

# Substitutionally doped phosphorene: electronic proper

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Citation Report

#	ARTICLE	IF	CITATIONS
1	Structural and Electrical Irregularities Caused by Selected Dopants in Black-Phosphorus. ECS Journal of Solid State Science and Technology, 2016, 5, Q3026-Q3032.	0.9	19
2	Dopants induced structural and optical anomalies of anisotropic edges of black phosphorous thin films and crystals. Ceramics International, 2016, 42, 13113-13127.	2.3	17
3	Tunable electronic structures of germanium monochalcogenide nanosheets via light non-metallic atom functionalization: a first-principles study. Physical Chemistry Chemical Physics, 2016, 18, 23080-23088.	1.3	18
4	Tuning anisotropic electronic transport properties of phosphorene via substitutional doping. Physical Chemistry Chemical Physics, 2016, 18, 25869-25878.	1.3	38
5	Review on charge transfer and chemical activity of TiO <sub>2</sub> : Mechanism and applications. Progress in Surface Science, 2016, 91, 183-202.	3.8	76
6	Phosphorene and Phosphorene-Based Materials – Prospects for Future Applications. Advanced Materials, 2016, 28, 8586-8617.	11.1	378
7	Nitrogen induced phosphorene formation on the boron phosphide (111) surface: a density functional theory study. RSC Advances, 2016, 6, 108621-108626.	1.7	2
8	A density-functional-theory-based finite element model to study the mechanical properties of zigzag phosphorene nanotubes. Physica E: Low-Dimensional Systems and Nanostructures, 2017, 88, 272-278.	1.3	20
9	On the stability characteristics of zigzag phosphorene nanotubes: A finite element investigation. Journal of Alloys and Compounds, 2017, 702, 388-398.	2.8	13
10	Magnetic engineering in 3d transition metals on phosphorene by strain. Physics Letters, Section A: General, Atomic and Solid State Physics, 2017, 381, 1236-1240.	0.9	16
11	Tensile and compressive behaviors of prestrained single-layer black phosphorus: a molecular dynamics study. Nanoscale, 2017, 9, 3609-3619.	2.8	16
12	Noble metal atoms doped phosphorene: electronic properties and gas adsorption ability. Materials Research Express, 2017, 4, 045703.	0.8	20
13	Electrical and optical properties of NO and H <sub>2</sub> S adsorption on Arsenic Phosphorus. , 2017, , .		0
14	A density functional theory-based finite element method to study the vibrational characteristics of zigzag phosphorene nanotubes. Applied Physics A: Materials Science and Processing, 2017, 123, 1.	1.1	6
15	DFT coupled with NEGF study of ultra-sensitive HCN and HNC gases detection and distinct $I$ - $V$ response based on phosphorene. Physical Chemistry Chemical Physics, 2017, 19, 30852-30860.	1.3	26
16	Quantum effect enhanced magnetism of C-doped phosphorene nanoribbons: first-principles calculations. Physical Chemistry Chemical Physics, 2017, 19, 28354-28359.	1.3	13
17	Recent advances in black phosphorus-based photonics, electronics, sensors and energy devices. Materials Horizons, 2017, 4, 997-1019.	6.4	296
18	Strain engineering on transmission carriers of monolayer phosphorene. Journal of Physics Condensed Matter, 2017, 29, 465501.	0.7	5

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19	First-principles study on electronic structures and magnetic properties of Eu-doped phosphorene. <i>Superlattices and Microstructures</i> , 2017, 111, 816-823.	1.4	8
20	2D Black Phosphorus: from Preparation to Applications for Electrochemical Energy Storage. <i>Advanced Science</i> , 2018, 5, 1700491.	5.6	174
21	Strongly anisotropic RKKY interaction in monolayer black phosphorus. <i>Journal of Magnetism and Magnetic Materials</i> , 2018, 456, 307-315.	1.0	31
22	Phosphorene as a Template Material for Physisorption of DNA/RNA Nucleobases and Resembling of Base Pairs: A Cluster DFT Study and Comparisons with Graphene. <i>Journal of Physical Chemistry C</i> , 2018, 122, 4870-4880.	1.5	55
23	Sulfur-Doped Black Phosphorus Field-Effect Transistors with Enhanced Stability. <i>ACS Applied Materials &amp; Interfaces</i> , 2018, 10, 9663-9668.	4.0	93
24	Defects and Low-Frequency Noise in Irradiated Black Phosphorus MOSFETs With HfO <sub>2</sub> Gate Dielectrics. <i>IEEE Transactions on Nuclear Science</i> , 2018, 65, 1227-1238.	1.2	39
25	Tuning electronic, magnetic, and transport properties of blue phosphorene by substitutional doping: a first-principles study. <i>Journal of Computational Electronics</i> , 2018, 17, 499-513.	1.3	37
26	In-Plane Black Phosphorus/Dicobalt Phosphide Heterostructure for Efficient Electrocatalysis. <i>Angewandte Chemie</i> , 2018, 130, 2630-2634.	1.6	55
27	In-Plane Black Phosphorus/Dicobalt Phosphide Heterostructure for Efficient Electrocatalysis. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 2600-2604.	7.2	209
28	An insight into the dopant selection for CeO <sub>2</sub> -based resistive-switching memory system: a DFT and experimental study. <i>Applied Nanoscience (Switzerland)</i> , 2018, 8, 839-851.	1.6	16
29	Thermal transport in phosphorene and phosphorene-based materials: A review on numerical studies. <i>Chinese Physics B</i> , 2018, 27, 036501.	0.7	23
30	Electric field improved the sensitivity of CO on substitutionally doped antimonene. <i>Applied Surface Science</i> , 2018, 427, 388-395.	3.1	77
31	Co-doped phosphorene: Enhanced sensitivity of CO gas sensing. <i>International Journal of Modern Physics B</i> , 2018, 32, 1850068.	1.0	10
32	Applications of Phosphorene and Black Phosphorus in Energy Conversion and Storage Devices. <i>Advanced Energy Materials</i> , 2018, 8, 1702093.	10.2	385
33	Theoretical study of the CO, NO, and N <sub>2</sub> adsorptions on Li-decorated graphene and boron-doped graphene. <i>Canadian Journal of Chemistry</i> , 2018, 96, 30-39.	0.6	6
34	Tunable transport and optoelectronic properties of monolayer black phosphorus by grafting PdCl <sub>2</sub> quantum dots. <i>RSC Advances</i> , 2018, 8, 35226-35236.	1.7	5
35	Effect of metal doping on carbon monoxide adsorption on phosphorene: A first-principles study. <i>Superlattices and Microstructures</i> , 2018, 124, 168-175.	1.4	25
36	A First-Principles Study on Hydrogen Sensing Properties of Pristine and Mo-Doped Graphene. <i>Journal of Nanotechnology</i> , 2018, 2018, 1-5.	1.5	15

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37	Exchange interaction of magnetic impurities in a biased bilayer phosphorene nanoribbon. Physical Review B, 2018, 98, .	1.1	11
38	Observation of ferromagnetism in black phosphorus nanosheets with high magnetization by liquid exfoliation. Solid State Communications, 2018, 281, 1-5.	0.9	15
39	First-principles study on electronic and magnetic and optical properties of rare-earth metals (RE = La, Tj ETQq0 0 0 rgBT /Overlock 10 Tf	0.3	4
40	Enhanced Efficiency of Flexible GaN/Perovskite Solar Cells Based on the Piezo-Phototronic Effect. ACS Applied Energy Materials, 2018, 1, 3063-3069.	2.5	22
41	Anisotropic electronic heat capacity and electrical conductivity of monolayer biased impurity-infected black phosphorus. Solid State Communications, 2018, 280, 39-44.	0.9	26
42	Partially-oxidized phosphorene sensor for the detection of sub-nano molar concentrations of nitric oxide: a first-principles study. Physical Chemistry Chemical Physics, 2019, 21, 19083-19091.	1.3	6
43	Loading and release of anticancer drug from phosphorene as a template material with high efficient carrier: From vacuum to cell membrane. Journal of Molecular Liquids, 2019, 291, 111346.	2.3	26
44	Enhanced photocatalytic performance of black phosphorene by isoelectronic co-dopants. Inorganic Chemistry Frontiers, 2019, 6, 2369-2378.	3.0	12
45	A first-principles study of Cu and Al doping in ZrO2 for RRAM device applications. Vacuum, 2019, 168, 108842.	1.6	24
46	Electronic and structural properties of black phosphorene doped with Si, B and N. Physics Letters, Section A: General, Atomic and Solid State Physics, 2019, 383, 125945.	0.9	16
47	Nitrogen-based gas molecule adsorption of monolayer phosphorene under metal functionalization. Scientific Reports, 2019, 9, 12498.	1.6	25
48	Ultrahigh-sensitive gas sensors based on doped phosphorene: A first-principles investigation. Applied Surface Science, 2019, 497, 143660.	3.1	35
49	Transport and photogalvanic properties of covalent functionalized monolayer black phosphorus. New Journal of Chemistry, 2019, 43, 377-385.	1.4	10
50	A first-principles investigation of spintronics of nitrophosphorene doped with 3d transition metals. Journal of Applied Physics, 2019, 125, 233902.	1.1	2
51	Adsorption of thiophene on metal doped Phosphorene; a density functional theory study. Materials Research Express, 2019, 6, 1250k4.	0.8	3
52	Penta-Graphene as a Potential Gas Sensor for NOx Detection. Nanoscale Research Letters, 2019, 14, 306.	3.1	52
53	First-Principles Study of Gas Molecule Adsorption on C-doped Zigzag Phosphorene Nanoribbons. Coatings, 2019, 9, 763.	1.2	11
54	Design of spin-filtering devices with rectifying effects and negative differential resistance using armchair phosphorene nanoribbon. Applied Physics A: Materials Science and Processing, 2019, 125, 1.	1.1	5

#	ARTICLE	IF	CITATIONS
55	Electrically-Transduced Chemical Sensors Based on Two-Dimensional Nanomaterials. <i>Chemical Reviews</i> , 2019, 119, 478-598.	23.0	521
56	Symmetry effect on the mechanism of the optical absorption of phosphorene quantum dots. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2019, 107, 137-141.	1.3	3
57	Superior Sensing Properties of Black Phosphorus as Gas Sensors: A Case Study on the Volatile Organic Compounds. <i>Advanced Theory and Simulations</i> , 2019, 2, 1800103.	1.3	53
58	Effect of C and O dopant atoms on the electronic properties of black phosphorus nanotubes. <i>Computational Materials Science</i> , 2019, 156, 292-300.	1.4	13
59	First-principles study of methanol adsorption on heteroatom-doped phosphorene. <i>Chinese Chemical Letters</i> , 2019, 30, 207-210.	4.8	15
60	Tailoring magnetic characteristics of phosphorene by the doping of Ce and Ti: A DFT study. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2019, 106, 352-356.	1.3	5
61	Adsorption of rare gases on pristine and doped phosphorene. <i>Applied Surface Science</i> , 2020, 504, 144326.	3.1	12
62	Transition metal doped arsenene: Promising materials for gas sensing, catalysis and spintronics. <i>Applied Surface Science</i> , 2020, 506, 144660.	3.1	28
63	Improvement of H <sub>2</sub> O detection in armchair phosphorene nanoribbons by introducing dopant. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2020, 117, 113839.	1.3	0
64	Selective adsorption of harmful molecules on zigzag phosphorene nanoribbon for sensing applications. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2020, 117, 113838.	1.3	5
65	Enhancing Na-Ion Storage at Subzero Temperature via Interlayer Confinement of Sn <sup>2+</sup> . <i>ACS Nano</i> , 2020, 14, 13765-13774.	7.3	22
66	Transition metal (TM=Cr, Mn, Fe, Co, Ni) doped phosphorene as anode material for lithium-ion batteries predicted from first-principle calculations. <i>Computational Materials Science</i> , 2020, 183, 109877.	1.4	11
67	Substitutional doped GeSe: tunable oxidative states with strain engineering. <i>Journal of Materials Chemistry C</i> , 2020, 8, 13655-13667.	2.7	16
68	First-principle study of the adsorption of volatile sulfur compounds on black phosphorene nanosheets doped with some transition metals. <i>Monatshefte für Chemie</i> , 2020, 151, 1501-1510.	0.9	2
69	A first-principles description of the stability of transition-metal doped phosphorene nanosheets. <i>Surfaces and Interfaces</i> , 2020, 21, 100786.	1.5	5
70	Defect Engineering of 2D Materials for Electrochemical Energy Storage. <i>Advanced Materials Interfaces</i> , 2020, 7, 2000494.	1.9	19
71	Uptake of formaldehyde onto doped phosphorene nanosheets: A cluster DFT study of single and co-adsorption states. <i>Journal of Alloys and Compounds</i> , 2020, 831, 154885.	2.8	26
72	Theoretical insights into hydrogen sensing capabilities of black phosphorene modified through ZnO doping and decoration. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 16918-16928.	3.8	35

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73	Embedded carbon nanowire in black phosphorene and C-doping: the rule to control electronic properties. <i>Nanotechnology</i> , 2020, 31, 275201.	1.3	7
74	Frontiers of graphene and 2D material-based gas sensors for environmental monitoring. <i>2D Materials</i> , 2020, 7, 032002.	2.0	103
75	Removal of arsenic from water using iron-doped phosphorene nanoadsorbents: A theoretical DFT study with solvent effects. <i>Journal of Molecular Liquids</i> , 2020, 307, 112958.	2.3	23
76	First-principles study of CO and NO adsorption on pristine and transition metal doped blue phosphorene. <i>Vacuum</i> , 2020, 179, 109503.	1.6	28
77	Effect of surface oxidation on the electronic transport properties of phosphorene gas sensors: a computational study. <i>RSC Advances</i> , 2020, 10, 6893-6899.	1.7	8
78	Gas adsorption and light interaction mechanism in phosphorene-based field-effect transistors. <i>Physical Chemistry Chemical Physics</i> , 2020, 22, 5949-5958.	1.3	14
79	Electronic and transport properties of zigzag phosphorene nanoribbons with nonmetallic atom terminations. <i>RSC Advances</i> , 2020, 10, 1400-1409.	1.7	7
80	Property–Activity Relationship of Black Phosphorus at the Nano–Bio Interface: From Molecules to Organisms. <i>Chemical Reviews</i> , 2020, 120, 2288-2346.	23.0	158
81	Defective Phosphorene as a Promising Anchoring Material for Lithium–Sulfur Batteries. <i>Journal of Physical Chemistry C</i> , 2020, 124, 2739-2746.	1.5	39
82	Exploring the Nature of Interaction and Stability between Water-Soluble Arsenic Pollutants and Metal–Phosphorene Hybrids: A Density Functional Theory Study. <i>Journal of Physical Chemistry A</i> , 2020, 124, 3662-3671.	1.1	9
83	Thermodynamic stability and vibrational anharmonicity of black phosphorene - beyond quasi-harmonic analysis. <i>Journal of Physics Condensed Matter</i> , 2020, 32, 335402.	0.7	2
84	Sensing Applications of Atomically Thin Group IV Carbon Siblings Xenos: Progress, Challenges, and Prospects. <i>Advanced Functional Materials</i> , 2021, 31, 2005957.	7.8	37
85	Structural dependence of electrosynthesized cobalt phosphide/black phosphorus pre-catalyst for oxygen evolution in alkaline media. <i>Nanoscale</i> , 2021, 13, 7381-7388.	2.8	21
86	Recent advances in 2D black phosphorus based materials for gas sensing applications. <i>Journal of Materials Chemistry C</i> , 2021, 9, 3773-3794.	2.7	51
87	Blue-AsP monolayer as a promising anode material for lithium- and sodium-ion batteries: a DFT study. <i>Physical Chemistry Chemical Physics</i> , 2021, 23, 5143-5151.	1.3	28
88	Electronic, magnetic and optical properties of blue phosphorene doped with Y, Zr, Nb and Mo: A first-principles study. <i>Thin Solid Films</i> , 2021, 720, 138523.	0.8	12
90	Recent Advances in Electrical Doping of 2D Semiconductor Materials: Methods, Analyses, and Applications. <i>Nanomaterials</i> , 2021, 11, 832.	1.9	36
91	Recent Development of Gas Sensing Platforms Based on 2D Atomic Crystals. <i>Research</i> , 2021, 2021, 9863038.	2.8	29

#	ARTICLE	IF	CITATIONS
92	2D Materials for Nonlinear Photonics and Electro-Optical Applications. <i>Advanced Materials Interfaces</i> , 2021, 8, 2100367.	1.9	30
93	Recent advancements of two-dimensional transition metal dichalcogenides and their applications in electrocatalysis and energy storage. <i>Emergent Materials</i> , 2021, 4, 951-970.	3.2	24
94	Behaviour of induced states of substitutional and adatom impurity doping on electronic transport properties of single-layer black phosphorus. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2021, 130, 114701.	1.3	1
95	Preparation of Ni <sub>2</sub> P Decorated Black Phosphorus Nanosheets Supported on Two-Dimensional Zirconium Phosphate and Its Catalysis for Hydrodesulfurization of Dibenzothiophene. <i>ChemistrySelect</i> , 2021, 6, 5899-5905.	0.7	2
96	Experimental and molecular dynamics studies of an ultra-fast sequential hydrogen plasma process for fabricating phosphorene-based sensors. <i>Scientific Reports</i> , 2021, 11, 16076.	1.6	6
97	Coordination chemistry of elemental phosphorus. <i>Coordination Chemistry Reviews</i> , 2021, 441, 213927.	9.5	65
98	Highly selective adsorption of SO <sub>2</sub> on WX <sub>2</sub> (X = S, Se, Te) monolayers and the effect of strain engineering: a DFT study. <i>Journal of Computational Electronics</i> , 2021, 20, 1874-1883.	1.3	1
99	Chemical defect-dependent resistive switching characterization in CeO <sub>2</sub> thin films. <i>Materials Science in Semiconductor Processing</i> , 2022, 137, 106177.	1.9	1
100	Anisotropic Raman characterization and electrical properties of black phosphorus. <i>Wuli Xuebao/Acta Physica Sinica</i> , 2021, 70, 037801-037801.	0.2	1
101	Functionalization and Doping of Black Phosphorus. <i>Engineering Materials</i> , 2020, , 1-30.	0.3	11
102	Modifying the sensibility of nonmetal-doped phosphorene by local or global properties. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 4899-4906.	1.3	7
104	Recent development in emerging phosphorene based novel materials: Progress, challenges, prospects and their fascinating sensing applications. <i>Progress in Solid State Chemistry</i> , 2022, 65, 100336.	3.9	18
105	Facile and rapid exfoliation of black phosphorus assisted by acetic acid. <i>Journal of Materials Science: Materials in Electronics</i> , 0, , 1.	1.1	1
106	Adsorption of toxic H <sub>2</sub> S, CO and NO molecules on pristine and transition metal doped AsP monolayer by first-principles calculations. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2022, 138, 115109.	1.3	8
107	Interfacial electrical properties and transport properties of monolayer black AsP alloy in contact with metal. <i>Materials Today Communications</i> , 2022, 31, 103262.	0.9	2
108	Metal doped black phosphorene for gas sensing and catalysis: A first-principles perspective. <i>Applied Surface Science</i> , 2022, 586, 152743.	3.1	9
109	First-principles study on N <sub>2</sub> , H <sub>2</sub> , O <sub>2</sub> , NO, NO <sub>2</sub> , CO, CO <sub>2</sub> , and SO <sub>2</sub> gas adsorption properties of the Sc <sub>2</sub> CF <sub>2</sub> monolayer. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 2022, 141, 115162.	1.3	7
110	Effects of electric field and biaxial strain on the (NO <sub>2</sub> , NO, O <sub>2</sub> , and SO <sub>2</sub> ) gas adsorption properties of Sc <sub>2</sub> CO <sub>2</sub> monolayer. <i>Superlattices and Microstructures</i> , 2022, 163, 107135.	1.4	15

#	ARTICLE	IF	CITATIONS
111	Photoelectronic properties and devices of 2D Xenos. Journal of Materials Science and Technology, 2022, 126, 44-59.	5.6	7
112	Sensing properties of nonmetal doped blue phosphorene toward $\text{NO}$ and $\text{NO}_2$ molecules: A first-principles study. International Journal of Quantum Chemistry, 2022, 122, .	1.0	4
113	First-principles study of $\text{CH}_4$ adsorption on transition metal doped phosphorene with Stone-Wales defects. Physica E: Low-Dimensional Systems and Nanostructures, 2022, 142, 115313.	1.3	2
114	Enhanced Third Generation Semiconductor Material-Based Solar Cell Efficiency by Piezo-Phototronic Effect. East European Journal of Physics, 2022, , 70-76.	0.1	0
115	An overview on room-temperature chemiresistor gas sensors based on 2D materials: Research status and challenge. Composites Part B: Engineering, 2023, 248, 110378.	5.9	21
116	Adsorption of $\text{NO}$ gas molecule on the vacancy defected and transition metal doped antimonene: A first-principles study. Vacuum, 2023, 207, 111654.	1.6	7
117	Choloromethane and bromomethane adsorption studies on hex-star phosphorene nanoribbon – A DFT insight. Computational and Theoretical Chemistry, 2023, 1219, 113961.	1.1	24
118	Adsorption of aromatic molecules on a black phosphorene surface: a first-principles study. New Journal of Chemistry, 2023, 47, 1842-1851.	1.4	1
119	Graphene based Nano Gas Sensors: Mechanistic Study. Advances in Natural Sciences: Nanoscience and Nanotechnology, 2022, 13, 043002.	0.7	1
120	Investigation of adsorption behaviors, and electronic and magnetic properties for small gas molecules adsorbed on Pt-doped arsenene by density functional calculations. RSC Advances, 2023, 13, 3807-3817.	1.7	6
121	Pristine and X-doped ( $\text{X}=\text{B}, \text{N}$ ) phosphorene as platform materials to the removal of phenol: A theoretical insight. Journal of Molecular Liquids, 2023, 374, 121280.	2.3	4
122	First principles study on structural, vibrational, electronic and elastic properties of 2D alkaline-earth carbides as a metallic material. Synthetic Metals, 2023, 293, 117281.	2.1	0
126	The Elemental Layered Solids: Group IV and V Materials. Engineering Materials, 2023, , 69-101.	0.3	0