Andrey Chaves

List of Publications by Year
in descending order

92 papers	4,445 citations	185998 28 h-index	106150 65 g-index
95 all docs	95 docs citations	95 times ranked	5709 citing authors

#	Article	IF	Citations
1	Polaritons in layered two-dimensional materials. Nature Materials, 2017, 16, 182-194.	13.3	963
2	Bandgap engineering of two-dimensional semiconductor materials. Npj 2D Materials and Applications, 2020, 4, .	3.9	528
3	Coulomb engineering of the bandgap and excitons in two-dimensional materials. Nature Communications, 2017, 8, 15251.	5.8	526
4	Momentum-space indirect interlayer excitons in transition-metal dichalcogenide van der Waals heterostructures. Nature Physics, 2018, 14, 801-805.	6.5	229
5	Infrared fingerprints of few-layer black phosphorus. Nature Communications, 2017, 8, 14071.	5.8	228
6	Energy levels of triangular and hexagonal graphene quantum dots: A comparative study between the tight-binding and Dirac equation approach. Physical Review B, 2011, 84, .	1.1	148
7	Determination of layer-dependent exciton binding energies in few-layer black phosphorus. Science Advances, 2018, 4, eaap9977.	4.7	122
8	Wave-packet dynamics and valley filter in strained graphene. Physical Review B, 2010, 82, .	1.1	108
9	Anisotropic exciton Stark shift in black phosphorus. Physical Review B, 2015, 91, .	1.1	92
10	Klein tunneling in single and multiple barriers in graphene. Semiconductor Science and Technology, 2010, 25, 033002.	1.0	89
11	Electronic and optical properties of a circular graphene quantum dot in a magnetic field: Influence of the boundary conditions. Physical Review B, 2011, 84, .	1.1	84
12	Exciton <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>g</mml:mi></mml:math> factors of van der Waals heterostructures from first-principles calculations. Physical Review B, 2020, 101, .	1.1	82
13	Simplified model for the energy levels of quantum rings in single layer and bilayer graphene. Physical Review B, 2010, 81, .	1.1	75
14	Geometry and edge effects on the energy levels of graphene quantum rings: A comparison between tight-binding and simplified Dirac models. Physical Review B, 2014, 89, .	1.1	58
15	Conditions for nonmonotonic vortex interaction in two-band superconductors. Physical Review B, 2011, 83, .	1.1	52
16	Luminescent Emission of Excited Rydberg Excitons from Monolayer WSe₂. Nano Letters, 2019, 19, 2464-2471.	4.5	51
17	Wave packet dynamics in semiconductor quantum rings of finite width. Physical Review B, 2009, 80, .	1.1	44
18	Valley filtering using electrostatic potentials in bilayer graphene. Physical Review B, 2015, 92, .	1.1	44

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19	Analytical study of the energy levels in bilayer graphene quantum dots. Carbon, 2014, 78, 392-400.	5.4	36
20	Theoretical investigation of electron-hole complexes in anisotropic two-dimensional materials. Physical Review B, 2016, 93, .	1.1	36
21	Wavepacket scattering of Dirac and SchrÃ¶dinger particles on potential and magnetic barriers. Journal of Physics Condensed Matter, 2011, 23, 275801.	0.7	34
22	Prediction of hyperbolic exciton-polaritons in monolayer black phosphorus. Nature Communications, 2021, 12, 5628.	5.8	33
23	Vortex-vortex interaction in bulk superconductors: Ginzburg-Landau theory. Physical Review B, 2011, 83, .	1.1	32
24	The Split-Operator Technique for the Study of Spinorial Wavepacket Dynamics. Communications in Computational Physics, 2015, 17, 850-866.	0.7	31
25	Stark shift of excitons and trions in two-dimensional materials. Physical Review B, 2018, 98, .	1.1	31
26	Topological confinement in graphene bilayer quantum rings. Applied Physics Letters, 2010, 96, .	1.5	30
27	All-strain based valley filter in graphene nanoribbons using snake states. Physical Review B, 2016, 94, .	1.1	30
28	Wave-packet scattering on graphene edges in the presence of a pseudomagnetic field. Physical Review B, 2012, 86, .	1.1	28
29	Enhancing and Controlling Plasmons in Janus MoSSeâ€"Graphene Based van der Waals Heterostructures. Journal of Physical Chemistry C, 2019, 123, 16373-16379.	1.5	26
30	Electrostatics of electron-hole interactions in van der Waals heterostructures. Physical Review B, 2018, 97, .	1.1	25
31	Energy levels of bilayer graphene quantum dots. Physical Review B, 2015, 92, .	1.1	24
32	Unusual quantum confined Stark effect and Aharonov-Bohm oscillations in semiconductor quantum rings with anisotropic effective masses. Physical Review B, 2017, 95, .	1.1	24
33	Magnetic field dependence of energy levels in biased bilayer graphene quantum dots. Physical Review B, 2016, 93, .	1.1	22
34	Efficient Ab Initio Modeling of Dielectric Screening in 2D van der Waals Materials: Including Phonons, Substrates, and Doping. Journal of Physical Chemistry C, 2020, 124, 11609-11616.	1.5	22
35	Electrical control of excitons in van der Waals heterostructures with type-II band alignment. Physical Review B, 2018, 98, .	1.1	21
36	Braess paradox at the mesoscopic scale. Physical Review B, 2013, 88, .	1.1	20

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37	Boosting quantum yields in two-dimensional semiconductors via proximal metal plates. Nature Communications, 2021, 12, 7095.	5.8	20
38	Bound vortex states and exotic lattices in multicomponent Bose-Einstein condensates: The role of vortex-vortex interaction. Physical Review A, 2015, 91, .	1.0	17
39	Wave-packet dynamics in multilayer phosphorene. Physical Review B, 2019, 99, .	1.1	17
40	Spontaneous symmetry breaking in vortex systems with two repulsive lengthscales. Scientific Reports, 2015, 5, 15569.	1.6	15
41	Substrate effects on the exciton fine structure of black phosphorus quantum dots. Physical Review B, 2017, 96, .	1.1	15
42	Interlayer Excitons in Transitionâ€Metal Dichalcogenide Heterobilayers. Physica Status Solidi (B): Basic Research, 2019, 256, 1900308.	0.7	15
43	Valley filtering in graphene due to substrate-induced mass potential. Journal of Physics Condensed Matter, 2017, 29, 215502.	0.7	14
44	Magnetic properties of bilayer graphene quantum dots in the presence of uniaxial strain. Physical Review B, 2017, 96, .	1.1	14
45	<i>Ab initio</i> and semiempirical modeling of excitons and trions in monolayer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>TiS</mml:mi><mml:mn>3</mml:mn></mml:msub></m Physical Review B, 2018, 98, .	1.1	14
46	Acoustically Driven Stark Effect in Transition Metal Dichalcogenide Monolayers. ACS Nano, 2021, 15, 15371-15380.	7.3	13
47	Theoretical investigation of excitons in type-I and type-IISiâˆ•Si1âˆ’xGexquantum wires. Physical Review B, 2006, 74, .	1.1	12
48	Eccentricity effects on the quantum confinement in double quantum rings. Solid State Communications, 2011, 151, 1200-1204.	0.9	12
49	Electron collimation at van der Waals domain walls in bilayer graphene. Physical Review B, 2019, 100, .	1.1	12
50	The role of surface roughness on the electron confinement in semiconductor quantum rings. Microelectronics Journal, 2008, 39, 455-458.	1.1	10
51	Electric and magnetic field effects on the excitonic properties of elliptic coreâ€“multishell quantum wires. Journal of Physics Condensed Matter, 2013, 25, 485501.	0.7	10
52	Hexagonal-shaped monolayer-bilayer quantum disks in graphene: A tight-binding approach. Physical Review B, 2016, 94, .	1.1	10
53	Interfacial confinement in core-shell nanowires due to high dielectric mismatch. Applied Physics Letters, 2012, 100, .	1.5	9
54	Conductance maps of quantum rings due to a local potential perturbation. Journal of Physics Condensed Matter, 2013, 25, 495301.	0.7	9

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55	Energy shift and conduction-to-valence band transition mediated by a time-dependent potential barrier in graphene. Physical Review B, 2015, 92, .	1.1	9
56	Interferometry of Klein tunnelling electrons in graphene quantum rings. Journal of Applied Physics, 2017, 121, 024302.	1.1	9
57	Theoretical Overview of Black Phosphorus. , 2017, , 381-412.		9
58	Two-dimensional semiconductors host high-temperature exotic state. Nature, 2019, 574, 39-40.	13.7	9
59	Curvature effects on the electronic and transport properties of semiconductor films. Physica E: Low-Dimensional Systems and Nanostructures, 2018, 99, 304-309.	1.3	8
60	Quantum tunneling between bent semiconductor nanowires. Journal of Applied Physics, 2015, 118, 174301.	1.1	7
61	Charging energy spectrum of black phosphorus quantum dots. Journal Physics D: Applied Physics, 2017, 50, 305103.	1.3	7
62	Stable Janus TaSe2 single-layers via surface functionalization. Applied Surface Science, 2021, 538, 148064.	3.1	7
63	Excitonic properties of type-I and type-II Siâˆ•Si1âˆ'xGex quantum wells. Journal of Applied Physics, 2007, 101, 113703.	1.1	6
64	Electronic confinement in graphene quantum rings due to substrate-induced mass radial kink. Journal of Physics Condensed Matter, 2016, 28, 505501.	0.7	6
65	Electronic and transport properties of anisotropic semiconductor quantum wires. Physical Review B, 2020, 102, .	1.1	6
66	Signatures of subband excitons in few-layer black phosphorus. Physical Review B, 2021, 103, .	1.1	6
67	Effect of zitterbewegung on the propagation of wave packets in ABC-stacked multilayer graphene: an analytical and computational approach. Journal of Physics Condensed Matter, 2021, 33, 095503.	0.7	6
68	Influence of graded interfaces on the exciton energy of type-I and type-II Si/Si1-x Gex quantum wires. Journal of Materials Science, 2007, 42, 2314-2317.	1.7	5
69	Grading effects in semiconductor nanowires with longitudinal heterostructures. Physical Review B, 2008, 78, .	1.1	5
70	Electronic properties of superlattices on quantum rings. Journal of Physics Condensed Matter, 2017, 29, 165501.	0.7	5
71	Magnetic field induced vortices in graphene quantum dots. Journal of Physics Condensed Matter, 2020, 32, 155501.	0.7	5
72	<i>Zitterbewegung</i> of MoirÃ© Excitons in Twisted <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>MoS</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></r Heterobilayers. Physical Review Letters, 2021, 127, 106801.	2.9	5

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73	Electronic states above a helium film suspended on a ring-shaped substrate. Physical Review B, 2008, 77, .	1.1	4
74	Probing the structure and composition of van der Waals heterostructures using the nonlocality of Dirac plasmons in the terahertz regime. 2D Materials, 2021, 8, 015014.	2.0	4
75	Gap opening in graphene nanoribbons by application of simple shear strain and in-plane electric field. Journal of Physics Condensed Matter, 2021, 33, 065503.	0.7	4
76	Scattering of Dirac Electrons by Randomly Distributed Nitrogen Substitutional Impurities in Graphene. Applied Sciences (Switzerland), 2016, 6, 256.	1.3	3
77	Superconductor-ferromagnet bilayer under external drive: The role of vortex-antivortex matter. Journal of Applied Physics, 2016, 119, .	1.1	3
78	Quantum confinement of carriers in heterostructured GaAs/GaP quantum wires. Microelectronics Journal, 2005, 36, 1049-1051.	1.1	2
79	Publisherâ€™s Note: Vortex-vortex interaction in bulk superconductors: Ginzburg-Landau theory [Phys. Rev. BPLRBAQ0556-280510.1103/PhysRevB.83.05451683, 054516 (2011)]. Physical Review B, 2011, 83, .	1.1	2
80	Wave Packet Dynamical Calculations for Carbon Nanostructures. NATO Science for Peace and Security Series B: Physics and Biophysics, 2016, , 89-102.	0.2	2
81	Conditions for the occurrence of Coulomb blockade in phosphorene quantum dots at room temperature. Physical Review B, 2018, 98, .	1.1	2
82	Tunable magnetic focusing using Andreev scattering in superconductor-graphene hybrid devices. Journal of Applied Physics, 2020, 128, 124303.	1.1	2
83	The role of surface roughness on the electron confinement in semiconductor quantum dots. , 2012, , .		2
84	Tunable coupling of terahertz Dirac plasmons and phonons in transition metal dichalcogenide-based van der Waals heterostructures. 2D Materials, 0, , .	2.0	2
85	Topologically protected moirÃ© exciton at a twist-boundary in a van der Waals heterostructure. 2D Materials, 2022, 9, 025012.	2.0	2
86	Low-Dimensional Confining Structures on the Surface of Helium Films Suspended on Designed Cavities. Journal of Low Temperature Physics, 2013, 173, 207-226.	0.6	1
87	Magnetic field induced shell-to-core confinement transition in type-II semiconductor quantum wires. Journal of Applied Physics, 2013, 113, 153710.	1.1	1
88	Wave packet propagation through branched quantum rings under applied magnetic fields. Physica E: Low-Dimensional Systems and Nanostructures, 2019, 114, 113598.	1.3	1
89	Tunable effective masses of magneto-excitons in two-dimensional materials. Solid State Communications, 2021, 334-335, 114371.	0.9	1
90	MODELO DE CLASSIFICAÃ‡ÃƒO DE DADOS NÃƒO ESTRUTURADOS PARA ANÃŁISE DA COMPETITIVIDADE DE MERCADO. Brazilian Journal of Development, 0, , .	0.0	1

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91	Terahertz photo-generated current in a two-dimensional quantum dot system. Journal of Applied Physics, 2020, 128, 185702.	1.1	0
92	Wave Packet Propagation Through Randomly Distributed Scattering Centers in Graphene. NATO Science for Peace and Security Series B: Physics and Biophysics, 2013, , 119-126.	0.2	0