Alessandra Benuzzi Mounaix

List of Publications by Year
in descending order

105 papers	2,758 citations	136950 32 h-index	189892 50 g-index
108 all docs	108 docs citations	108 times ranked	2128 citing authors

#	Article	IF	Citations
1	Proton radiography as an electromagnetic field and density perturbation diagnostic (invited). Review of Scientific Instruments, 2004, 75, 3531-3536.	1.3	159
2	Progress in the study of warm dense matter. Plasma Physics and Controlled Fusion, 2005, 47, B441-B449.	2.1	120
3	Generation of scaled protogalactic seed magnetic fields in laser-produced shock waves. Nature, 2012, 481, 480-483.	27.8	113
4	Observation of Laser Driven Supercritical Radiative Shock Precursors. Physical Review Letters, 2004, 92, 225001.	7.8	108
5	Laser-shock compression of diamond and evidence of a negative-slope melting curve. Nature Materials, 2007, 6, 274-277.	27.5	98
6	Electronic conduction in shock-compressed water. Physics of Plasmas, 2004, 11, L41-L44.	1.9	96
7	Coupling static and dynamic compressions: first measurements in dense hydrogen. High Pressure Research, 2004, 24, 25-31.	1.2	96
8	Inhibition of fast electron energy deposition due to preplasma filling of cone-attached targets. Physics of Plasmas, 2008, 15, .	1.9	85
9	Laser-driven shock experiments on precompressed water: Implications for â€œicyâ€•giant planets. Journal of Chemical Physics, 2006, 125, 014701.	3.0	77
10	Equation of State Data for Iron at Pressures beyond 10 Mbar. Physical Review Letters, 2002, 88, 235502.	7.8	73
11	Supersonic-Jet Experiments Using a High-Energy Laser. Physical Review Letters, 2007, 99, 265001.	7.8	58
12	Electronic Structure Investigation of Highly Compressed Aluminum with<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>K</mml:mi></mml:math>Edge Absorption Spectroscopy. Physical Review Letters, 2011, 107, 165006.	7.8	58
13	Absolute equation of state measurements of iron using laser driven shocks. Physics of Plasmas, 2002, 9, 2466-2469.	1.9	54
14	Radiative shocks: An opportunity to study laboratory astrophysics. Physics of Plasmas, 2006, 13, 056504.	1.9	54
15	Progress in warm dense matter study with applications to planetology. Physica Scripta, 2014, T161, 014060.	2.5	54
16	Chirped pulse reflectivity and frequency domain interferometry in laser driven shock experiments. Physical Review E, 1999, 60, R2488-R2491.	2.1	52
17	X-ray absorption spectroscopy of iron at multimegabar pressures in laser shock experiments. Physical Review B, 2015, 92, .	3.2	51
18	Direct Observation of Strong Ion Coupling in Laser-Driven Shock-Compressed Targets. Physical Review Letters, 2007, 99, 135006.	7.8	50

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19	Probing local and electronic structure in Warm Dense Matter: single pulse synchrotron x-ray absorption spectroscopy on shocked Fe. Scientific Reports, 2016, 6, 26402.	3.3	50
20	Decaying shock studies of phase transitions in MgOâ€SiO₂ systems: Implications for the superâ€Earths' interiors. Geophysical Research Letters, 2016, 43, 9475-9483.	4.0	48
21	Measurement of Short-Range Correlations in Shock-Compressed Plastic by Short-Pulse X-Ray Scattering. Physical Review Letters, 2009, 102, 165004.	7.8	47
22	A laser experiment for studying radiative shocks in astrophysics. Laser and Particle Beams, 2002, 20, 263-268.	1.0	46
23	Temperature and melting of laser-shocked iron releasing into an LiF window. Physics of Plasmas, 2005, 12, 060701.	1.9	46
24	Hugoniot Data for Carbon at Megabar Pressures. Physical Review Letters, 2004, 92, 065503.	7.8	41
25	Hard x-ray radiography for density measurement in shock compressed matter. Physics of Plasmas, 2008, 15, .	1.9	39
26	Laser-driven shock waves for the study of extreme matter states. Plasma Physics and Controlled Fusion, 2006, 48, B347-B358.	2.1	38
27	X-Ray Diagnosis of the Pressure Induced Mott Nonmetal-Metal Transition. Physical Review Letters, 2012, 108, 055002.	7.8	37
28	Relativistic electron transport and confinement within charge-insulated, mass-limited targets. High Energy Density Physics, 2007, 3, 358-364.	1.5	36
29	Metallization of Warm Dense<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mrow><mml:mi>SiO</mml:mi></mml:mrow><mml:mrow><mml:mn>2</mml:mn></m by XANES Spectroscopy. Physical Review Letters, 2014, 113, 116404.	7.8	34
30	Optical properties of highly compressed polystyrene using laser-driven shockwaves. Physics of Plasmas, 2003, 10, 3026-3029.	1.9	33
31	Dynamic X-ray diffraction observation of shocked solid iron up to 170 GPa. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 7745-7749.	7.1	33
32	X-ray source studies for radiography of dense matter. Physics of Plasmas, 2009, 16, 033101.	1.9	32
33	High pressures generated by laser driven shocks: applications to planetary physics. Nuclear Fusion, 2004, 44, S208-S214.	3.5	30
34	Kinetics of the iron<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Î±</mml:mi><mml:mo>â^'</mml:mo><mml:mi></mml:m transition at high-strain rates: Experiment and model. Physical Review B, 2016, 93, .	3.2	30
35	<i>Ab initio</i> calculations of the B1-B2 phase transition in MgO. Physical Review B, 2019, 99, .	3.2	30
36	Direct density measurement of shock-compressed iron using hard x rays generated by a short laser pulse. Physical Review E, 2009, 80, 056407.	2.1	29

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37	X-ray absorption<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>K</mml:mi></mml:math>edge as a diagnostic of the electronic temperature in warm dense aluminum. Physical Review B, 2015, 92, .	3.2	27
38	Foam-induced smoothing studied through laser-driven shock waves. Physical Review E, 2000, 62, 8573-8582.	2.1	26
39	Modeling of laser-driven proton radiography of dense matter. High Energy Density Physics, 2008, 4, 26-40.	1.5	25
40	Proton radiography of a shock-compressed target. Physical Review E, 2010, 82, 016407.	2.1	23
41	Direct laser-driven ramp compression studies of iron: A first step toward the reproduction of planetary core conditions. High Energy Density Physics, 2013, 9, 243-246.	1.5	21
42	Metallization of Shock-Compressed Liquid Ammonia. Physical Review Letters, 2021, 126, 025003.	7.8	21
43	Temperature and electron density measurements on laser driven radiative shocks. Physics of Plasmas, 2006, 13, 010702.	1.9	20
44	In situ X-ray diffraction of silicate liquids and glasses under dynamic and static compression to megabar pressures. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 11981-11986.	7.1	20
45	Laser-driven shock compression of â€œsynthetic planetary mixturesâ€•of water, ethanol, and ammonia. Scientific Reports, 2019, 9, 10155.	3.3	19
46	Shock velocity and temperature measurements of plastic foams compressed by smoothed laser beams. Physics of Plasmas, 2005, 12, 012706.	1.9	18
47	Melting and metallization of silica in the cores of gas giants, ice giants, and super Earths. Physical Review B, 2015, 92, .	3.2	18
48	Laser driven shock wave acceleration experiments using plastic foams. Applied Physics Letters, 1999, 75, 3026-3028.	3.3	17
49	Experimental Demonstration of an Inertial Collimation Mechanism in Nested Outflows. Physical Review Letters, 2014, 112, 155001.	7.8	17
50	Modeling HEDLA magnetic field generation experiments on laser facilities. High Energy Density Physics, 2013, 9, 172-177.	1.5	16
51	High-pressure structural changes in liquid silica. Physical Review E, 2016, 94, 031201.	2.1	16
52	Radiative Shock Experiments At Luli. Astrophysics and Space Science, 2005, 298, 69-74.	1.4	15
53	Density measurement of low-Zshocked material from monochromatic x-ray two-dimensional images. Physical Review E, 2008, 77, 045402.	2.1	14
54	Highly efficient, easily spectrally tunable X-ray backlighting for the study of extreme matter states. Laser and Particle Beams, 2009, 27, 601-609.	1.0	14

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55	High-power laser shock-induced dynamic fragmentation of iron foils. Physical Review B, 2010, 82, .	3.2	14
56	Generation of a double shock driven by laser. Physical Review E, 2004, 70, 045401.	2.1	13
57	Recent experiments on electron transport in high-intensity laser matter interaction. Plasma Physics and Controlled Fusion, 2005, 47, B777-B789.	2.1	13
58	<i>Ab initio</i>calculation of x-ray absorption of iron up to 3 Mbar and 8000 K. Physical Review B, 2014, 89, .	3.2	13
59	Production of high quality shocks for equation of state experiments. European Physical Journal D, 2003, 23, 99-107.	1.3	12
60	LASER-driven fast electron dynamics in gaseous media under the influence of large electric fields. Physics of Plasmas, 2009, 16, 033104.	1.9	12
61	X-ray scattering from dense plasmas. Plasma Physics and Controlled Fusion, 2005, 47, B491-B501.	2.1	11
62	Theoretical and Experimental Studies of Radiative Shocks. Astrophysics and Space Science, 2007, 307, 159-164.	1.4	11
63	Interface velocity of laser shocked Fe/LiF targets. Physics of Plasmas, 2004, 11, L61-L64.	1.9	10
64	Measuring the structure and equation of state of polyethylene terephthalate at megabar pressures. Scientific Reports, 2021, 11, 12883.	3.3	10
65	Probing iron at Super-Earth core conditions. Physics of Plasmas, 2015, 22, .	1.9	9
66	Direct Observation of Shockâ€Induced Disordering of Enstatite Below the Melting Temperature. Geophysical Research Letters, 2020, 47, e2020GL088887.	4.0	9
67	Electrical conductivity of warm dense silica from double-shock experiments. Nature Communications, 2021, 12, 840.	12.8	9
68	Hydrodynamics of laser-produced plasma corona measured by optical interferometry. Plasma Physics and Controlled Fusion, 2008, 50, 105013.	2.1	8
69	Heating of solid target in electron refluxing dominated regime with ultra-intense laser. Journal of Physics: Conference Series, 2008, 112, 022063.	0.4	8
70	Plasma Jet Experiments Using LULI 2000 Laser Facility. Astrophysics and Space Science, 2007, 307, 103-107.	1.4	7
71	Simulating earth core using high energy lasers. High Energy Density Physics, 2010, 6, 210-214.	1.5	7
72	Supernovae Rayleigh-Taylor Instability Experiments on the CEA-PhÃ©bus Laser Facility. Astrophysics and Space Science, 2001, 277, 143-146.	1.4	6

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73	Density and Temperature Measurements on Laser Generated Radiative Shocks. Astrophysics and Space Science, 2005, 298, 333-336.	1.4	6
74	Laser-driven flyer impact experiments at the LULI 2000 laserÂfacility. European Physical Journal Special Topics, 2006, 133, 1101-1105.	0.2	6
75	Coronal hydrodynamics of laser-produced plasmas. Physical Review E, 2008, 78, 046404.	2.1	6
76	Characterizing equation of state and optical properties of dynamically pre-compressed materials. Physics of Plasmas, 2019, 26, 042704.	1.9	6
77	X-ray powder diffraction in reflection geometry on multi-beam kJ-type laser facilities. Review of Scientific Instruments, 2021, 92, 013902.	1.3	6
78	Pressure amplification in thermal X-ray irradiated foam layered gold targets. Laser and Particle Beams, 2002, 20, 165-169.	1.0	5
79	Interaction of soft-x-ray thermal radiation with foam-layered targets. Physical Review E, 2002, 65, 066404.	2.1	4
80	Radiative shocks: New results for laboratory astrophysics. European Physical Journal Special Topics, 2006, 133, 1039-1041.	0.2	4
81	Laser-driven quasi-isentropic compression experiments and numerical studies of the iron alpha-epsilon transition in the context of planetology. , 2012, , .		4
82	Refraction index of shock compressed water in the megabar pressure range. Europhysics Letters, 2015, 112, 36001.	2.0	4
83	Measurement of iron characteristics under ramp compression. Chinese Physics B, 2017, 26, 115205.	1.4	4
84	Optical shadowgraphy and proton imaging as diagnostics tools for fast electron propagation in ultrahigh-intensity laserâ€“matter interaction. Radiation Effects and Defects in Solids, 2005, 160, 575-585.	1.2	3
85	EOS measurements of pressure standard materials using laser-driven ramp-wave compression technique. Journal of Physics: Conference Series, 2010, 215, 012199.	0.4	3
86	Production and Diagnostics of Dense Matter. Contributions To Plasma Physics, 2015, 55, 67-77.	1.1	3
87	X-ray absorption near edge spectroscopy study of warm dense MgO. Physics of Plasmas, 2019, 26, 112703.	1.9	3
88	White-line evolution in shocked solid Ta evidenced by synchrotron x-ray absorption spectroscopy. Physical Review B, 2020, 102, .	3.2	3
89	Laser-driven shocks in precompressed water samples. European Physical Journal Special Topics, 2006, 133, 1093-1095.	0.2	3
90	Hugoniot and released state of calcite above 200ÂGPa with implications for hypervelocity planetary impacts. Icarus, 2022, 377, 114901.	2.5	3

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91	Laboratory astrophysics using high energy lasers: need for 2D simulation. Journal of Physics: Conference Series, 2008, 112, 042012.	0.4	2
92	Plasma jet experiments in vacuum and in ambient medium using high energy lasers. Journal of Physics: Conference Series, 2008, 112, 042022.	0.4	2
93	STUDY OF IRON UNDER HIGH PRESSURE CONDITIONS USING ISENTROPIC COMPRESSION. , 2009, , .		2
94	Behaviour of fast electron transport in solid targets. European Physical Journal Special Topics, 2006, 133, 405-408.	0.2	2
95	Experimental and numerical studies of radiative shocks. European Physical Journal Special Topics, 2006, 133, 1013-1017.	0.2	2
96	Density Measurements of Shock Compressed Matter Using Short Pulse Laser Diagnostics. Astrophysics and Space Science, 2007, 307, 257-261.	1.4	1
97	Study of the propagation of ultra-intense laser-produced fast electrons in gas jets. European Physical Journal Special Topics, 2006, 133, 367-370.	0.2	1
98	<title>Preliminary results on the EOS of water in the megabar range</title>. , 2001, , .		0
99	Shock pressure measurements in thermal radiation irradiated foam layered targets. , 2002, 4760, 309.		0
100	<title>Carbon hugoniot at megabar pressures driven by laser-induced shocks</title>. , 2004, , .		0
101	High density energy physics experiments on LULI 2000 facility. European Physical Journal Special Topics, 2006, 133, 1065-1070.	0.2	0
102	Radiative Shocks And Plasma Jets As Laboratory Astrophysics Experiments. AIP Conference Proceedings, 2007, , .	0.4	0
103	MICROSTRUCTURAL INVESTIGATION OF LASER-SHOCKED IRON FOILS. , 2009, , .		0
104	Optical interferometry and data analysis of laser-produced plasmas. , 2010, , .		0
105	Characterization of laser-driven ultrafast shockless compression using gold targets. Journal of Applied Physics, 2014, 116, 043521.	2.5	0