Mathias Ziegler

List of Publications by Year
in descending order

63 papers	761 citations	567281 15 h-index	580821 25 g-index
64 all docs	64 docs citations	64 times ranked	464 citing authors

#	Article	IF	Citations
1	Photothermal-SR-Net: A Customized Deep Unfolding Neural Network for Photothermal Super Resolution Imaging. IEEE Transactions on Instrumentation and Measurement, 2022, 71, 1-9.	4.7	7
2	Thermographic detection of internal defects using 2D photothermal super resolution reconstruction with sequential laser heating. Journal of Applied Physics, 2022, 131, .	2.5	4
3	C2.2 2D-Photothermal Super Resolution with Sparse Matrix Stacking. , 2021, , .		1
4	Classification of Spot-Welded Joints in Laser Thermography Data Using Convolutional Neural Networks. IEEE Access, 2021, 9, 48303-48312.	4.2	13
5	Full-frame thermographic super-resolution with 2D-structured laser heating. , 2021, , .		1
6	Multidimensional Reconstruction of Internal Defects in Additively Manufactured Steel Using Photothermal Super Resolution Combined With Virtual Wave-Based Image Processing. IEEE Transactions on Industrial Informatics, 2021, 17, 7368-7378.	11.3	11
7	Investigations on photothermal super resolution reconstruction using 2D-structured illumination patterns. , 2021, , .		3
8	Detection of Surface Breaking Cracks Using Flying Line Laser Thermography: A Canny-Based Algorithm. Engineering Proceedings, 2021, 8, .	0.4	0
9	Laser line scanning thermography for surface breaking crack detection : modeling and experimental study. Infrared Physics and Technology, 2020, 104, 103141.	2.9	23
10	Defect detection in steel bars up to 600ÂÂ°C using laser line thermography. Infrared Physics and Technology, 2020, 111, 103565.	2.9	3
11	Super resolution laser line scanning thermography. Optics and Lasers in Engineering, 2020, 134, 106279.	3.8	15
12	Photothermal super resolution imaging: A comparison of different thermographic reconstruction techniques. NDT and E International, 2020, 111, 102228.	3.7	13
13	Laser excited super resolution thermal imaging for nondestructive inspection of internal defects. Scientific Reports, 2020, 10, 22357.	3.3	12
14	Localization of Subsurface Defects in Uncoated Aluminum with Structured Heating Using High-Power VCSEL Laser Arrays. International Journal of Thermophysics, 2019, 40, 1.	2.1	5
15	Thermal wave interference with high-power VCSEL arrays for locating vertically oriented subsurface defects. AIP Conference Proceedings, 2018, , .	0.4	0
16	Thermography using a 1D laser array â€“ From planar to structured heating. Materialpruefung/Materials Testing, 2018, 60, 749-757.	2.2	6
17	Calibration of thermographic spot weld testing with X-ray computed tomography. Quantitative InfraRed Thermography Journal, 2017, 14, 122-131.	4.2	8
18	Subsurface Defect Localization by Structured Heating Using Laser Projected Photothermal Thermography. Journal of Visualized Experiments, 2017, , .	0.3	4

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19	Laser based spot weld characterization. AIP Conference Proceedings, 2016, , .	0.4	1
20	Laser-projected photothermal thermography using thermal wave field interference for subsurface defect characterization. Applied Physics Letters, 2016, 109, .	3.3	10
21	Spatial and temporal control of thermal waves by using DMDs for interference based crack detection. Proceedings of SPIE, 2016, , .	0.8	6
22	Examination of Spot Welded Joints with Active Thermography. Journal of Nondestructive Evaluation, 2016, 35, 1.	2.4	21
23	WÃrmebehandlung und zerstÃ¶rungsfreie PrÃ¼fung: OberflÃchenrisse mit der Laser-Thermografie finden*. HTM - Journal of Heat Treatment and Materials, 2015, 70, 190-195.	0.2	1
24	Influence of the acquisition parameters on the performance of laser-thermography for crack detection in metallic components. , 2014, , .		9
25	Non-destructive testing of Cu solder connections using active thermography. NDT and E International, 2012, 52, 103-111.	3.7	20
26	Spectroscopic analysis of packaging concepts for high-power diode laser bars. Applied Physics A: Materials Science and Processing, 2012, 107, 371-377.	2.3	11
27	Efficient data evaluation for thermographic crack detection. Quantitative InfraRed Thermography Journal, 2011, 8, 119-123.	4.2	33
28	Catastrophic Optical Damage at Front and Rear Facets of 975 nm Emitting Diode Lasers. , 2011, , .		0
29	Mechanisms and fast kinetics of the catastrophic optical damage (COD) in GaAsâ€based diode lasers. Laser and Photonics Reviews, 2011, 5, 422-441.	8.7	75
30	Two-dimensional carrier density distribution inside a high power tapered laser diode. Applied Physics Letters, 2011, 98, 221110.	3.3	3
31	Imaging Catastrophic Optical Mirror Damage in High-Power Diode Lasers. Journal of Electronic Materials, 2010, 39, 709-714.	2.2	9
32	Defect Imaging in Laser Diodes by Mapping Their Near-Infrared Emission. Journal of Electronic Materials, 2010, 39, 723-726.	2.2	0
33	Physical limits of semiconductor laser operation: A time-resolved analysis of catastrophic optical damage. Applied Physics Letters, 2010, 97, .	3.3	29
34	Time resolved studies of catastrophic optical mirror damage in red-emitting laser diodes. Journal of Applied Physics, 2010, 107, 123116.	2.5	14
35	Time-resolved analysis of catastrophic optical damage in 975 nm emitting diode lasers. Applied Physics Letters, 2010, 96, 251105.	3.3	18
36	Catastrophic optical damage at front and rear facets of diode lasers. Applied Physics Letters, 2010, 97, 231101.	3.3	29

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37	Catastrophic optical mirror damage in diode lasers monitored during single pulse operation. , 2010, , .		0
38	Microthermography of diode lasers: The impact of light propagation on image formation. Journal of Applied Physics, 2009, 105, 014502.	2.5	16
39	Catastrophic optical mirror damage of high power diode lasers. , 2009, , .		1
40	Gradual degradation of GaAsâ€based quantum well lasers, creation of defects, and generation of compressive strain. Physica Status Solidi (A) Applications and Materials Science, 2009, 206, 1912-1915.	1.8	11
41	Catastrophic optical mirror damage in diode lasers monitored during single-pulse operation. Applied Physics Letters, 2009, 94, 191101.	3.3	37
42	New approaches towards the understanding of the catastrophic optical damage process in in-plane diode lasers. Proceedings of SPIE, 2009, , .	0.8	4
43	Thermal processes in high-power laser bars investigated by spatially resolved thermoreflectance. Journal of Materials Science: Materials in Electronics, 2008, 19, 150-154.	2.2	13
44	Optical and thermal characteristics of narrow-ridge quantum-cascade lasers. Journal of Applied Physics, 2008, 103, 083113.	2.5	16
45	Visualization of heat flows in high-power diode lasers by lock-in thermography. Applied Physics Letters, 2008, 92, 103513.	3.3	7
46	Surface recombination and facet heating in high-power diode lasers. Applied Physics Letters, 2008, 92, .	3.3	26
47	Real-time thermal imaging of catastrophic optical damage in red-emitting high-power diode lasers. Applied Physics Letters, 2008, 92, 103514.	3.3	27
48	Infrared emission from the substrate of GaAs-based semiconductor lasers. Applied Physics Letters, 2008, 93, .	3.3	11
49	Cavity-enhanced thermal emission from semiconductor lasers. Journal of Applied Physics, 2008, 103, 104508.	2.5	14
50	Accurate determination of absolute temperatures of GaAs based high-power diode lasers. , 2008, , .		3
51	Screening of high power laser diode bars in terms of stresses and thermal profiles. , 2008, , .		3
52	Catastrophic optical damage in high-power diode lasers monitored by real-time imaging. , 2008, , .		0
53	Thermal Imaging of Actively Cooled High-Power Laser Bars. , 2007, , .		1
54	Degradation behavior and thermal properties of red (650 nm) high-power diode single emitters and laser bars. , 2007, , .		2

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55	Gradual degradation of red-emitting high-power diode laser bars. Applied Physics Letters, 2007, 90, 171113.	3.3	7
56	Physics, growth, and performance of (In,Ga)Asâ€“AlP/InP quantum-cascade lasers emitting atÎ» < 4 Î¼m. Physica Status Solidi (B): Basic Research, 2007, 244, 2906-2915.	1.5	6
57	Proton-Implanted Shallow-Ridge Quantum-Cascade Laser. IEEE Journal of Quantum Electronics, 2006, 42, 490-493.	1.9	7
58	Transient thermal properties of high-power diode laser bars. Applied Physics Letters, 2006, 89, 263506.	3.3	42
59	Strain-compensated AlAs/(In,Ga)As heterostructures for short-wavelength intersubband absorption and laser emission. Journal of Crystal Growth, 2005, 278, 526-531.	1.5	1
60	Near-infrared intersubband transitions in InGaAsâ€“AlAsâ€“InAlAs double quantum wells. Journal of Applied Physics, 2005, 97, 113538.	2.5	5
61	High-power short-wavelength quantum cascade lasers. , 2005, 5738, 13.		6
62	Electron-optical-phonon interaction in the In0.73Ga0.27Asâ€“AlAs intersubband laser. Applied Physics Letters, 2005, 87, 072104.	3.3	11
63	Above room temperature operation of short wavelength (Î»=3.8Î¼m) strain-compensated In0.73Ga0.27Asâ€“AlAs quantum-cascade lasers. Applied Physics Letters, 2004, 85, 1478-1480.	3.3	66