Paulo Branicio

List of Publications by Year
in descending order

94 papers	2,956 citations	172207 29 h-index	174990 52 g-index
96 all docs	96 docs citations	96 times ranked	2402 citing authors

#	Article	IF	Citations
1	Structural characterization of deformed crystals by analysis of common atomic neighborhood. Computer Physics Communications, 2007, 177, 518-523.	3.0	567
2	Large deformation and amorphization of Ni nanowires under uniaxial strain: A molecular dynamics study. Physical Review B, 2000, 62, 16950-16955.	1.1	190
3	A transition from localized shear banding to homogeneous superplastic flow in nanoglass. Applied Physics Letters, 2013, 103, .	1.5	110
4	Brittle dynamic fracture of crystalline cubic silicon carbide (3C-SiC) via molecular dynamics simulation. Journal of Applied Physics, 2005, 98, 103524.	1.1	98
5	Strong and ductile nanolaminate composites combining metallic glasses and nanoglasses. International Journal of Plasticity, 2017, 90, 231-241.	4.1	78
6	On the notch sensitivity of CuZr metallic glasses. Applied Physics Letters, 2013, 103, .	1.5	68
7	Composition and grain size effects on the structural and mechanical properties of CuZr nanoglasses. Journal of Applied Physics, 2014, 116, .	1.1	68
8	Atomistic origin of size effects in fatigue behavior of metallic glasses. Journal of the Mechanics and Physics of Solids, 2017, 104, 84-95.	2.3	68
9	Short- and intermediate-range structural correlations in amorphous silicon carbide: A molecular dynamics study. Physical Review B, 2004, 70, .	1.1	65
10	Shock-Induced Structural Phase Transition, Plasticity, and Brittle Cracks in Aluminum Nitride Ceramic. Physical Review Letters, 2006, 96, 065502.	2.9	64
11	Effect of strain on the stacking fault energy of copper: A first-principles study. Physical Review B, 2013, 88, .	1.1	60
12	Large-scale molecular dynamics simulations of wear in diamond-like carbon at the nanoscale. Applied Physics Letters, 2013, 103, .	1.5	59
13	A Critical Review on Metallic Glasses as Structural Materials for Cardiovascular Stent Applications. Journal of Functional Biomaterials, 2018, 9, 19.	1.8	59
14	A modified Tersoff potential for pure and hydrogenated diamond-like carbon. Computational Materials Science, 2013, 67, 146-150.	1.4	55
15	Shock-induced spall in single and nanocrystalline SiC. Acta Materialia, 2017, 140, 274-289.	3.8	54
16	Atomistic damage mechanisms during hypervelocity projectile impact on AlN: A large-scale parallel molecular dynamics simulation study. Journal of the Mechanics and Physics of Solids, 2008, 56, 1955-1988.	2.3	50
17	Suppression of Shear Banding and Transition to Necking and Homogeneous Flow in Nanoglass Nanopillars. Scientific Reports, 2015, 5, 15611.	1.6	50
18	Local stress calculation in simulations of multicomponent systems. Journal of Computational Physics, 2009, 228, 8467-8479.	1.9	48

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19	Molecular dynamics simulation of fast dislocations in copper. Acta Materialia, 2009, 57, 1843-1855.	3.8	47
20	Shock loading on AlN ceramics: A large scale molecular dynamics study. International Journal of Plasticity, 2013, 51, 122-131.	4.1	47
21	Deformation mechanisms and damage in Î±-alumina under hypervelocity impact loading. Journal of Applied Physics, 2008, 103, .	1.1	43
22	Applying a machine learning interatomic potential to unravel theÂeffects of local lattice distortion on the elastic properties of multi-principal element alloys. Journal of Alloys and Compounds, 2019, 803, 1054-1062.	2.8	41
23	Accelerating dislocations to transonic and supersonic speeds in anisotropic metals. Applied Physics Letters, 2008, 92, .	1.5	40
24	Mechanical properties of nanoporous metallic glasses: Insights from large-scale atomic simulations. International Journal of Plasticity, 2020, 127, 102657.	4.1	40
25	Strong and superplastic nanoglass. Nanoscale, 2015, 7, 17404-17409.	2.8	39
26	Fullerenes generated from porous structures. Physical Chemistry Chemical Physics, 2014, 16, 25515-25522.	1.3	36
27	Adsorbed Conformations of PCE Superplasticizers in Cement Pore Solution Unraveled by Molecular Dynamics Simulations. Scientific Reports, 2017, 7, 16599.	1.6	34
28	Dynamic behaviour of silicon carbide nanowires under high and extreme strain rates: a molecular dynamics study. Journal Physics D: Applied Physics, 2011, 44, 055405.	1.3	33
29	Gradient microstructure induced shear band constraint, delocalization, and delayed failure in CuZr nanoglasses. International Journal of Plasticity, 2020, 134, 102845.	4.1	32
30	Molecular dynamics study of structural, mechanical, and vibrational properties of crystalline and amorphous Ga1â^'xInxAs alloys. Journal of Applied Physics, 2003, 94, 3840-3848.	1.1	28
31	Nanoductility induced brittle fracture in shocked high performance ceramics. Applied Physics Letters, 2010, 97, .	1.5	28
32	Effects of grain size and temperature on mechanical and failure properties of ultrananocrystalline diamond. Diamond and Related Materials, 2011, 20, 1303-1309.	1.8	28
33	Structural, mechanical, and vibrational properties of Ga1â^'xInxAs alloys: A molecular dynamics study. Applied Physics Letters, 2003, 82, 1057-1059.	1.5	27
34	Compromising high strength and ductility in nanoglassâ€“metallic glass nanolaminates. RSC Advances, 2016, 6, 13548-13553.	1.7	26
35	Interaction potential for indium phosphide: a molecular dynamics and first-principles study of the elastic constants, generalized stacking fault and surface energies. Journal of Physics Condensed Matter, 2009, 21, 095002.	0.7	25
36	Surface roughness imparts tensile ductility to nanoscale metallic glasses. Extreme Mechanics Letters, 2015, 5, 88-95.	2.0	24

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37	Shock-induced microstructural response of mono- and nanocrystalline SiC ceramics. Journal of Applied Physics, 2018, 123, .	1.1	24
38	Atomistic dynamics simulation to solve conformation of model PCE superplasticisers in water and cement pore solution. Advances in Cement Research, 2017, 29, 418-428.	0.7	23
39	Superplastic nanocrystalline ceramics at room temperature and high strain rates. Scripta Materialia, 2013, 69, 525-528.	2.6	22
40	Plane shock loading on mono- and nano-crystalline silicon carbide. Applied Physics Letters, 2018, 112, .	1.5	22
41	Molecular Dynamics Simulations on the Frictional Behavior of a Perfluoropolyether Film Sandwiched between Diamond-like-Carbon Coatings. Langmuir, 2014, 30, 1573-1579.	1.6	21
42	Properties on the edge: graphene edge energies, edge stresses, edge warping, and the Wulff shape of graphene flakes. Modelling and Simulation in Materials Science and Engineering, 2011, 19, 054002.	0.8	18
43	Tuning the Mechanical Properties of Shape Memory Metallic Glass Composites with Brick and Mortar Designs. Scripta Materialia, 2020, 186, 69-73.	2.6	18
44	Large-scale atomistic modeling of nanoelectronic structures. IEEE Transactions on Electron Devices, 2000, 47, 1804-1810.	1.6	17
45	Ultra-low friction of graphene/C60/graphene coatings for realistic rough surfaces. Carbon, 2019, 152, 727-737.	5.4	17
46	Molecular Dynamics Simulations of Plane Shock Loading in SiC. Procedia Engineering, 2014, 75, 150-153.	1.2	16
47	Unravelling the anomalous electrical and optical phase-change characteristics in FeTe. Acta Materialia, 2016, 112, 67-76.	3.8	16
48	Bicontinuous nanoporous design induced homogenization of strain localization in metallic glasses. Scripta Materialia, 2021, 192, 67-72.	2.6	16
49	Collision-free spatial hash functions for structural analysis of billion-vertex chemical bond networks. Computer Physics Communications, 2006, 175, 339-347.	3.0	15
50	High-pressure phases of InP: An ab initio and molecular-dynamics study. Applied Physics Letters, 2006, 88, 161919.	1.5	15
51	Rate dependence and anisotropy of SiC response to ramp and wave-free quasi-isentropic compression. International Journal of Plasticity, 2021, 138, 102923.	4.1	15
52	Atomistic insights into the nanosecond long amorphization and crystallization cycle of nanoscale <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi mathvariant="normal">G</mml:mi><mml:msub><mml:mi mathvariant="normal">e</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:msub><mml:mi mathvariant="normal">b</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mi mathvariant="normal">	0.9	15
53	Time-temperature-transformation and continuous-heating-transformation diagrams of GeSb2Te4 from nanosecond-long ab initio molecular dynamics simulations. Acta Materialia, 2016, 121, 257-265.	3.8	13
54	Photoexcitation Induced Ultrafast Nonthermal Amorphization in Sb₂Te₃. Journal of Physical Chemistry Letters, 2020, 11, 10242-10249.	2.1	12

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55	Tuning the mechanical properties of nanoglass-metallic glass composites with brick and mortar designs. Scripta Materialia, 2021, 194, 113639.	2.6	12
56	Atomistic insights on the pressure-induced multi-layer graphene to diamond-like structure transformation. Carbon, 2021, 175, 243-253.	5.4	12
57	A dynamic pathway for the alkaline earth oxides B1 to B2 transformation. Europhysics Letters, 2006, 76, 836-841.	0.7	11
58	Melting and orientational order of the screened Wigner crystal on helium films. Physical Review B, 2001, 64, .	1.1	10
59	Differences in Sb2Te3 growth by pulsed laser and sputter deposition. Acta Materialia, 2020, 200, 811-820.	3.8	10
60	Synthesis of metallic glass nanoparticles by inert gas condensation. Physical Review Materials, 2020, 4, .	0.9	10
61	Structural phase transformations in InP under pressure: A molecular-dynamics study. Physica Status Solidi (B): Basic Research, 2007, 244, 239-243.	0.7	9
62	Atomistic Mechanisms in Silicon Carbide Nanostructures. Journal of Computational and Theoretical Nanoscience, 2012, 9, 1870-1880.	0.4	9
63	Efficient generation of non-cubic stochastic periodic bicontinuous nanoporous structures. Computational Materials Science, 2019, 169, 109101.	1.4	9
64	Atomistic Molecular Dynamics Study of Structural and Thermomechanical Properties of Zdol Lubricants on Hydrogenated Diamond-Like Carbon. IEEE Transactions on Magnetics, 2013, 49, 5227-5235.	1.2	8
65	Nanoglassâ€based balloon expandable stents. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2020, 108, 73-79.	1.6	7
66	Memristive Device Characteristics Engineering by Controlling the Crystallinity of Switching Layer Materials. ACS Applied Electronic Materials, 2020, 2, 1529-1537.	2.0	7
67	Transition between Hall-Petch and inverse Hall-Petch behavior in nanocrystalline silicon carbide. Physical Review Materials, 2021, 5, .	0.9	7
68	Intrinsic and extrinsic effects on the fracture toughness of ductile metallic glasses. Mechanics of Materials, 2021, 162, 104066.	1.7	7
69	Structural phase transition and amorphization in hexagonal SiC subjected to dynamic loading. Mechanics of Materials, 2022, 164, 104139.	1.7	7
70	Atomistic modeling of physical vapor deposition on complex topology substrates. Computational Materials Science, 2022, 203, 111111.	1.4	7
71	Tuning the mechanical properties of cellular metallic glasses. International Journal of Plasticity, 2022, 156, 103373.	4.1	7
72	Correlation between optical absorption redshift and carrier density in phase change materials. Journal of Applied Physics, 2013, 114, .	1.1	6

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73	Local structure of Ge2Sb2Te5 during crystallization under pressure. Applied Physics Letters, 2018, 112, .	1.5	6
74	Hydrogen Bond Preserving Stress Release Mechanism Is Key to the Resilience of Aramid Fibers. Journal of Physical Chemistry B, 2019, 123, 9719-9723.	1.2	6
75	Defect reversibility regulates dynamic tensile strength in silicon carbide at high strain rates. Scripta Materialia, 2022, 213, 114593.	2.6	6
76	Vibrational properties of InP under pressure: a molecular-dynamics study. Physica Status Solidi (B): Basic Research, 2007, 244, 331-335.	0.7	5
77	Excess free volume and structural properties of inert gas condensation synthesized nanoparticles based CuZr nanoglasses. Scientific Reports, 2021, 11, 19246.	1.6	5
78	Elastic interaction of hydrogen atoms on graphene: A multiscale approach from first principles to continuum elasticity. Physical Review B, 2016, 94, .	1.1	4
79	Pore Size Dependence of Permeability in Bicontinuous Nanoporous Media. Langmuir, 2021, 37, 14866-14877.	1.6	4
80	Planar fault energies of copper at large strain: A density functional theory study. Journal of Applied Physics, 2014, 116, .	1.1	3
81	Transition of deformation mechanisms in nanotwinned single crystalline SiC. Philosophical Magazine, 2019, 99, 2636-2660.	0.7	3
82	Ultralow friction of graphene-coated silica nanoparticle film. Computational Materials Science, 2022, 204, 111184.	1.4	3
83	Thermal Conductivity in Nanoscale Lennard-Jones Systems: Size Effects in the Fluid and Solid Phases. Defect and Diffusion Forum, 2006, 258-260, 310-315.	0.4	2
84	High pressure shear induced microstructural evolution in nanocrystalline aluminum. Computational Materials Science, 2022, 203, 111105.	1.4	2
85	Classical Molecular Dynamics Simulation of Structural and Dynamical Properties of II-VI and III-V Semiconductors. Defect and Diffusion Forum, 2006, 258-260, 522-530.	0.4	1
86	The amorphization and crystallization of Ge2Sb2Te5: an ab initio molecular dynamics study. Materials Research Society Symposia Proceedings, 2012, 1431, 14.	0.1	1
87	Engineering materials properties in codimension > 0. Journal of Materials Research, 2012, 27, 619-626.	1.2	1
88	Atomistic Modeling of Shock Loading in SiC Ceramics. Materials Research Society Symposia Proceedings, 2013, 1535, 6501.	0.1	1
89	Hot-press sintering of aluminum nitride nanoceramics. Physical Review Materials, 2021, 5, .	0.9	1
90	IntroduÃ§Ã£o Ã supercondutividade, suas aplicaÃ§Ãµes e a mini-revoluÃ§Ã£o provocada pela redescoberta do MGB2: uma abordagem didÃ¡tica. Revista Brasileira De Ensino De Fisica, 2001, 23, .	0.0	1

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91	Molecular-dynamics studies of charge complexes in liquid helium. Computational and Theoretical Chemistry, 1999, 464, 87-93.	1.5	0
92	Accelerating Copper Dissociated Dislocations to Transonic and Supersonic Speeds. Materials Research Society Symposia Proceedings, 2008, 1137, 100801.	0.1	0
93	Material Properties in Codimension > 0: Graphene Edge Properties. Materials Research Society Symposia Proceedings, 2010, 1258, 1.	0.1	0
94	IntroduÃ§Ã£o Ã supercondutividade, suas aplicaÃ§Ãµes e a mini-revoluÃ§Ã£o provocada pela redescoberta do MGB2: uma abordagem didÃ¡tica. Revista Brasileira De Ensino De Fisica, 2001, 23, 381-390.	0.2	0