

Rafael Roldan

List of Publications by Year in descending order

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Version: 2024-02-01

46
papers

5,175
citations

136885

32
h-index

233338

45
g-index

46
all docs

46
docs citations

46
times ranked

7659
citing authors

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 1 | Local Strain Engineering in Atomically Thin MoS ₂ . Nano Letters, 2013, 13, 5361-5366. | 4.5 | 1,041 |
| 2 | Plasmons and Screening in Monolayer and Multilayer Black Phosphorus. Physical Review Letters, 2014, 113, 106802. | 2.9 | 515 |
| 3 | Strain engineering in semiconducting two-dimensional crystals. Journal of Physics Condensed Matter, 2015, 27, 313201. | 0.7 | 381 |
| 4 | Tight-binding model and direct-gap/indirect-gap transition in single-layer and multilayer MoS ₂ . Physical Review B, 2013, 88, . | 1.1 | 351 |
| 5 | Novel effects of strains in graphene and other two dimensional materials. Physics Reports, 2016, 617, 1-54. | 10.3 | 315 |
| 6 | Strong Modulation of Optical Properties in Black Phosphorus through Strain-Engineered Rippling. Nano Letters, 2016, 16, 2931-2937. | 4.5 | 199 |
| 7 | Electronic properties of single-layer and multilayer transition metal dichalcogenides (MX ₂ (M = Mo, W and X = S, Se). Annalen Der Physik, 2014, 526, 347-357. | 0.9 | 186 |
| 8 | Spin-orbit-mediated spin relaxation in monolayer MoS ₂ . Physical Review B, 2013, 87, . | 1.1 | 152 |
| 9 | Electric Field Screening in Atomically Thin Layers of MoS ₂ : the Role of Interlayer Coupling. Advanced Materials, 2013, 25, 899-903. | 11.1 | 143 |
| 10 | Theory of strain in single-layer transition metal dichalcogenides. Physical Review B, 2015, 92, . | 1.1 | 138 |
| 11 | Dielectric Screening in Atomically Thin Boron Nitride Nanosheets. Nano Letters, 2015, 15, 218-223. | 4.5 | 129 |
| 12 | Theory of 2D crystals: graphene and beyond. Chemical Society Reviews, 2017, 46, 4387-4399. | 18.7 | 121 |
| 13 | Effect of point defects on the optical and transport properties of MoS ₂ and WS ₂ . Physical Review B, 2014, 90, . | 1.1 | 110 |
| 14 | Suppression of anharmonicities in crystalline membranes by external strain. Physical Review B, 2011, 83, . | 1.1 | 107 |
| 15 | Landau level spectrum of ABA- and ABC-stacked trilayer graphene. Physical Review B, 2011, 84, . | 1.1 | 107 |
| 16 | Excitation spectrum and high-energy plasmons in single-layer and multilayer graphene. Physical Review B, 2011, 84, . | 1.1 | 105 |
| 17 | Piezoelectricity in Monolayer Hexagonal Boron Nitride. Advanced Materials, 2020, 32, e1905504. | 11.1 | 87 |
| 18 | How Substitutional Point Defects in Two-Dimensional WS ₂ Induce Charge Localization, Spin-Orbit Splitting, and Strain. ACS Nano, 2019, 13, 10520-10534. | 7.3 | 86 |

| # | ARTICLE | IF | CITATIONS |
|----|---|------|-----------|
| 19 | Momentum dependence of spin-orbit interaction effects in single-layer and multi-layer transition metal dichalcogenides. <i>2D Materials</i> , 2014, 1, 034003. | 2.0 | 85 |
| 20 | Interactions and superconductivity in heavily doped MoS ₂ . <i>Physical Review B</i> , 2013, 88, . | 1.1 | 80 |
| 21 | Quantum Hall effect and semiconductor-to-semimetal transition in biased black phosphorus. <i>Physical Review B</i> , 2016, 93, . | 1.1 | 69 |
| 22 | Optical conductivity of disordered graphene beyond the Dirac cone approximation. <i>Physical Review B</i> , 2011, 84, . | 1.1 | 59 |
| 23 | Tuning Two-Dimensional Hyperbolic Plasmons in Black Phosphorus. <i>Physical Review Applied</i> , 2019, 12, . | 1.5 | 59 |
| 24 | Electronic Band Structure of Transition Metal Dichalcogenides from Ab Initio and Slater-Koster Tight-Binding Model. <i>Applied Sciences (Switzerland)</i> , 2016, 6, 284. | 1.3 | 56 |
| 25 | Piezoelectricity and valley Chern number in inhomogeneous hexagonal 2D crystals. <i>Npj 2D Materials and Applications</i> , 2018, 2, . | 3.9 | 49 |
| 26 | The influence of strain on the elastic constants of graphene. <i>Carbon</i> , 2017, 124, 42-48. | 5.4 | 48 |
| 27 | Magneto-electronic properties of multilayer black phosphorus. <i>Physical Review B</i> , 2015, 92, . | 1.1 | 45 |
| 28 | Screening and plasmons in pure and disordered single- and bilayer black phosphorus. <i>Physical Review B</i> , 2015, 92, . | 1.1 | 41 |
| 29 | Thermodynamics of quantum crystalline membranes. <i>Physical Review B</i> , 2014, 89, . | 1.1 | 39 |
| 30 | A new bandgap tuning knob. <i>Nature Photonics</i> , 2017, 11, 407-409. | 15.6 | 37 |
| 31 | Electronic properties of disordered graphene antidot lattices. <i>Physical Review B</i> , 2013, 87, . | 1.1 | 34 |
| 32 | Inverse Funnel Effect of Excitons in Strained Black Phosphorus. <i>Physical Review X</i> , 2016, 6, . | 2.8 | 34 |
| 33 | Dielectric screening and plasmons in AA-stacked bilayer graphene. <i>Physical Review B</i> , 2013, 88, . | 1.1 | 32 |
| 34 | Wide-frequency-range dielectric response of polystyrene latex dispersions. <i>Journal of Colloid and Interface Science</i> , 2004, 274, 76-88. | 5.0 | 23 |
| 35 | Theory of Bernstein modes in graphene. <i>Physical Review B</i> , 2011, 83, . | 1.1 | 19 |
| 36 | Collisionless hydrodynamics of doped graphene in a magnetic field. <i>Solid State Communications</i> , 2013, 175-176, 114-118. | 0.9 | 16 |

| # | ARTICLE | IF | CITATIONS |
|----|--|-----|-----------|
| 37 | Strain Tuning of the Anisotropy in the Optoelectronic Properties of TiS_3 . ACS Photonics, 2018, 5, 3231-3237. | 3.2 | 14 |
| 38 | Screening and collective modes in disordered graphene antidot lattices. Physical Review B, 2013, 88, . | 1.1 | 11 |
| 39 | Effect of moiré superlattice reconstruction in the electronic excitation spectrum of graphene-metal heterostructures. 2D Materials, 2017, 4, 021001. | 2.0 | 11 |
| 40 | Enhanced spin-flip scattering by surface roughness in WS_2/MoS_2 nanoribbons. Physical Review B, 2017, 95, . | 1.1 | 11 |
| 41 | Polarization of graphene in a strong magnetic field beyond the Dirac cone approximation. Solid State Communications, 2012, 152, 1446-1455. | 0.9 | 9 |
| 42 | Plasmon spectrum of single-layer antimonene. Physical Review B, 2018, 98, . | 1.1 | 9 |
| 43 | Effects of structural and chemical disorders on the vis/UV spectra of carbonaceous interstellar grains. Monthly Notices of the Royal Astronomical Society, 2013, 432, 2962-2974. | 1.6 | 7 |
| 44 | Electronic structure of monolayer antimonene nanoribbons under out-of-plane and transverse bias. Physical Review Materials, 2018, 2, . | 0.9 | 3 |
| 45 | Deformation of anisotropic Fermi surfaces due to electron-electron interactions. Europhysics Letters, 2006, 76, 1165-1171. | 0.7 | 2 |
| 46 | Interplay of metamagnetic and structural transitions in $\text{Ca}_{2-x}\text{Sr}_x\text{RuO}_4$. European Physical Journal B, 2008, 64, 185-192. | 0.6 | 0 |