

Sorin Bastea

List of Publications by Year in descending order

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81
papers

1,685
citations

279701

23
h-index

330025

37
g-index

83
all docs

83
docs citations

83
times ranked

1433
citing authors

#	ARTICLE	IF	CITATIONS
1	Generation of methane in the Earth's mantle: In situ high pressure-temperature measurements of carbonate reduction. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 14023-14026.	3.3	143
2	Catalytic behaviour of dense hot water. Nature Chemistry, 2009, 1, 57-62.	6.6	95
3	Phase transformations of nanometer size carbon particles in shocked hydrocarbons and explosives. Journal of Chemical Physics, 2001, 115, 2730-2736.	1.2	85
4	Modeling The Effects of Shock Pressure and Pore Morphology on Hot Spot Mechanisms in HMX. Propellants, Explosives, Pyrotechnics, 2018, 43, 805-817.	1.0	68
5	Spinodal Decomposition in Binary Gases. Physical Review Letters, 1997, 78, 3499-3502.	2.9	55
6	Viscosity and mutual diffusion in strongly asymmetric binary ionic mixtures. Physical Review E, 2005, 71, 056405.	0.8	55
7	Measurement of carbon condensates using small-angle x-ray scattering during detonation of the high explosive hexanitrostilbene. Journal of Applied Physics, 2015, 117, .	1.1	55
8	Detonation synthesis of carbon nano-onions via liquid carbon condensation. Nature Communications, 2019, 10, 3819.	5.8	50
9	Transport properties of dense fluid argon. Physical Review E, 2003, 68, 031204.	0.8	46
10	Molecular Dynamics Investigation of Adhesion between TATB Surfaces and Amorphous Fluoropolymers. Macromolecules, 2007, 40, 3422-3428.	2.2	45
11	Dissociative melting of ice VII at high pressure. Journal of Chemical Physics, 2009, 130, 124514.	1.2	45
12	Ultrafast observation of shocked states in a precompressed material. Journal of Applied Physics, 2010, 108, 023511.	1.1	42
13	Surface-directed spinodal decomposition in binary fluid mixtures. Physical Review E, 2001, 63, 041513.	0.8	37
14	Nanocarbon condensation in detonation. Scientific Reports, 2017, 7, 42151.	1.6	35
15	Freezing kinetics in overcompressed water. Physical Review B, 2007, 75, .	1.1	34
16	Pressure-induced phase transition in 1,3,5-triamino-2,4,6-trinitrobenzene (TATB). Applied Physics Letters, 2019, 114, .	1.5	34
17	Ultrafast Shock Initiation of Exothermic Chemistry in Hydrogen Peroxide. Journal of Physical Chemistry A, 2013, 117, 13051-13058.	1.1	33
18	Ultrafast shock synthesis of nanocarbon from a liquid precursor. Nature Communications, 2020, 11, 353.	5.8	33

#	ARTICLE	IF	CITATIONS
19	Chemical Equilibrium Detonation. , 2012, , 1-31.		32
20	Title is missing!. Journal of Statistical Physics, 2000, 101, 1087-1136.	0.5	31
21	Ground state structure of random magnets. Physical Review E, 1998, 58, 4261-4265.	0.8	27
22	Domain growth in computer simulations of segregating two-dimensional binary fluids. Physical Review E, 1995, 52, 3821-3826.	0.8	26
23	Electrical conductivity of lithium at megabar pressures. Physical Review B, 2002, 65, .	1.1	25
24	Exp6-polar thermodynamics of dense supercritical water. Journal of Chemical Physics, 2008, 128, 174502.	1.2	24
25	Kinetics of propagating phase transformation in compressed bismuth. Physical Review B, 2005, 71, .	1.1	21
26	Active learning for robust, high-complexity reactive atomistic simulations. Journal of Chemical Physics, 2020, 153, 134117.	1.2	21
27	Submicrosecond Aggregation during Detonation Synthesis of Nanodiamond. Journal of Physical Chemistry Letters, 2021, 12, 5286-5293.	2.1	21
28	High pressure phase transformation in iron under fast compression. Applied Physics Letters, 2009, 95, .	1.5	20
29	Aggregation kinetics of detonation nanocarbon. Applied Physics Letters, 2012, 100, 214106.	1.5	20
30	Effects of high shock pressures and pore morphology on hot spot mechanisms in HMX. AIP Conference Proceedings, 2017, , .	0.3	20
31	Nitrogen Oxides As a Chemistry Trap in Detonating Oxygen-Rich Materials. Journal of Physical Chemistry A, 2014, 118, 2897-2903.	1.1	18
32	Resolving Detonation Nanodiamond Size Evolution and Morphology at Sub-Microsecond Timescales during High-Explosive Detonations. Journal of Physical Chemistry C, 2019, 123, 19153-19164.	1.5	18
33	Many-body reactive force field development for carbon condensation in C/O systems under extreme conditions. Journal of Chemical Physics, 2020, 153, 054103.	1.2	17
34	Shock Hugoniot measurements of single-crystal 1,3,5-triamino-2,4,6-trinitrobenzene (TATB) compressed to 83â€‰%GPa. Journal of Applied Physics, 2020, 127, .	1.1	17
35	Comment on "Phase Separation in Two-Dimensional Fluid Mixtures". Physical Review Letters, 1995, 75, 3776-3776.	2.9	16
36	High-pressure X-ray diffraction, Raman and computational studies of MgCl ₂ up to 1 Mbar: Extensive pressure stability of the $\hat{1}^2$ -MgCl ₂ layered structure. Scientific Reports, 2016, 6, 30631.	1.6	15

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37	Measurement of carbon condensates using small-angle x-ray scattering during detonation of high explosives. AIP Conference Proceedings, 2017, , .	0.3	15
38	Comment on "Model for Heat Conduction in Nanofluids". Physical Review Letters, 2005, 95, 019401.	2.9	14
39	Entropy Scaling Laws for Diffusion. Physical Review Letters, 2004, 93, 199603; author reply 199604.	2.9	13
40	A pressure-driven flow analysis of gas trapping behavior in nanocomposite thermite films. Journal of Applied Physics, 2013, 114, .	1.1	13
41	Detonation-induced transformation of graphite to hexagonal diamond. Physical Review B, 2020, 102, .	1.1	13
42	Aggregation Kinetics in a Model Colloidal Suspension. Physical Review Letters, 2006, 96, 028305.	2.9	12
43	Phase separation in H ₂ O:N ₂ mixture: Molecular dynamics simulations using atomistic force fields. Journal of Chemical Physics, 2007, 126, 044510.	1.2	12
44	Thermodynamics and diffusion in size-symmetric and asymmetric dense electrolytes. Journal of Chemical Physics, 2011, 135, 084515.	1.2	12
45	Prospects for achieving high dynamic compression with low energy. Applied Physics Letters, 2012, 101, .	1.5	12
46	Investigating 3,4-bis(3-nitrofurazan-4-yl)furoxan detonation with a rapidly tuned density functional tight binding model. Journal of Chemical Physics, 2021, 154, 164115.	1.2	12
47	Shock wave propagation in dissociating low-Z liquids: D ₂ . Journal of Chemical Physics, 2005, 122, 124503.	1.2	11
48	Observation of Variations in Condensed Carbon Morphology Dependent on Composition B Detonation Conditions. Propellants, Explosives, Pyrotechnics, 2020, 45, 347-355.	1.0	11
49	Transport in a highly asymmetric binary fluid mixture. Physical Review E, 2007, 75, 031201.	0.8	10
50	Ultrafast Shock Compression of an Oxygen-Balanced Mixture of Nitromethane and Hydrogen Peroxide. Journal of Physical Chemistry A, 2014, 118, 6148-6153.	1.1	10
51	The equation of state of 5-nitro-2,4-dihydro-1,2,4,-triazol-3-one determined via in-situ optical microscopy and interferometry measurements. Journal of Applied Physics, 2016, 119, 135904.	1.1	10
52	Active clusters in disordered systems. Physical Review E, 1999, 60, 4941-4945.	0.8	9
53	Degeneracy algorithm for random magnets. Physical Review E, 1998, 58, 7978-7986.	0.8	8
54	Hydrodynamics of Binary Fluid Phase Segregation. Physical Review Letters, 2002, 89, 235701.	2.9	8

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55	Living polymers in a size-asymmetric electrolyte. <i>Physical Review E</i> , 2002, 66, 020801.	0.8	8
56	Sub-100 ps laser-driven dynamic compression of solid deuterium with a $\frac{1}{4}$ laser pulse. <i>Applied Physics Letters</i> , 2014, 105, .	1.5	7
57	Ultrafast Shock-Induced Reactions in Pentaerythritol Tetranitrate Thin Films. <i>Journal of Physical Chemistry A</i> , 2018, 122, 8101-8106.	1.1	7
58	Diffusion and conduction in a salt-free colloidal suspension via molecular dynamics simulations. <i>Soft Matter</i> , 2010, 6, 4223.	1.2	6
59	Equations of state of anhydrous AlF ₃ and AlI ₃ : Modeling of extreme condition halide chemistry. <i>Journal of Chemical Physics</i> , 2015, 142, 214506.	1.2	6
60	Effects of pressure on the structure and lattice dynamics of ammonium perchlorate: A combined experimental and theoretical study. <i>Journal of Chemical Physics</i> , 2018, 149, 034501.	1.2	6
61	Modeling Hot Spot Experiments on Shocked Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine. <i>Propellants, Explosives, Pyrotechnics</i> , 2020, 45, 330-337.	1.0	6
62	10.1007/s10955-006-9040-z. <i>Journal of Statistical Physics</i> , 2006, 124, 445-483.	0.5	5
63	High-Pressure Investigation of 2,4,6-Trinitro-3-bromoanisole (TNBA): Structural Determination and Piezochromism. <i>Journal of Physical Chemistry C</i> , 2022, 126, 1176-1187.	1.5	5
64	High-pressure isothermal equation of state of composite materials: A case study of LX-17 polymer bonded explosive. <i>Applied Physics Letters</i> , 2019, 115, 051902.	1.5	4
65	Chemistry-mediated Ostwald ripening in carbon-rich C/O systems at extreme conditions. <i>Nature Communications</i> , 2022, 13, 1424.	5.8	4
66	Machine Learning a Solution for Reactive Atomistic Simulations of Energetic Materials. <i>Propellants, Explosives, Pyrotechnics</i> , 2022, 47, .	1.0	4
67	Combinatorial optimization methods in disordered systems. <i>Computer Physics Communications</i> , 1999, 121-122, 199-205.	3.0	3
68	Consistent anisotropic repulsions for simple molecules. <i>Physical Review B</i> , 2000, 62, 5478-5481.	1.1	3
69	Nitrous acid under high temperature and pressure – From atomistic simulations to equation of state for thermochemical modeling. <i>Chemical Physics Letters</i> , 2009, 468, 197-200.	1.2	3
70	A simulation assessment of the thermodynamics of dense ion-dipole mixtures with polarization. <i>Journal of Chemical Physics</i> , 2014, 141, 044507.	1.2	3
71	A study of tantalum pentoxide Ta ₂ O ₅ structures up to 28 GPa. <i>Journal of Applied Physics</i> , 2017, 121, 175901.	1.1	3
72	Reactive flow modeling of the polymer bonded explosive LX-17 double shock experiments. <i>Journal of Applied Physics</i> , 2018, 124, .	1.1	3

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73	Preparation and optimization of a diverse workload for a large-scale heterogeneous system. , 2019, , .		3
74	Coherent pion production in $^{12}\text{C}(p, n\pi^0)$ at 800 MeV. Nuclear Physics A, 1994, 577, 227-232.	0.6	2
75	Photoacoustically Measured Speeds of Sound of Liquid HBO ₂ : Semi-Empirical Modeling of Boron-Containing Explosives. Journal of Physical Chemistry Letters, 2010, 1, 2982-2988.	2.1	2
76	Experimental Measurement of Speeds of Sound in Dense Supercritical Carbon Monoxide and Development of a High-Pressure, High-Temperature Equation of State. Journal of Physical Chemistry B, 2013, 117, 5675-5682.	1.2	2
77	An experimental characterization of condensed phase soot from overdriven detonation of composition B. AIP Conference Proceedings, 2018, , .	0.3	2
78	Phase segregation via Vlasovâ€“Boltzmann particle dynamics. Computer Physics Communications, 1999, 121-122, 270-273.	3.0	1
79	Hot spot criticality in shocked HMX over a range of pore sizes and pressures. , 2020, , .		1
80	Shock compression of precompressed deuterium. , 2012, , .		0
81	The EOS of $\hat{\text{I}}\pm\text{-NTO}$ through high-pressure microscopy-interferometry measurements. AIP Conference Proceedings, 2017, , .	0.3	0