

# Benjamin Klusemann

## List of Publications by Citations

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109  
papers

1,323  
citations

20  
h-index

32  
g-index

120  
ext. papers

1,740  
ext. citations

3.5  
avg, IF

5.23  
L-index

#	Paper	IF	Citations
109	Generation of 3D representative volume elements for heterogeneous materials: A review. <i>Progress in Materials Science</i> , <b>2018</b> , 96, 322-384	42.2	165
108	A Review of the Application of Machine Learning and Data Mining Approaches in Continuum Materials Mechanics. <i>Frontiers in Materials</i> , <b>2019</b> , 6,	4	111
107	Homogenization methods for multi-phase elastic composites with non-elliptical reinforcements: Comparisons and benchmarks. <i>European Journal of Mechanics, A/Solids</i> , <b>2012</b> , 34, 21-37	3.7	67
106	Experimental and numerical investigation of residual stresses in laser shock peened AA2198. <i>Journal of Materials Processing Technology</i> , <b>2018</b> , 255, 294-307	5.3	57
105	Thermomechanical characterization of Portevin-Chélier bands in AlMg3 (AA5754) and modeling based on a modified Estrin-McCormick approach. <i>International Journal of Plasticity</i> , <b>2015</b> , 67, 192-216	7.6	47
104	Process development for wire-based laser metal deposition of 5087 aluminium alloy by using fibre laser. <i>Journal of Manufacturing Processes</i> , <b>2018</b> , 34, 721-732	5	36
103	Plastic deformation induced microstructure evolution through gradient enhanced crystal plasticity based on a non-convex Helmholtz energy. <i>International Journal of Plasticity</i> , <b>2013</b> , 48, 168-188	7.6	35
102	Investigation of the deformation behavior of Fe-3Si sheet metal with large grains via crystal plasticity and finite-element modeling. <i>Computational Materials Science</i> , <b>2012</b> , 52, 25-32	3.2	35
101	Modeling and simulation of deformation behavior, orientation gradient development and heterogeneous hardening in thin sheets with coarse texture. <i>International Journal of Plasticity</i> , <b>2013</b> , 50, 109-126	7.6	32
100	Materials by design: An experimental and computational investigation on the microanatomy arrangement of porous metallic glasses. <i>Acta Materialia</i> , <b>2014</b> , 77, 411-422	8.4	32
99	Automatic three-dimensional geometry and mesh generation of periodic representative volume elements for matrix-inclusion composites. <i>Advances in Engineering Software</i> , <b>2016</b> , 99, 177-188	3.6	32
98	Analysis of the Mechanical Properties of an Arc-Sprayed WC-FeCSiMn Coating: Nanoindentation and Simulation. <i>Journal of Thermal Spray Technology</i> , <b>2011</b> , 20, 328-335	2.5	30
97	An image morphing method for 3D reconstruction and FE-analysis of pore networks in thermal spray coatings. <i>Computational Materials Science</i> , <b>2010</b> , 47, 881-889	3.2	28
96	Characterization of grain microstructure development in the aluminum alloy EN AW-6060 during extrusion. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , <b>2010</b> , 527, 6568-6573	5.3	28
95	A computational study of a model of single-crystal strain-gradient viscoplasticity with an interactive hardening relation. <i>International Journal of Solids and Structures</i> , <b>2014</b> , 51, 2754-2764	3.1	27
94	Experimentally validated multi-step simulation strategy to predict the fatigue crack propagation rate in residual stress fields after laser shock peening. <i>International Journal of Fatigue</i> , <b>2019</b> , 124, 265-276	5	27
93	Microstructure-Based Modeling of Residual Stresses in WC-12Co-Sprayed Coatings. <i>Journal of Thermal Spray Technology</i> , <b>2012</b> , 21, 96-107	2.5	25

92	Fiber laser welding of dissimilar titanium (Ti-6Al-4V/cp-Ti) T-joints and their laser forming process for aircraft application. <i>Optics and Laser Technology</i> , <b>2017</b> , 96, 123-131	4.2	24
91	Artificial neural network for correction of effects of plasticity in equibiaxial residual stress profiles measured by hole drilling. <i>Journal of Strain Analysis for Engineering Design</i> , <b>2017</b> , 52, 137-151	1.3	21
90	Effect of Laser Peening Process Parameters and Sequences on Residual Stress Profiles. <i>Metals</i> , <b>2019</b> , 9, 655	2.3	21
89	Application of non-convex rate dependent gradient plasticity to the modeling and simulation of inelastic microstructure development and inhomogeneous material behavior. <i>Computational Materials Science</i> , <b>2013</b> , 80, 51-60	3.2	20
88	Computational modelling of submicron-sized metallic glasses. <i>Philosophical Magazine</i> , <b>2014</b> , 94, 1-19	1.6	18
87	Microstructure and microhardness of wire-based laser metal deposited AA5087 using an Ytterbium fibre laser. <i>Materials Characterization</i> , <b>2018</b> , 143, 59-67	3.9	17
86	Numerical Investigation of the Effect of Rolling on the Localized Stress and Strain Induction for Wire + Arc Additive Manufactured Structures. <i>Journal of Materials Engineering and Performance</i> , <b>2019</b> , 28, 4931-4942	1.6	16
85	Crack closure mechanisms in residual stress fields generated by laser shock peening: A combined experimental-numerical approach. <i>Engineering Fracture Mechanics</i> , <b>2019</b> , 221, 106630	4.2	16
84	Application of design of experiments for laser shock peening process optimization. <i>International Journal of Advanced Manufacturing Technology</i> , <b>2019</b> , 102, 1567-1581	3.2	16
83	Microstructure by design: An approach of grain refinement and isotropy improvement in multi-layer wire-based laser metal deposition. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , <b>2020</b> , 772, 138635	5.3	16
82	Two models for gradient inelasticity based on non-convex energy. <i>Computational Materials Science</i> , <b>2012</b> , 64, 96-100	3.2	15
81	Microstructural pattern formation in finite-deformation single-slip crystal plasticity under cyclic loading: Relaxation vs. gradient plasticity. <i>Computer Methods in Applied Mechanics and Engineering</i> , <b>2014</b> , 278, 765-793	5.7	14
80	Fully periodic RVEs for technological relevant composites: not worth the effort!. <i>Journal of Mechanics of Materials and Structures</i> , <b>2017</b> , 12, 471-484	1.2	14
79	On the application of laser shock peening for retardation of surface fatigue cracks in laser beam-welded AA6056. <i>Fatigue and Fracture of Engineering Materials and Structures</i> , <b>2020</b> , 43, 1500-1513 <sup>3</sup>		14
78	Experimental-numerical study of laser-shock-peening-induced retardation of fatigue crack propagation in Ti-17 titanium alloy. <i>International Journal of Fatigue</i> , <b>2021</b> , 145, 106081	5	14
77	Experimentally established correlation of friction surfacing process temperature and deposit geometry. <i>Surface and Coatings Technology</i> , <b>2020</b> , 397, 126040	4.4	12
76	Modeling of a thermomechanical process chain for sheet steels. <i>International Journal of Mechanical Sciences</i> , <b>2013</b> , 74, 46-54	5.5	11
75	Anisotropy and size effect in tensile mechanical properties of Al-Cu-Li 2198 alloy. <i>Procedia Structural Integrity</i> , <b>2017</b> , 5, 13-18	1	10

74	Surface modification methods for fatigue properties improvement of laser-beam-welded Ti-6Al-4V butt joints. <i>Procedia Structural Integrity</i> , <b>2018</b> , 13, 273-278	1	10
73	Thermal analysis of wire-based direct energy deposition of Al-Mg using different laser irradiances. <i>Additive Manufacturing</i> , <b>2019</b> , 29, 100800	6.1	9
72	Multiscale process simulation of residual stress fields of laser beam welded precipitation hardened AA6082. <i>Materialia</i> , <b>2018</b> , 3, 243-255	3.2	8
71	Characterization of dissimilar friction stir welded lap joints of AA5083 and GL D36 steel. <i>Journal of Materials Research and Technology</i> , <b>2020</b> , 9, 15132-15142	5.5	7
70	The Influence of Laser Shock Peening on Fatigue Properties of AA2024-T3 Alloy with a Fastener Hole. <i>Metals</i> , <b>2020</b> , 10, 495	2.3	7
69	The effect of yield surface curvature change by cross hardening on forming limit diagrams of sheets. <i>International Journal of Mechanical Sciences</i> , <b>2016</b> , 117, 53-66	5.5	7
68	Homogenization modeling of thin-layer-type microstructures. <i>International Journal of Solids and Structures</i> , <b>2012</b> , 49, 1828-1838	3.1	7
67	The plastic yield and flow behavior in metallic glasses. <i>Applied Physics Letters</i> , <b>2015</b> , 106, 051903	3.4	6
66	Inherent and induced anisotropic finite visco-plasticity with applications to the forming of DC06 sheets. <i>International Journal of Mechanical Sciences</i> , <b>2014</b> , 89, 101-111	5.5	6
65	Modeling and simulation of size effects in metallic glasses with a nonlocal continuum mechanics theory. <i>Journal of the Mechanical Behavior of Materials</i> , <b>2013</b> , 22, 51-66	1.9	6
64	On the influence of laser beam welding parameters for autogenous AA2198 welded joints. <i>International Journal of Advanced Manufacturing Technology</i> , <b>2020</b> , 110, 2079-2092	3.2	6
63	Experimental and numerical thermo-mechanical analysis of wire-based laser metal deposition of Al-Mg alloys. <i>Journal of Manufacturing Processes</i> , <b>2021</b> , 64, 982-995	5	6
62	Microstructure, mechanical and functional properties of refill friction stir spot welds on multilayered aluminum foils for battery application. <i>Journal of Materials Research and Technology</i> , <b>2021</b> ,	5.5	6
61	Influence of Mg content in Al alloys on processing characteristics and dynamically recrystallized microstructure of friction surfacing deposits. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , <b>2021</b> , 819, 141407	5.3	6
60	Experimental Investigation of Temperature Distribution during Wire-Based Laser Metal Deposition of the Al-Mg Alloy 5087. <i>Materials Science Forum</i> , <b>2018</b> , 941, 988-994	0.4	6
59	Improved mechanical properties of cast Mg alloy welds via texture weakening by differential rotation refill friction stir spot welding. <i>Scripta Materialia</i> , <b>2021</b> , 203, 114113	5.6	6
58	Mechanical Performance Prediction for Friction Riveting Joints of Dissimilar Materials via Machine Learning. <i>Procedia Manufacturing</i> , <b>2020</b> , 47, 615-622	1.5	5
57	Fundamental study on additive manufacturing of aluminum alloys by friction surfacing layer deposition <b>2019</b> ,		5

56	Analysis and comparison of two finite element algorithms for dislocation density based crystal plasticity. <i>GAMM Mitteilungen</i> , <b>2013</b> , 36, 219-238	1.8	5
55	Effect of the Gap Width in AZ31 Magnesium Alloy Joints Obtained by Friction Stir Welding. <i>Journal of Materials Research and Technology</i> , <b>2021</b> ,	5.5	5
54	Fatigue Life Extension of AA2024 Specimens and Integral Structures by Laser Shock Peening. <i>MATEC Web of Conferences</i> , <b>2018</b> , 165, 18001	0.3	5
53	Characterization of the Microstructure Evolution in IF-Steel and AA6016 during Plane-Strain Tension and Simple Shear. <i>Materials</i> , <b>2015</b> , 8, 285-301	3.5	4
52	Thermal analysis of laser additive manufacturing of aluminium alloys: Experiment and simulation <b>2018</b> ,		4
51	Fast, curvature-based prediction of rolling forces for porous media based on a series of detailed simulations. <i>Advances in Engineering Software</i> , <b>2011</b> , 42, 142-150	3.6	4
50	Phase-field modelling for fatigue crack growth under laser shock peening-induced residual stresses. <i>Archive of Applied Mechanics</i> , <b>2021</b> , 91, 3709-3723	2.2	4
49	Assessing the Bonding Interface Characteristics and Mechanical Properties of Bobbin Tool Friction Stir Welded Dissimilar Aluminum Alloy Joints. <i>Acta Metallurgica Sinica (English Letters)</i> , <b>2021</b> , 34, 125-134	2.5	4
48	Modeling precipitation kinetics for multi-phase and multi-component systems using particle size distributions via a moving grid technique. <i>Acta Materialia</i> , <b>2021</b> , 215, 117053	8.4	4
47	Diffusion-driven microstructure evolution in OpenCalphad. <i>Computational Materials Science</i> , <b>2020</b> , 175, 109236	3.2	3
46	Thermomechanical Simulation of Friction Stir Welding of Aluminum Using an Adaptive Element-Free Galerkin Method. <i>Proceedings in Applied Mathematics and Mechanics</i> , <b>2017</b> , 17, 473-474	0.2	3
45	Acceleration of material-dominated calculations via phase-space simplicial subdivision and interpolation. <i>International Journal for Numerical Methods in Engineering</i> , <b>2015</b> , 103, 256-274	2.4	3
44	Fourth-order strain-gradient phase mixture model for nanocrystalline fcc materials. <i>Modelling and Simulation in Materials Science and Engineering</i> , <b>2016</b> , 24, 085016	2	3
43	The scaled boundary finite element method for computational homogenization of heterogeneous media. <i>International Journal for Numerical Methods in Engineering</i> , <b>2019</b> , 118, 1-17	2.4	3
42	Microstructure and hardness evolution of laser metal deposited AA5087 wall-structures. <i>Procedia CIRP</i> , <b>2018</b> , 74, 131-135	1.8	3
41	Revealing joining mechanism in refill friction stir spot welding of AZ31 magnesium alloy to galvanized DP600 steel. <i>Materials and Design</i> , <b>2021</b> , 209, 109997	8.1	3
40	Multimodal analysis of spatially heterogeneous microstructural refinement and softening mechanisms in three-pass friction stir processed Al-4Si alloy. <i>Journal of Alloys and Compounds</i> , <b>2021</b> , 887, 161351	5.7	3
39	Experimental and Numerical Analysis of Refill Friction Stir Spot Welding of Thin AA7075-T6 Sheets. <i>Materials</i> , <b>2021</b> , 14,	3.5	3

38	A directional modification of the Levkovitch&Bvendsen cross-hardening model based on the stress deviator. <i>Mechanics of Materials</i> , <b>2015</b> , 86, 21-30	3.3	2
37	Two-Pass Friction Stir Welding of Cladded API X65. <i>Procedia Manufacturing</i> , <b>2020</b> , 47, 1010-1015	1.5	2
36	Stability of phase transformation models for Ti-6Al-4V under cyclic thermal loading imposed during laser metal deposition <b>2018</b> ,		2
35	Application of Adaptive Element-Free Galerkin Method to Simulate Friction Stir Welding of Aluminum. <i>Procedia Engineering</i> , <b>2017</b> , 207, 580-585		2
34	Modelling and simulation of dynamic microstructure evolution of aluminium alloys during thermomechanically coupled extrusion process. <i>International Journal of Material Forming</i> , <b>2010</b> , 3, 363-366		2
33	Computational modeling of amorphous polymers: A Lagrangian logarithmic strain space formulation of a glass&Rubber constitutive model. <i>Computer Methods in Applied Mechanics and Engineering</i> , <b>2019</b> , 344, 887-909	5.7	2
32	Application of stress intensity factor superposition in residual stress fields considering crack closure. <i>Engineering Fracture Mechanics</i> , <b>2021</b> , 243, 107415	4.2	2
31	Precipitation Kinetics of AA6082: An Experimental and Numerical Investigation. <i>Materials Science Forum</i> , <b>2018</b> , 941, 1411-1417	0.4	2
30	Comparing the local-global deformation mechanism in different friction stir welding sequences of Ti-4Al-0.005B titanium alloy T-joints. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , <b>2021</b> , 823, 141698	5.3	2
29	Effect of filler wire and post weld heat treatment on the mechanical properties of laser beam-welded AA2198. <i>Materials Characterization</i> , <b>2021</b> , 178, 111257	3.9	2
28	Multiphase-field modeling of temperature-driven intermetallic compound evolution in an Al&Mg system for application to solid-state joining processes. <i>Modelling and Simulation in Materials Science and Engineering</i> , <b>2020</b> , 28, 085003	2	1
27	Finite element modeling of laser beam welding for residual stress calculation. <i>Proceedings in Applied Mathematics and Mechanics</i> , <b>2017</b> , 17, 415-416	0.2	1
26	Lengthscale-dependent modelling of ductile failure in metallic microstructures. <i>International Journal of Materials and Structural Integrity</i> , <b>2010</b> , 4, 141	0.3	1
25	Coupled Modeling Approach for Laser Shock Peening of AA2198-T3: From Plasma and Shock Wave Simulation to Residual Stress Prediction. <i>Metals</i> , <b>2022</b> , 12, 107	2.3	1
24	Hybrid Modelling by Machine Learning Corrections of Analytical Model Predictions towards High-Fidelity Simulation Solutions. <i>Materials</i> , <b>2021</b> , 14,	3.5	1
23	Two-step simulation approach for laser shock peening. <i>Proceedings in Applied Mathematics and Mechanics</i> , <b>2019</b> , 19, e201900497	0.2	1
22	Investigation of friction stir welding process applied to ASTM 572 steel plate cladded with Inconel 625. <i>Welding in the World, Le Soudage Dans Le Monde</i> , <b>2021</b> , 65, 393-403	1.9	1
21	Tailoring of residual stresses by specific use of defined prestress during laser shock peening. <i>Journal of Materials Processing Technology</i> , <b>2021</b> , 295, 117154	5.3	1

20	Fundamental study of multi-track friction surfacing deposits for dissimilar aluminum alloys with application to additive manufacturing. <i>Materials and Design</i> , <b>2022</b> , 110786	8.1	1
19	Friction Riveting of 3D Printed Polyamide 6 with AA 6056-T6. <i>Procedia Manufacturing</i> , <b>2020</b> , 47, 406-412	1.5	0
18	Combined experimental- numerical study on residual stresses induced by a single impact as elementary process of mechanical peening. <i>Strain</i> , <b>2020</b> , 56, e12338	1.7	0
17	Mechanical performance optimization of similar thin AA 7075-T6 sheets produced by refill friction stir spot welding. <i>Materialwissenschaft Und Werkstofftechnik</i> , <b>2020</b> , 51, 830-835	0.9	0
16	Compression Behaviour of Wire + Arc Additive Manufactured Structures. <i>Metals</i> , <b>2021</b> , 11, 877	2.3	0
15	Effect of Laser Peen Forming Process Parameters on Bending and Surface Quality of Ti-6Al-4V Sheets. <i>Journal of Materials Processing Technology</i> , <b>2022</b> , 117578	5.3	0
14	Combined experimental-numerical analysis of the temperature evolution and distribution during friction surfacing. <i>Surface and Coatings Technology</i> , <b>2022</b> , 437, 128350	4.4	0
13	Laser shock peening process modelling and experimental validation of AA2198-T3 and AA2198-T8. <i>Proceedings in Applied Mathematics and Mechanics</i> , <b>2017</b> , 17, 423-424	0.2	
12	Non-local modeling of size effects in amorphous metals. <i>Proceedings in Applied Mathematics and Mechanics</i> , <b>2014</b> , 14, 529-530	0.2	
11	Modeling of PLLA near glass transition temperatures. <i>Proceedings in Applied Mathematics and Mechanics</i> , <b>2017</b> , 17, 455-456	0.2	
10	Two model formulations for gradient crystal plasticity. <i>Proceedings in Applied Mathematics and Mechanics</i> , <b>2012</b> , 12, 815-818	0.2	
9	Modeling and numerical simulation of multiscale behavior in polycrystals via extended crystal plasticity. <i>Proceedings in Applied Mathematics and Mechanics</i> , <b>2011</b> , 11, 531-532	0.2	
8	Modeling and simulation of the microstructural behaviour in thermal sprayed coatings. <i>Proceedings in Applied Mathematics and Mechanics</i> , <b>2009</b> , 9, 421-422	0.2	
7	Modeling Induced Flow Anisotropy and Phase Transformations in Air Hardening Steels. <i>Key Engineering Materials</i> , <b>2012</b> , 504-506, 443-448	0.4	
6	Homogenization Approach Based on Laminates. <i>Proceedings in Applied Mathematics and Mechanics</i> , <b>2010</b> , 10, 419-420	0.2	
5	Modeling of Sheet Metals with Coarse Texture via Crystal Plasticity. <i>Conference Proceedings of the Society for Experimental Mechanics</i> , <b>2013</b> , 101-110	0.3	
4	Modeling of microstructural pattern formation in crystal plasticity. <i>Proceedings in Applied Mathematics and Mechanics</i> , <b>2016</b> , 16, 361-362	0.2	
3	Fatigue Crack Propagation Influenced by Laser Shock Peening Introduced Residual Stress Fields in Aluminium Specimens. <i>Lecture Notes in Mechanical Engineering</i> , <b>2020</b> , 617-631	0.4	

- 2 Investigation of Temperature Evolution and Flash Formation at AA5083 Studs during Friction Surfacing. *Materials Science Forum*, 1016, 660-665 0.4
- 1 Changes in processing characteristics and microstructural evolution during friction extrusion of aluminum. *International Journal of Material Forming*, 2022, 15, 1 2