

Joerg Hermann

List of Publications by Year in descending order

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130
papers

3,690
citations

101543

36
h-index

144013

57
g-index

130
all docs

130
docs citations

130
times ranked

2330
citing authors

#	ARTICLE	IF	CITATIONS
1	Laser-generated plasma plume expansion: Combined continuous-microscopic modeling. Physical Review E, 2002, 66, 066406.	2.1	190
2	Investigation of nanoparticle generation during femtosecond laser ablation of metals. Applied Surface Science, 2007, 253, 6310-6315.	6.1	155
3	Diagnostics of the early phase of an ultraviolet laser induced plasma by spectral line analysis considering self-absorption. Journal of Applied Physics, 1998, 83, 691-696.	2.5	141
4	A study of molecule formation during laser ablation of graphite in low-pressure nitrogen. Journal Physics D: Applied Physics, 1998, 31, 1263-1272.	2.8	129
5	Study of initial dust formation in an Ar discharge by laser induced particle explosive evaporation. Journal of Applied Physics, 1994, 76, 148-153.	2.5	120
6	Comparative investigation of solar cell thin film processing using nanosecond and femtosecond lasers. Journal Physics D: Applied Physics, 2006, 39, 453-460.	2.8	118
7	Plasma diagnostics in pulsed laser TiN layer deposition. Journal of Applied Physics, 1995, 77, 2928-2936.	2.5	116
8	Laser-induced plasma emission: from atomic to molecular spectra. Journal Physics D: Applied Physics, 2017, 50, 183002.	2.8	110
9	Laser-induced explosive boiling during nanosecond laser ablation of silicon. Applied Surface Science, 2002, 186, 288-292.	6.1	96
10	Laser treatment of tribological DLC films. Diamond and Related Materials, 2003, 12, 1034-1040.	3.9	87
11	Mechanisms of small clusters production by short and ultra-short laser ablation. Applied Surface Science, 2007, 253, 7656-7661.	6.1	83
12	Plasma analyses during femtosecond laser ablation of Ti, Zr, and Hf. Journal of Applied Physics, 2005, 97, 063306.	2.5	81
13	Selective ablation of thin films with short and ultrashort laser pulses. Applied Surface Science, 2006, 252, 4814-4818.	6.1	77
14	Reducing nanoparticles in metal ablation plumes produced by two delayed short laser pulses. Applied Physics Letters, 2009, 94, .	3.3	75
15	Laser processing of hardmetals: Physical basics and applications. International Journal of Refractory Metals and Hard Materials, 2005, 23, 278-286.	3.8	70
16	Evaluation of minor element concentrations in potatoes using laser-induced breakdown spectroscopy. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2010, 65, 727-733.	2.9	62
17	Femtosecond laser ablation of diamond-like carbon films. Applied Surface Science, 2004, 222, 226-233.	6.1	60
18	Correlation between ablation efficiency and nanoparticle generation during the short-pulse laser ablation of metals. Laser Physics, 2008, 18, 374-379.	1.2	60

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19	Quantitative analyses of glass via laser-induced breakdown spectroscopy in argon. <i>Spectrochimica Acta, Part B: Atomic Spectroscopy</i> , 2014, 101, 32-45.	2.9	56
20	Multistage plasma initiation process by pulsed CO ₂ laser irradiation of a Ti sample in an ambient gas (He, Ar, or N ₂). <i>Journal of Applied Physics</i> , 1993, 73, 1091-1099.	2.5	55
21	Growth of apatite films by laser ablation: Reduction of the droplet areal density. <i>Journal of Applied Physics</i> , 1996, 80, 1803-1808.	2.5	55
22	Deposition of high quality TiN films by excimer laser ablation in reactive gas. <i>Journal of Applied Physics</i> , 1993, 74, 5781-5789.	2.5	54
23	Simulation of emission spectra from nonuniform reactive laser-induced plasmas. <i>Physical Review E</i> , 2015, 92, 053103.	2.1	52
24	Ultra-fast laser ablation applied to deep-drilling of metals. <i>Applied Surface Science</i> , 2005, 248, 299-303.	6.1	50
25	Local thermal equilibrium plasma modeling for analyses of gas-phase reactions during reactive-laser ablation. <i>Journal of Applied Physics</i> , 2002, 91, 10188.	2.5	48
26	Surface nitriding of titanium and aluminium by laser-induced plasma. <i>Surface and Coatings Technology</i> , 1997, 97, 448-452.	4.8	46
27	Plume segregation observed in hydrogen and deuterium containing plasmas produced by laser ablation of carbon fiber tiles from a fusion reactor. <i>Spectrochimica Acta, Part B: Atomic Spectroscopy</i> , 2010, 65, 715-720.	2.9	42
28	Laser-induced fluorescence probing during pulsed-laser ablation for three-dimensional number density mapping of plasma species. <i>Journal Physics D: Applied Physics</i> , 2001, 34, 3356-3363.	2.8	40
29	Combined continuous and microscopic modeling of laser plume expansion. <i>Applied Surface Science</i> , 2003, 208-209, 27-32.	6.1	40
30	In-depth analysis of ITER-like samples composition using laser-induced breakdown spectroscopy. <i>Journal of Nuclear Materials</i> , 2011, 414, 485-491.	2.7	40
31	Stark broadening measurement of Al II lines in a laser-induced plasma. <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2014, 133, 652-662.	2.3	40
32	Stark broadening measurements in plasmas produced by laser ablation of hydrogen containing compounds. <i>Spectrochimica Acta, Part B: Atomic Spectroscopy</i> , 2016, 122, 118-126.	2.9	40
33	Subsurface boiling during pulsed laser ablation of Ge. <i>Physical Review B</i> , 1998, 58, 6787-6790.	3.2	39
34	Analyses of gas-phase reactions during reactive laser ablation using emission spectroscopy. <i>Journal Physics D: Applied Physics</i> , 1999, 32, 2707-2713.	2.8	39
35	Comparative investigation of laser ablation plumes in air and argon by analysis of spectral line shapes: Insights on calibration-free laser-induced breakdown spectroscopy. <i>Spectrochimica Acta, Part B: Atomic Spectroscopy</i> , 2014, 100, 189-196.	2.9	37
36	Metal surface nitriding by laser induced plasma. <i>Journal of Applied Physics</i> , 1996, 80, 4673-4684.	2.5	36

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37	Analysis of Multi-elemental Thin Films via Calibration-Free Laser-Induced Breakdown Spectroscopy. <i>Analytical Chemistry</i> , 2019, 91, 2544-2550.	6.5	36
38	Femtosecond laser ablation of cemented carbides: properties and tribological applications. <i>Applied Physics A: Materials Science and Processing</i> , 2004, 79, 629-632.	2.3	35
39	Ideal radiation source for plasma spectroscopy generated by laser ablation. <i>Physical Review E</i> , 2017, 96, 053210.	2.1	35
40	Plasma formation resulting from the interaction of a laser beam with a solid metal target in an ambient gas. <i>Plasma Sources Science and Technology</i> , 1993, 2, 219-226.	3.1	34
41	Influence of irradiation conditions on plasma evolution in laser-surface interaction. <i>Journal of Applied Physics</i> , 1993, 74, 3071-3079.	2.5	33
42	Direct carbide synthesis by multipulse excimer laser treatment of Ti samples in ambient CH ₄ gas at superatmospheric pressure. <i>Journal of Applied Physics</i> , 1994, 75, 5286-5294.	2.5	33
43	Theoretical modelling of phenomena in the pulsed-laser deposition process: Application to Ti targets ablation in low-pressure N ₂ . <i>Journal of Applied Physics</i> , 1999, 86, 6096-6106.	2.5	31
44	Investigation of plasmas produced by laser ablation using single and double pulses for food analysis demonstrated by probing potato skins. <i>Analytical and Bioanalytical Chemistry</i> , 2011, 400, 2173-2183.	3.7	31
45	Two-step procedure for trace element analysis in food via calibration-free laser-induced breakdown spectroscopy. <i>Spectrochimica Acta, Part B: Atomic Spectroscopy</i> , 2018, 150, 77-85.	2.9	31
46	A spectroscopic study of laser ablation plasmas from Ti, Al and C targets. <i>Applied Surface Science</i> , 1998, 127-129, 645-649.	6.1	30
47	Analysis of deposited layers on plasma facing components by laser-induced breakdown spectroscopy: Towards ITER tritium inventory diagnostics. <i>Journal of Nuclear Materials</i> , 2011, 415, S1187-S1190.	2.7	30
48	Diagnostics of nonuniform plasmas for elemental analysis via laser-induced breakdown spectroscopy: demonstration on carbon-based materials. <i>Journal of Analytical Atomic Spectrometry</i> , 2013, 28, 1446.	3.0	30
49	Subpicosecond laser ablation of copper and fused silica: Initiation threshold and plasma expansion. <i>Applied Surface Science</i> , 2009, 255, 9734-9737.	6.1	29
50	On the stoichiometry of mass transfer from solid to plasma during pulsed laser ablation of brass. <i>Spectrochimica Acta, Part B: Atomic Spectroscopy</i> , 2010, 65, 636-641.	2.9	29
51	Accurate analysis of indium-zinc oxide thin films via laser-induced breakdown spectroscopy based on plasma modeling. <i>Journal of Analytical Atomic Spectrometry</i> , 2014, 29, 553.	3.0	29
52	Compositional Analysis of Aerosols Using Calibration-Free Laser-Induced Breakdown Spectroscopy. <i>Analytical Chemistry</i> , 2016, 88, 4029-4035.	6.5	27
53	Formation of dense submicronic clouds in low pressure Ar-SiH ₄ RF reactor: Diagnostics and growth processes from monomers to large size particulates. <i>Pure and Applied Chemistry</i> , 1996, 68, 1121-1126.	1.9	24
54	Modeling of metal ablation induced by ultrashort laser pulses. <i>Thin Solid Films</i> , 2004, 453-454, 513-517.	1.8	24

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55	Quantification of surface contamination on optical glass via sensitivity-improved calibration-free laser-induced breakdown spectroscopy. Applied Surface Science, 2021, 537, 147984.	6.1	24
56	Direct carbidation of titanium as a result of multipulse UV-laser irradiation of titanium samples in an ambient methane gas. Applied Surface Science, 1992, 54, 349-352.	6.1	22
57	Local thermodynamic equilibrium in a laser-induced plasma evidenced by blackbody radiation. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2018, 144, 82-86.	2.9	20
58	A study of molecule formation during laser ablation of graphite in low-pressure ammonia. Journal Physics D: Applied Physics, 1999, 32, 518-528.	2.8	19
59	Correlation between plasma expansion and damage threshold by femtosecond laser ablation of fused silica. Journal Physics D: Applied Physics, 2008, 41, 105216.	2.8	19
60	Investigation of plumes produced by material ablation with two time-delayed femtosecond laser pulses. Applied Surface Science, 2009, 255, 9738-9741.	6.1	19
61	Metallographical analysis of steel and hard metal substrates after deep-drilling with femtosecond laser pulses. Applied Surface Science, 2003, 208-209, 181-188.	6.1	18
62	Evaluation of pressure in a plasma produced by laser ablation of steel. Spectrochimica Acta, Part B: Atomic Spectroscopy, 2018, 143, 63-70.	2.9	18
63	Analyses of the TiO- $\hat{1}^3$ system for temperature measurements in a laser-induced plasma. Journal of Physics B: Atomic, Molecular and Optical Physics, 2001, 34, 153-164.	1.5	17
64	Investigation of silicon oxide emission spectra observed in a pulsed discharge and a laser-induced plasma. Journal of Physics B: Atomic, Molecular and Optical Physics, 2001, 34, 1917-1927.	1.5	17
65	Excimer laser synthesis of thin AlN coatings. Applied Surface Science, 1998, 125, 137-148.	6.1	16
66	Analysis of indium zinc oxide thin films by laser-induced breakdown spectroscopy. Journal of Applied Physics, 2011, 110, .	2.5	16
67	Spectroscopic analysis of femtosecond laser-induced gas breakdown. Thin Solid Films, 2004, 453-454, 377-382.	1.8	15
68	Micromachining of semiconductor by femtosecond laser for integrated circuit defect analysis. Applied Surface Science, 2007, 254, 911-915.	6.1	15
69	Generation of absorption waves by CO2 laser pulses at low power density. Journal of Applied Physics, 2004, 96, 3084-3094.	2.5	14
70	Probing electron-phonon coupling in metals via observations of ablation plumes produced by two delayed short laser pulses. Applied Physics Letters, 2011, 99, 081502.	3.3	14
71	Investigation of nonuniform surface properties of classically manufactured fused silica windows. Applied Optics, 2017, 56, 7427.	1.8	14
72	Isotopic analysis of deuterated water via single- and double-pulse laser-induced breakdown spectroscopy. Physics of Plasmas, 2018, 25, .	1.9	12

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73	Measurement error due to self-absorption in calibration-free laser-induced breakdown spectroscopy. <i>Analytica Chimica Acta</i> , 2021, 1185, 339070.	5.4	12
74	Investigation by laser-induced fluorescence of surface vaporization during the pulsed CO ₂ laser irradiation of a titanium sample in an ambient gas. <i>Journal of Applied Physics</i> , 1992, 71, 5629-5634.	2.5	10
75	Detection of boron nitride radicals by emission spectroscopy in a laser-induced plasma. <i>Spectrochimica Acta, Part B: Atomic Spectroscopy</i> , 2001, 56, 629-635.	2.9	10
76	Laser-induced breakdown self-reversal isotopic spectrometry for isotopic analysis of lithium. <i>Spectrochimica Acta, Part B: Atomic Spectroscopy</i> , 2020, 168, 105868.	2.9	10
77	Spectroscopic observation of the plasma produced by a CO ₂ laser beam interacting with titanium target under helium and/or argon atmosphere. <i>Applied Physics A: Solids and Surfaces</i> , 1992, 55, 340-346.	1.4	9
78	TiN layer synthesis by laser-plasma. <i>Thin Solid Films</i> , 1994, 241, 39-43.	1.8	9
79	In Situ Tritium Measurements and Control by Laser Techniques. <i>Fusion Science and Technology</i> , 2011, 60, 1049-1052.	1.1	9
80	Three-dimensional luminescence microscopy for quantitative plasma characterization in bulk semiconductors. <i>Applied Physics Letters</i> , 2021, 119, .	3.3	9
81	The study of a crater forming on the surface of a Ti target submitted to multipulse excimer laser irradiation under low pressure N ₂ . <i>Journal of Modern Optics</i> , 1996, 43, 1773-1784.	1.3	8
82	Fs Laser-Induced Plasmas from Energetic Polymers: Towards Micro-Laser Plasma Thruster Application. <i>Plasma Processes and Polymers</i> , 2016, 13, 611-622.	3.0	8
83	Spectroscopic study of the plasma created by interaction between a TEA CO ₂ laser beam and a Ti target in a cell containing helium gas. <i>Applied Surface Science</i> , 1990, 46, 315-320.	6.1	7
84	Laser Applications for Nanotechnology : Insights From Numerical Modeling. <i>AIP Conference Proceedings</i> , 2010, , .	0.4	7
85	Compositional Analysis of Drugs by Laser-Induced Breakdown Spectroscopy. <i>Journal of Applied Spectroscopy</i> , 2017, 84, 472-477.	0.7	7
86	Echelle spectrometer calibration by means of laser plasma. <i>Spectrochimica Acta, Part B: Atomic Spectroscopy</i> , 2021, 178, 106144.	2.9	7
87	Properties of plasmas produced by short double pulse laser ablation of metals. <i>Journal of Physics: Conference Series</i> , 2012, 399, 012006.	0.4	6
88	Comparative study of polymorphic phase transition by differential thermal analysis, high temperature x-ray diffraction and temperature programmed electrical conductivity measurements: case study of mixed iron and cobalt molybdate. <i>The Journal of Physical Chemistry</i> , 1992, 96, 9466-9469.	2.9	5
89	Spectroscopic studies of XeCl-laser-induced plasma on Ti targets in nitrogen containing atmospheres. <i>Applied Physics A: Solids and Surfaces</i> , 1994, 58, 595-599.	1.4	5
90	<title>Femtosecond laser ablation of materials</title>. , 2003, , .		5

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91	Accumulation of air in polymeric materials investigated by laser-induced breakdown spectroscopy. Journal of Applied Physics, 2012, 111, 063108.	2.5	5
92	Quantitative analysis of amorphous indium zinc oxide thin films synthesized by Combinatorial Pulsed Laser Deposition. Applied Physics A: Materials Science and Processing, 2014, 117, 229-236.	2.3	5
93	Laser surface microstructuring to improve tribological systems. , 2003, , .		4
94	Dynamical plasma study during CaCu ₃ Ti ₄ O ₁₂ and Ba _{0.6} Sr _{0.4} TiO ₃ pulsed laser deposition by local thermodynamic equilibrium modelling. Journal Physics D: Applied Physics, 2010, 43, 285202.	2.8	4
95	Nanoparticles and nanostructures formed by laser: What can we learn from the modeling?. Proceedings of SPIE, 1899, 8414, 30.	0.8	3
96	Investigation of nanoparticle formation in a plasma produced by femtosecond laser ablation of gold. AIP Conference Proceedings, 2005, , .	0.4	3
97	Analyses of Plasmas Produced by Laser Ablation of Fresh Aliments. Advanced Materials Research, 0, 227, 49-52.	0.3	3
98	Time-resolved spatial distribution of plasma in the ablation of a Ba _{0.6} Sr _{0.4} TiO ₃ target by 25â€‰ns KrF ultraviolet laser. Journal of Applied Physics, 2014, 116, 133303.	2.5	3
99	Laser ablation in a reactive atmosphere: application to the synthesis and deposition performance of titanium carbide thin films. Optical Engineering, 1996, 35, 1652.	1.0	2
100	<title>Laser-induced forward transfer of 40 nm Chromium film using ultrashort laser pulses</title>. , 2006, , .		2
101	Experimental study of front and back ablation of metal thin film using ultrashort laser pulses. , 2006, , .		2
102	Mechanisms of nanoparticle formation by short laser pulses. , 2007, , .		2
103	<title>Influence of irradiation conditions on plume expansion induced by femtosecond laser ablation of gold and copper</title>. , 2007, , .		2
104	CaractÃ©risation du plasma gÃ©nÃ©rÃ© lors de l'ablation laser de Ti, Zr et Hf en rÃ©gime femtoseconde. European Physical Journal Special Topics, 2005, 127, 199-204.	0.2	2
105	Direct synthesis of metal nitride by CO ₂ or XeCl laser plasma. , 1994, , .		1
106	<title>Laser-induced explosive boiling during nanosecond laser ablation of silicon</title>. , 2002, , .		1
107	<title>Analyses of femtosecond laser ablation of Ti, Zr, and Hf</title>. , 2004, , .		1
108	Formation of nanoparticles by short and ultra-short laser pulses. Proceedings of SPIE, 2008, , .	0.8	1

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109	Direct synthesis of titanium nitride on Ti sample surface by laser-plasma. Annales De Physique, 1994, 19, C1-277-C1-284.	0.2	1
110	Direct synthesis of titanium nitride by laser-plasma. European Physical Journal Special Topics, 1994, 04, C4-55-C4-58.	0.2	1
111	<title>Plasma study in laser ablation process for deposition</title>. , 1998, , .		0
112	<title>Analysis of gas-phase reactions during pulsed laser ablation using laser-induced fluorescence, absorption, and emission spectroscopy</title>. , 2002, , .		0
113	<title>Structure changes in steels and hard metal induced by nanosecond and femtosecond laser processing</title>. , 2003, , .		0
114	<title>Spectroscopic analyses during femtosecond laser ablation of hydroxyapatite</title>. , 2004, , .		0
115	Femtosecond ablation applied to deep-drilling of hard metals. , 2004, , .		0
116	Magnetic Carbon Cluster Formation Process: Optical Spectroscopy of Laser-Ablated Carbon Plume. AIP Conference Proceedings, 2005, , .	0.4	0
117	Organic and inorganic materials analysis by laser-induced breakdown spectroscopy. Proceedings of SPIE, 2008, , .	0.8	0
118	On the possibility of tritium measurement in a tokamak by a laser technique. , 2009, , .		0
119	Laser-induced fluorescence probing during pulsed-laser ablation for three-dimensional number density mapping of plasma species. Journal Physics D: Applied Physics, 2002, 35, 1458-1458.	2.8	0
120	Ablation de matÃ©riaux par laser femtoseconde. European Physical Journal Special Topics, 2003, 108, 41-44.	0.2	0
121	Ã©tude des processus physico-chimiques dans un Ã© plasma produit par ablation laser pour la Ã© croissance de couches minces. European Physical Journal Special Topics, 2003, 108, 59-59.	0.2	0
122	Ablation d'un film d'or par laser Ã© excimÃ©re. European Physical Journal Special Topics, 2003, 108, 45-48.	0.2	0
123	ROLE OF GAS, SAMPLE AND LASER BEAM PARAMETERS IN LASER GENERATION OF A LOW THRESHOLD BREAKDOWN PLASMA IN A GAS IN FRONT OF A SOLID TARGET. European Physical Journal Special Topics, 1991, 01, C7-709-C7-710.	0.2	0
124	Basic study of plasma plume for film deposition by reactive laser ablation. European Physical Journal Special Topics, 1994, 04, C4-123-C4-126.	0.2	0
125	Etude de la synthÃ©se de films produits par irradiation laser-UV directe. Annales De Physique, 1994, 19, C1-175-C1-176.	0.2	0
126	Detection in the nanometer scale of particles generated in an Ar-SiH4 radiofrequency low pressure discharge. Annales De Physique, 1994, 19, C1-185-C1-186.	0.2	0

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127	Direct Synthesis of Metal Nitride by Laser. , 1996, , 629-636.		0
128	Étude de la propagation du plasma produit par ablation laser pour différentes cibles, dans le vide et dans différents gaz ambiants. Annales De Physique, 1997, 22, C1-133-C1-134.	0.2	0
129	Étude de la formation de molécules lors de l'ablation laser de graphite en présence d'ammoniac. European Physical Journal Special Topics, 1999, 09, Pr5-147-Pr5-148.	0.2	0
130	Optical Detection of Deuterium in Heavy Water: Towards Remote Detection of Tritium. , 2019, , .		0