary Algorithm for Crystal Structure Prediction. 2021 , 125, 1601-1620 | 11 |
| 271 | Dimensional interpolation for metallic hydrogen. 2021 , 23, 7841-7848 | 4 |
| 270 | Electronic structure, thermodynamic properties and metallic behaviours of hydrogen. 2021 , 119, e1810350 | |
| 269 | Black metal hydrogen above 360 GPa driven by proton quantum fluctuations. 2021 , 17, 63-67 | 16 |
| 268 | Formation and superconducting properties of predicted ternary hydride ScYH ₆ under pressures. 2021 , 121, e26459 | 6 |
| 267 | Phase stability and superconductivity of lead hydrides at high pressure. 2021 , 103, | 26 |
| 266 | Probing the Electronic Band Gap of Solid Hydrogen by Inelastic X-Ray Scattering up to 90 GPa. <i>Physical Review Letters</i> , 2021 , 126, 036402 | 7.4 2 |
| 265 | Hydrogenation as a source of superconductivity in two-dimensional TiB ₂ . 2021 , 32, 2150057 | 1 |
| 264 | High-Temperature Cuprate Superconductors and Later Discoveries. 2021 , 73-121 | |
| 263 | Progress on hydrogen-rich superconductors under high pressure. 2021 , 70, 017407-017407 | 4 |

| | | | |
|-----|---|-----|----|
| 262 | Hydrogen Clathrate Structures in Uranium Hydrides at High Pressures. 2021 , 6, 3946-3950 | | 2 |
| 261 | Theoretical study on the Y-Ba-H hydrides at high pressure. 2021 , 390, 127109 | | 2 |
| 260 | Interplay of pairing correlation and Coulomb correlation in Boson exchange superconductors. 2021 , 94, 1 | | 0 |
| 259 | Pressure-Induced Evolution of Crystal and Electronic Structure of Ammonia Borane. 2021 , 12, 2036-2043 | | 2 |
| 258 | Stability and bonding nature of clathrate H cages in a near-room-temperature superconductor LaH10. 2021 , 5, | | 9 |
| 257 | Synthesis of Yttrium Superhydride Superconductor with a Transition Temperature up to 262 K by Catalytic Hydrogenation at High Pressures. <i>Physical Review Letters</i> , 2021 , 126, 117003 | 7.4 | 49 |
| 256 | Phonon-mode specific contributions to room-temperature superconductivity in atomic hydrogen at high pressures. 2021 , 103, | | 5 |
| 255 | Quantum and Classical Proton Diffusion in Superconducting Clathrate Hydrides. <i>Physical Review Letters</i> , 2021 , 126, 117002 | 7.4 | 6 |
| 254 | Synthesis of superconducting SbS and SbS2 antimony chalcogenide compounds at high pressures. 2021 , 103, | | 0 |
| 253 | The superconductivity of NbSi ₃ compounds at high pressure. 2021 , 329, 114260 | | 2 |
| 252 | Strong anharmonic and quantum effects in Pm3̄n AlH3 under high pressure: A first-principles study. 2021 , 103, | | 6 |
| 251 | Nonstandard superconductivity or no superconductivity in hydrides under high pressure. 2021 , 103, | | 18 |
| 250 | Synthesis of ternary compound in H-S-Se system at high pressures. | | 0 |
| 249 | Metallic silicon subhydrides at high pressures studied by ab initio calculations. 2021 , 103, | | 0 |
| 248 | Resistive transition of hydrogen-rich superconductors. 2021 , 34, 064001 | | 6 |
| 247 | Anomalous behavior in high-pressure carbonaceous sulfur hydride. 2021 , 583, 1353851 | | 17 |
| 246 | Room-temperature-superconducting T driven by electron correlation. 2021 , 11, 10329 | | 3 |
| 245 | Comparison of highly-compressed 2/-SnH superhydride with conventional superconductors. 2021 , 33, | | 1 |

- 244 Thermodynamic Properties of the Superconducting State in Metallic Hydrogen: Electronic Correlations, Non-conventional Electron-Phonon Couplings and the Anharmonic Effects. **2021**, 34, 2281-2291
- 243 Importance of carbon in carbonaceous sulfur hydride room-temperature superconductor. **2021**, 331, 114295 1
- 242 New frontiers in extreme conditions science at synchrotrons and free electron lasers. **2021**, 33, 4
- 241 Raman study of hydrogen-saturated silica glass. **2021**, 46, 24501-24501 1
- 240 Evolution of hydrogen dissolution and superconductivity in Re-based solid solutions under pressure studied by ab initio calculations. **2021**, 103, 0
- 239 Beyond the Fröhlich Hamiltonian: Path-integral treatment of large polarons in anharmonic solids. **2021**, 103, 1
- 238 Measurements for Diffusion Coefficients of Hydrogen in Solids at High Pressures Using Micro-Raman Spectroscopy. **2021**, 70, 351-362
- 237 Multiple solutions for the equilibrium populations in BCS superconductors. **2021**, 572, 125879
- 236 Plasma phase transition. 2
- 235 Plasma phase transition.
- 234 Massive electrons and unconventional room-temperature superconductivity in superhydrides. **2021**, 104,
- 233 Chemical Pressure Boost Record-High Superconductivity in van der Waals Materials FeSe_{1-x}S_x. **2021**, 31, 2102917 1
- 232 Pressure-Induced Phase Transitions. **2021**, 25-47
- 231 Classifying Charge Carrier Interaction in Highly Compressed Elements and Silane. **2021**, 14, 1
- 230 Formation Mechanism of Chemically Precompressed Hydrogen Clathrates in Metal Superhydrides. **2021**, 60, 12934-12940 0
- 229 An unstable pathway to room temperature superconductivity?. **2021**, 118,
- 228 Two intermediate incommensurate phases in the molecular dissociation process of solid iodine under high pressure. **2021**, 3, 0
- 227 Superconductive hydrogen-rich compounds under high pressure. **2021**, 127, 1 0

| | | |
|-----|--|--------|
| 226 | Possible high-T C superconductivity at 50 GPa in sodium hydride with clathrate structure. 2021 , 23, 093007 | 0 |
| 225 | Strong correlation between electronic bonding network and critical temperature in hydrogen-based superconductors. 2021 , 12, 5381 | 3 |
| 224 | The 2021 Room-Temperature Superconductivity Roadmap. 2021 , | 9 |
| 223 | The dominance of non-electron-phonon charge carrier interaction in highly-compressed superhydrides. 2021 , 34, 115001 | 3 |
| 222 | Phonon-mediated high-temperature superconductivity in the ternary borohydride KB ₂ H ₈ under pressure near 12 GPa. 2021 , 104, | 5 |
| 221 | Phase diagrams and superconductivity of ternary Na-Al-H compounds at high pressure. 2021 , 104, | 0 |
| 220 | Electron-phonon mediated superconductivity in 1T MoS ₂ and effect of pressure on its transition temperature. 2021 , 156, 110185 | |
| 219 | Superconducting Binary Hydrides: Theoretical Predictions and Experimental Progresses. 2021 , 100546 | 1 |
| 218 | High-Temperature Superconducting Phases in Cerium Superhydride with a T _c up to 115 K below a Pressure of 1 Megabar. <i>Physical Review Letters</i> , 2021 , 127, 117001 | 7.4 19 |
| 217 | Flux trapping in superconducting hydrides under high pressure. 2021 , 589, 1353916 | 4 |
| 216 | Laser-induced crystallization and phase transitions of As ₂ Se ₃ under high pressure. 2021 , 103, | |
| 215 | Evidence of Phonon-Mediated Superconductivity in LaH ₁₀ at High Pressure. 2021 , 533, 2000518 | 4 |
| 214 | Electronic Fluctuation and Pairing. 1987 , 301-308 | 1 |
| 213 | Superconductivity in Metallic Hydrogen. 1976 , 583-592 | 2 |
| 212 | Electron-Phonon Interaction and Superconductivity in Metallic Hydrogen. 1976 , 593-605 | 6 |
| 211 | Penultimate Static Pressure Containment Considerations and Possible Applications to Metallic Hydrogen Preparation. 1973 , 435-440 | 6 |
| 210 | Metallic Hydrogen: Recent Theoretical Progress. 1978 , 21-42 | 2 |
| 209 | High Hydrogen Pressures in Superconductivity. 1978 , 43-53 | 2 |

| | | |
|-----|--|----|
| 208 | Study of Phase Transitions at High Pressure. 1979 , 114-129 | 1 |
| 207 | CALYPSO Method for Structure Prediction and Its Applications to Materials Discovery. 2020 , 2729-2756 | 1 |
| 206 | Electron-Phonon Interactions and Superconductivity. 1973 , 63-78 | 1 |
| 205 | Metal-Hydrogen System Under Extended p, T Conditions. 1993 , 71-119 | 4 |
| 204 | Electronic Structure. 1993 , 300-320 | 1 |
| 203 | Ultra high pressure experiments on high-T _c superconductors. 1993 , 121-146 | 2 |
| 202 | Electronic Structure and the Electron-Phonon Interaction. 1981 , 165-222 | 3 |
| 201 | Hole-doped room-temperature superconductivity in H ₃ S _{1-x} Z (Z=C, Si). 2020 , 15, 100330 | 20 |
| 200 | Evolution of metallization and superconductivity in solid hydrogen. 2020 , 384, 126571 | 3 |
| 199 | Quantum crystal structure in the 250-kelvin superconducting lanthanum hydride. 2020 , 578, 66-69 | 93 |
| 198 | Observed metallization of hydrogen interpreted as a band structure effect. 2020 , 33, 03LT01 | 1 |
| 197 | Superconductivity of hydrogen superoxide under high pressure. 2020 , 33, 114003 | 2 |
| 196 | Influence of finite temperature exchange-correlation effects in hydrogen. 2020 , 101, | 23 |
| 195 | First-principles study of the robust superconducting state of NbTi alloys under ultrahigh pressures. 2020 , 102, | 0 |
| 194 | Interplay between structure and superconductivity: Metastable phases of phosphorus under pressure. 2017 , 1, | 31 |
| 193 | Prediction of high-T _c conventional superconductivity in the ternary lithium borohydride system. 2017 , 1, | 24 |
| 192 | Low-pressure superconductivity in lithium-doped methane predicted by first principles. 2021 , 32, 2150032 | 1 |
| 191 | A Schematic Two Overlapping-Band Model for Superconducting Sulfur Hydrides: The Isotope Mass Exponent. 2019 , 2019, 1-7 | 6 |

| | | |
|-----|---|----|
| 190 | Strong-Coupling Description of the High-Temperature Superconductivity in the Molecular Hydrogen. 2012 , 121, 841-844 | 15 |
| 189 | The Transition to the Metallic State in Alkali and Low-Z Fluids. 2003 , 217, 795-802 | 3 |
| 188 | Hydrogen at high pressure. 1999 , 169, 1223 | 22 |
| 187 | Non-simple behavior of simple metals at high pressure. 2005 , 175, 793 | 23 |
| 186 | High-temperature conventional superconductivity. 2016 , 186, 1257-1263 | 6 |
| 185 | Hydrogen and its compounds under extreme pressure. 2017 , 187, 953-970 | 1 |
| 184 | Exploration of Ultra-High Pressure Condensed Matter Research with High-Power Laser. 2007 , 17, 304-315 | 3 |
| 183 | Super-Hydrides of Lanthanum and Yttrium: On Optimal Conditions for Achieving near Room Temperature Superconductivity. 2019 , 09, 22-36 | 6 |
| 182 | Structures and novel superconductivity of hydrogen-rich compounds under high pressures. 2017 , 66, 036102 | 4 |
| 181 | High pressure synthesis of nanotwinned ultrahard materials. 2017 , 66, 036201 | 9 |
| 180 | First-Principles Prediction of Pressure Dependent Mechanical, Electronic, Optical, and Superconducting State Properties of NaC ₆ : A Potential High-T _c Superconductor. | |
| 179 | Experimental Study of Crystal Structure and Superconductivity in Hydrides under High Pressure. 2021 , 31, 112-121 | |
| 178 | Superconductivity in Shear Strained Semiconductors. 2021 , 38, 086301 | 5 |
| 177 | High T _c Superconductivity in Heavy Rare Earth Hydrides. 2021 , 38, 107401 | 2 |
| 176 | Possible coexistence of charge density wave and superconductivity and enhancement of the transition temperature for the layered quasi-two-dimensional superconductor 2H-NbSe ₂ . 2021 , 5, 105010 | 2 |
| 175 | Search for New High-T _c Superconductors at Elevated Temperatures. 1 | |
| 174 | Metallic Hydrogen: A Liquid Superconductor?. 2021 , 125, 23349-23355 | |
| 173 | Superconducting ternary hydrides under high pressure. | 4 |

- 172 Pressure-induced hydride superconductors above 200 K. **2021**, 6, 068201 2
- 171 Progress in Experimental Studies of Insulator-Metal Transitions at Multimegabar Pressures. **2001**, 201-216
- 170 Pressure Effects on Structural and Electronic Properties of Superconductors. **2004**, 429-446 1
- 169 Research in ultrahigh magnetic field physics. **2011**, 181, 441
- 168 Transport properties of carbide superconductor La₂C₃. **2013**, 15, 6-10
- 167 Superconducting Elements. **1973**, 81-105
- 166 On the Equation of State of Hydrogen and Its Use in Models of Major Planets. **1974**, 329-335
- 165 Superconductivity at High Pressures. **1974**, 27-33
- 164 ULTRASONIC VELOCITY RATIO MEASUREMENTS IN SOLID HYDROGEN TO PRESSURES IN EXCESS OF 60 KBAR. **1980**, 635-637
- 163 PHASE TRANSITIONS IN DENSE ASTROPHYSICAL PLASMAS. **1990**, 3-19
- 162 PHASE TRANSITIONS IN DENSE ASTROPHYSICAL PLASMAS. **1990**, 3-19 1
- 161 Metallic Hydrogen. **1996**, 377-386
- 160 Pulsars. **1996**, 109-125
- 159 The Discovery Of High-TC Superconductivity And Its Decisive Circumstances. **1997**, 1-6
- 158 Hydrogen and the Alkali Metals. **2015**, 39-79
- 157 Solving the Measurement Problem and then Steppin' Out over the Line Riding the Rarest Italian: Crossing the Streams to Retrieve Stable Bioactivity in Majorana Bound States of Dialyzed Human Platelet Lysates. **2015**, 9, 32-44
- 156 To the Question about the Nature and Structure of Jupiter's Magnetic Field. **2017**, 08, 1091-1110
- 155 High Pressure Researches Using High-Power Lasers and XFELs. **2017**, 45, 480

154 Materials sob condiçõs extremas. **2017**, 69, 37-41

153 Chapter 7:First-Principles Computational Approaches to Superconducting Transition Temperatures: Phonon-Mediated Mechanism and Beyond. **2018**, 198-239

152 Search for Metallic Phases of Hydrogen and Hydrides. **2018**, 28, 281-290

151 Icosahedral (H₂)₁₃ supermolecule. **2018**, 2,

150 Materials From Extreme High Pressure Conditions. **2019**,

149 Fabrication and Observation of Metastable to Stable Relaxation of Palladium Hydride Thin Films. **2019**, 62, 492-497

148 Velocity and Stability of Condensed Polymorphic SiH₄: A High-Temperature High-Pressure Brillouin Investigation. **2020**, 37, 066201

147 Enhancing the critical temperature of strained Niobium films. **2020**, 7, 076001

146 On the stability of the metastable phase of atomic hydrogen. **2020**, 1686, 012042

145 Possibility of metastable atomic metallic hydrogen. **2020**, 102,

144 Ab initio investigation of hydrogen-based high T_c superconductor that is stable under ambient environment. **2020**, 22, 123017

143 Understanding Novel Superconductors with Ab Initio Calculations. **2020**, 73-112

142 Theoretical considerations of superconducting HfBH₂ and HfB₂H under high pressure. **2021**, 130, 153904

141 Sequence of superconducting states in field cooled FeCrS. **2021**, 33,

140 Origin of strange normal-state and superconductivity in sulfur hydrides at high pressures. **2021**, 413473

139 Aspects of strong electron-phonon coupling in superconductivity of compressed metal hydrides MH₆ (M = Mg, Ca, Sc, Y) with Im-3m structure. **2021**, 130, 183902

138 Hole superconductivity xOr hot hydride superconductivity. **2021**, 130, 181102

137 Possible Jahn-Teller Effect and Strong Electron-Phonon Coupling in Beryllium Hydride. **2007**, 43-55

- 136 Strong-coupling character of superconducting phase in compressed selenium hydride. **2021**, 35, 2150045
- 135 The dependence of the critical temperature on pressure. **2020**, 34, 2050276 0
- 134 Effects of pseudopotentials and exchange-correlation functionals on phase transition of LaH10. **2022**, 341, 114583 0
- 133 Experimental clathrate superhydrides EuH6 and EuH9 at extreme pressure conditions. **2021**, 3, 2
- 132 Hydrides under High Pressure. 1 1
- 131 The electron-phonon coupling constant and the Debye temperature in polyhydrides of thorium, hexadeuteride of yttrium, and metallic hydrogen phase III. **2021**, 130, 195901 3
- 130 Cooper-pair distribution function [Formula: see text] for superconducting [Formula: see text] and [Formula: see text]. **2021**, 11, 22618
- 129 Combining pressure and electrochemistry to synthesize superhydrides. **2021**, 118, 5
- 128 First-principles estimation of the superconducting transition temperature of a metallic hydrogen liquid. **2021**, 104, 0
- 127 Solid atomic hydrogen: Point defect formation and elastic stability. **2021**, 425, 127876
- 126 First-principles prediction of pressure dependent mechanical, electronic, optical, and superconducting state properties of NaC6: A potential high-Tc superconductor. **2022**, 33, 105182 0
- 125 Roles of optical phonons and logarithmic profile of electron-phonon coupling integration in superconducting Sc0.5Y0.5H6 superhydride under pressures. **2022**, 901, 163524 2
- 124 Bibliographie. **2020**, 235-249
- 123 Dispersion interactions in proposed covalent superhydride superconductors. **2022**, 105, 0
- 122 First-Principles Prediction of Superconductivity in Hole Doping of MgCN2. **2022**, 35, 339-343 0
- 121 Possibility for the anisotropic acoustic plasmons in LaH10 and their role in enhancement of the critical temperature of superconducting transition. **2022**, 48, 26-31 0
- 120 Prediction of ambient-pressure superconductivity in ternary hydride PdCuHx. **2022**, 131, 033903 1
- 119 The Retention and Study of High-Pressure-Induced Phases in High- and Room-Temperature Superconductors. 1

| | | |
|-----|--|---|
| 118 | Possible superconductivity at ~70 K in tin hydride SnH _x under high pressure. 2022 , 22, 100596 | 9 |
| 117 | High-Temperature Superconductivity in the Lanthanide Hydrides at Extreme Pressures. 2022 , 12, 874 | 2 |
| 116 | Prediction of high-temperature superconductivity in C ₂ /c ₂₄ solid hydrogen. 2022 , 105, | 0 |
| 115 | Enhanced superconductivity in C-S-H compounds at high pressure. 2022 , 105, | |
| 114 | High Temperature Superconductivity in the Candidate Phases of Solid Hydrogen.. 2022 , | |
| 113 | Compressed superhydrides: the road to room temperature superconductivity.. 2022 , | 1 |
| 112 | Phonons of metallic hydrogen with quantum Monte Carlo.. 2022 , 156, 044108 | 1 |
| 111 | Room Temperature Superconductivity: Exploration and Prospects by Material Science at Extreme Conditions. 2022 , 142, 89-92 | |
| 110 | High-Tc Superconducting Hydrides Formed by LaH ₂₄ and YH ₂₄ Cage Structures as Basic Blocks. 2021 , 33, 9501-9507 | 1 |
| 109 | Predicted structures and superconductivity of Li ₂ YH (= 5-10) under high pressure.. 2022 , | |
| 108 | Phonon-mediated superconductivity in two-dimensional hydrogenated phosphorus carbide: HPC.. 2022 , | 1 |
| 107 | Overview of the High-Pressure Beamlines at SPring-8 and the Latest Research Results. 2022 , 64, 33-40 | |
| 106 | Tuning chemical precompression: Theoretical design and crystal chemistry of novel hydrides in the quest for warm and light superconductivity at ambient pressures. 2022 , 131, 070901 | 4 |
| 105 | The Retention of High-Pressure-Induced High-Tc Superconductivity at Ambient Pressure. 1 | |
| 104 | Applied electric field instead of pressure in H-based superconductors. 2022 , 95, 1 | |
| 103 | Computational study of pressurized tetragonal magnesium hydride (MgH ₄) as a potential candidate for high-temperature superconducting material. 2022 , 9, 036001 | 0 |
| 102 | Crystal structure evolution and superconductivity of the ternary hydride CSH ₃ under pressure. 2022 , 105, | 0 |
| 101 | Carbonaceous sulfur hydride system: The strong-coupled room-temperature superconductor with a low value of Ginzburg-Landau parameter. 2022 , 131, 113901 | |

100 ??????????. **2022,**

99 Superconductivity in zirconium polyhydrides with T_c above 70 K. **2022**, 67, 907-907 1

98 Structural evolution and molecular dissociation of H₂S under high pressures.

97 Hot Hydride Superconductivity Above 550 K. **2022**, 2, 2

96 Theory of cross phenomena and their coefficients beyond Onsager theorem. **2022**, 10, 393-439 2

95 Structural Diversity and Superconductivity in AB_2 Ternary Hydrides under Pressure. 1

94 High-Temperature Superconducting Phase in Clathrate Calcium Hydride CaH₆ up to 215 K at a Pressure of 172 GPa.. *Physical Review Letters*, **2022**, 128, 167001 7.4 9

93 GW space-time method: Energy band gap of solid hydrogen. **2022**, 105,

92 Progress and prospects for cuprate high temperature superconductors under pressure. 1-63 0

91 Data_Sheet_1.docx. **2018,**

90 Stabilizing superconductivity of ternary metal pentahydride [Formula: see text] via electronic topological transitions under high pressure from first principles evolutionary algorithm.. **2022**, 12, 6700 0

89 Type I and Type II Superconductivity. **2022**, 123-146

88 Introduction. **2022**, 1-4

87 Classical Superconductors Materials, Structures and Properties. **2022**, 147-180

86 Noncuprate Superconductors: Materials, Structures and Properties. **2022**, 211-238

85 On the Mechanism of the Growth of Electronic Conductivity upon Reduction in the Excessive Deformation Volume of a Diluted Palladium-Hydrogen System. **2022**, 58, 65-69

84 Materials under high pressure: a chemical perspective. **2022**, 128, 1 2

83 Equation of state for generalized pressure. **2022**, 105, 1

| | | |
|----|---|---|
| 82 | Advances in the Synthesis and Superconductivity of Lanthanide Polyhydrides Under High Pressure. 2022 , 2, | |
| 81 | Chemical Templates That Assemble the Metal Superhydrides. | 0 |
| 80 | Quantum and temperature effects on the crystal structure of superhydride LaH10 : A path integral molecular dynamics study. 2022 , 105, | 0 |
| 79 | In-silico synthesis of lowest-pressure high-Tc ternary superhydrides. 2022 , 8, | 1 |
| 78 | Electronic and optical properties of crystalline nitrogen versus black phosphorus: A comparative first-principles study. 2022 , 105, | 1 |
| 77 | Structural phase transition and superconductivity of ytterbium under high pressure. 2022 , 105, | 1 |
| 76 | Superconductivity in ternary hydrides at high pressure. | 1 |
| 75 | Magnetic field screening in hydrogen-rich high-temperature superconductors. 2022 , 13, | 0 |
| 74 | Collective acoustic electronic excitations in LaH10 as a factor in boosting of the critical temperature of superconducting transition. 2022 , 4, | |
| 73 | Stress-induced high- T c superconductivity in solid molecular hydrogen. 2022 , 119, | 2 |
| 72 | Theoretical Methods for Structural Phase Transitions in Elemental Solids at Extreme Conditions: Statics and Dynamics. | |
| 71 | Superconductivity in compressed ternary alkaline boron hydrides. 2022 , 105, | 0 |
| 70 | Computational prediction of new stable superconducting magnesium hydrides at high-pressures. 2022 , 599, 1354052 | 0 |
| 69 | Two-gap superconductivity in a Janus MoSH monolayer. 2022 , 105, | 2 |
| 68 | High Tc superconductivity in layered hydrides XH15 (X = Ca, Sr, Y, La) under high pressures. 2022 , 17, | 1 |
| 67 | Effect of magnetic impurities on superconductivity in LaH 10. 2204038 | 2 |
| 66 | Prediction of Above-Room-Temperature Superconductivity in Lanthanide/Actinide Extreme Superhydrides. | 0 |
| 65 | Diverse densest ternary sphere packings. 2022 , 6, 075002 | 0 |

- 64 Superconductivity of Compressed H₂S in the Framework of the Generalized BCS equations. **2022**, 137, ○
- 63 A theoretical analysis of superconducting pairing in correlated metallic systems. **2022**, 642, 414147
- 62 Doping effects on the stability and superconductivity of penta-graphene-like ZrH₁₀ and HfH₁₀ under pressure. **2022**, 106,
- 61 High-Temperature Structural Stability of Intercalated Cerium Superhydride into Graphene Sheets at Low Pressure.
- 60 Pressure-induced high- T_c superconductivity in the ternary clathrate system Y-Ca-H. **2022**, 106, 2
- 59 Superconductivity of Carbon Compounds with Sodalite Structure. **2022**, 91, ○
- 58 Stability and distortion of fcc LaH₁₀ with path-integral molecular dynamics. **2022**, 106,
- 57 Superconducting Gap of Pressure Stabilized (Al_{0.5}Zr_{0.5})H₃ from Ab Initio Anisotropic Migdal-Eliashberg Theory. **2022**, 7, 28190-28197
- 56 On the Temperature- and Magnetic Field-Dependent Critical Current Density of Compressed Hydrogen Sulphide. ○
- 55 Pseudo pair potential between protons in dense hydrogen from first principles.
- 54 Universal Fermi velocity in highly compressed hydride superconductors. **2022**, 7, 058403 ○
- 53 Pressure-induced lattice-dynamical stability and superconductivity of ternary pentahydride MgNiH₅. ○
- 52 Chemically Assisted Precompression of Hydrogen Molecules in Alkaline-Earth Tetrahydrides. **2022**, 13, 8447-8454 ○
- 51 Crystal chemistry at high pressure. **2022**, ○
- 50 Possible high temperature superconducting transitions in disordered graphite obtained from room temperature deintercalated KC₈. **2023**, 201, 667-678 ○
- 49 Insights into the high-pressure behavior of solid bromine from hybrid density functional theory calculations. **2022**, 106, ○
- 48 Metallization in hydrogenlike systems under high pressure. **2022**, 106, ○
- 47 A first-principles study of theoretical superconductivity on RbH by doping without applied pressure. ○

- 46 Potential high-Tc superconductivity in YCeH and LaCeH under pressure. **2022**, 100873 1
- 45 First principles crystal structure prediction. **2022**, 100873 0
- 44 Stochastic path-integral approach for predicting the superconducting temperatures of anharmonic solids. **2022**, 106, 100873 0
- 43 Effect of hydrogen content on superconductivity in LaBH₂ compounds. **2022**, 43, 106060 0
- 42 Effect of Pressure on the Distribution of Electrons in a Cluster of H₂S. 0
- 41 Phenomena of hydrides. **2022**, 132, 180401 0
- 40 First-principles calculations on superconductivity and H-diffusion kinetics in MgBH₂ phases under pressures. **2022**, 100873 0
- 39 Metallization of hydrogen by intercalating ammonium ions in metal fcc lattices at lower pressure. **2022**, 121, 192601 0
- 38 Photocatalytic hydrogen generation using TiO₂: a state-of-the-art review. **2022**, 100873 1
- 37 Prediction of quaternary hydrides based on densest ternary sphere packings. **2022**, 6, 100873 0
- 36 Structural and electronic properties of Na-B-H compounds at high pressure. **2022**, 106, 100873 0
- 35 Chemical templates that assemble the metal superhydrides. **2022**, 100873 0
- 34 A synergistic effect of NH₃BH₃ and H₂ on their pressurization metallization: An Ab initio molecular dynamics study. **2023**, 218, 111972 0
- 33 High-pressure stability and superconductivity of vanadium hydrides*. **2023**, 651, 414603 0
- 32 High Temperature Superconductors. **2022**, 100873 0
- 31 High-Temperature Superconductivity in H₃S up to 253 K at a Pressure of 140 GPa by Doping Holes. **2022**, 126, 20702-20709 0
- 30 On synthesis, stability and superconductivity of ThNb₂H₁₂ under pressure: ab-initio calculations. **2022**, 111193 0
- 29 Modulations in Superconductors: Probes of Underlying Physics. 2209457 0

- 28 Superconductivity in Th₂ and Pu₂ Compounds under High-Pressure Conditions: A First-Principles Study. 2200452 ○
- 27 Optical conductivity of an anharmonic large polaron gas at weak coupling. **2022**, 106, ○
- 26 Superconductivity of graphenelike hydrogen in H₂He at high pressure. **2023**, 107, ○
- 25 Superconductivity in SrB₃C₃ clathrate. **2023**, 5, ○
- 24 Generic rules for achieving room-temperature superconductivity in ternary hydrides with clathrate structures. **2023**, 107, ○
- 23 Acoustic Plasmons in Nickel and Its Modification upon Hydrogen Uptake. **2023**, 13, 141 ○
- 22 Pressure-induced high-temperature superconductivity in ternary YZr₂ compounds. **2023**, 25, 5237-5243 ○
- 21 Stability conditions for a large anharmonic bipolaron. **2023**, 107, ○
- 20 External pressure effects on superfluid density of isotropic s-wave superconductors. **2023**, 2431, 012043 ○
- 19 Ab initio path integral Monte Carlo simulations of hydrogen snapshots at warm dense matter conditions. **2023**, 107, 2
- 18 Hellmann-Feynman theorem and internal pressure for atoms, molecules and plasmas under pressure. ○
- 17 Superionicity of H₂ in LaH₁₀ superhydride. **2023**, 107, ○
- 16 First-principles estimation of low-pressure superconductivity in KC₂H₈ ternary hydride. ○
- 15 Bipolaronic High-Temperature Superconductivity. **2023**, 13, ○
- 14 Superconducting state of the van der Waals layered PdH₂ structure at high pressure. **2023**, ○
- 13 Superconducting H₇ chain in gallium hydrides at high pressure. **2023**, 25, 7223-7228 ○
- 12 Enhanced superconducting transition temperature via alloying In, Sn and Sb in PbH₄ by using first-principles calculations. **2023**, 58, 3996-4004 ○
- 11 Ab-initio study of C_{2/c}, Cmca-12, Pbcn and P6122 phases of solid hydrogen. **2023**, 655, 414772 ○

- 10 A Comprehensive Review of High-Pressure Laser-Induced Materials Processing, Part III: Laser Reactive Synthesis within Diamond Anvil Cells. **2023**, 7, 57
- 9 Evidence of near-ambient superconductivity in a N-doped lutetium hydride. **2023**, 615, 244-250
- 8 Allegations of Scientific Misconduct Mount as Physicist Makes His Biggest Claim Yet. 16,
- 7 Hopes raised for room-temperature superconductivity, but doubts remain. **2023**, 615, 221-222
- 6 Quantum phase diagram of high-pressure hydrogen.
- 5 Superconductivity above 70 K observed in lutetium polyhydrides. **2023**, 66,
- 4 Quantitative spin-dependent electron-electron interaction to calculate the superconducting parameters and λ **2023**, 107,
- 3 Superconductivity feels the heat. **2023**, 22, 404-404
- 2 Colloquium : Room temperature superconductivity: The roles of theory and materials design. **2023**, 95,
- 1 Toward using collective x-ray Thomson scattering to study CII demixing and hydrogen metallization in warm dense matter conditions. **2023**, 30,