

Marc Bernacki

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/5591239/publications.pdf>

Version: 2024-02-01

119
papers

4,279
citations

126858

33
h-index

118793

62
g-index

123
all docs

123
docs citations

123
times ranked

2929
citing authors

#	ARTICLE	IF	CITATIONS
1	Statistical behaviour of interfaces subjected to curvature flow and torque effects applied to microstructural evolutions. <i>Acta Materialia</i> , 2022, 222, 117459.	3.8	13
2	Level-Set Modeling of Grain Growth in 316L Stainless Steel under Different Assumptions Regarding Grain Boundary Properties. <i>Materials</i> , 2022, 15, 2434.	1.3	2
3	Formation of Coarse Recrystallized Grains in 6016 Aluminum Alloy During Holding After Hot Deformation. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2022, 53, 2402-2425.	1.1	2
4	Full-Field Modeling of Heat Transfer in Asteroid Regolith: 2. Effects of Porosity. <i>Journal of Geophysical Research E: Planets</i> , 2022, 127, .	1.5	7
5	A new analytical test case for anisotropic grain growth problems. <i>Applied Mathematical Modelling</i> , 2021, 93, 28-52.	2.2	7
6	Handling tensors using tensorial Kelvin bases: application to olivine polycrystal deformation modeling using elastically anisotropic CPFEM. <i>Computational Mechanics</i> , 2021, 67, 955-967.	2.2	6
7	A level set approach to simulate grain growth with an evolving population of second phase particles. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2021, 29, 035009.	0.8	10
8	A new front-tracking Lagrangian model for the modeling of dynamic and post-dynamic recrystallization. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2021, 29, 035004.	0.8	3
9	Grain size characterization in metallic alloys using different microscopy and post-processing techniques. <i>Materials Characterization</i> , 2021, 174, 110977.	1.9	10
10	A 2D Front-Tracking Lagrangian Model for the Modeling of Anisotropic Grain Growth. <i>Materials</i> , 2021, 14, 4219.	1.3	4
11	Comparative Study and Limits of Different Level-Set Formulations for the Modeling of Anisotropic Grain Growth. <i>Materials</i> , 2021, 14, 3883.	1.3	9
12	A new finite element approach to model microscale strain localization within olivine aggregates. <i>Solid Earth</i> , 2021, 12, 2369-2385.	1.2	2
13	Dissolution of the Primary Ni_3Al Precipitates and Grain Growth during Solution Treatment of Three Nickel Base Superalloys. <i>Metals</i> , 2021, 11, 1921.	1.0	14
14	A 2D level set finite element grain coarsening study with heterogeneous grain boundary energies. <i>Applied Mathematical Modelling</i> , 2020, 78, 505-518.	2.2	19
15	A new finite element strategy to simulate microstructural evolutions. <i>Computational Materials Science</i> , 2020, 172, 109335.	1.4	15
16	Asteroid (101955) Bennu's weak boulders and thermally anomalous equator. <i>Science Advances</i> , 2020, 6, .	4.7	83
17	Full field modeling of dynamic recrystallization in a CPFEM context – Application to 304L steel. <i>Computational Materials Science</i> , 2020, 184, 109892.	1.4	11
18	On the role of solute drag in reconciling laboratory and natural constraints on olivine grain growth kinetics. <i>Geophysical Journal International</i> , 2020, 224, 1360-1370.	1.0	8

#	ARTICLE	IF	CITATIONS
19	Viewpoint on the Formation and Evolution of Annealing Twins During Thermomechanical Processing of FCC Metals and Alloys. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2020, 51, 2665-2684.	1.1	61
20	A mean field model of agglomeration as an extension to existing precipitation models. <i>Acta Materialia</i> , 2020, 192, 40-51.	3.8	4
21	Full-Field Modeling of Heat Transfer in Asteroid Regolith: 1. Radiative Thermal Conductivity of Polydisperse Particulates. <i>Journal of Geophysical Research E: Planets</i> , 2020, 125, e2019JE006100.	1.5	22
22	A new numerical framework for the full field modeling of dynamic recrystallization in a CPFEM context. <i>Computational Materials Science</i> , 2020, 179, 109645.	1.4	18
23	Probabilistic and deterministic full field approaches to simulate recrystallization in ODS steels. <i>Computational Materials Science</i> , 2020, 179, 109646.	1.4	8
24	Full Field and Mean Field Modeling of Grain Growth in a Multiphase Material Under Dry Conditions: Application to Peridotites. <i>Journal of Geophysical Research: Solid Earth</i> , 2020, 125, e2019JB018138.	1.4	5
25	Experimental and Simulation Study of the Effect of Precipitation Distribution and Grain Size on the AD730TM Ni-Based Polycrystalline Superalloy Tensile Behavior. <i>Minerals, Metals and Materials Series</i> , 2020, , 570-578.	0.3	3
26	A novel highly efficient Lagrangian model for massively multidomain simulation applied to microstructural evolutions. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2020, 367, 113107.	3.4	15
27	DIGIMU [®] : Full field recrystallization simulations for optimization of multi-pass processes. <i>AIP Conference Proceedings</i> , 2019, , .	0.3	7
28	Estimation of geometrically necessary dislocation density from filtered EBSD data by a local linear adaptation of smoothing splines. <i>Journal of Applied Crystallography</i> , 2019, 52, 548-563.	1.9	30
29	The operational environment and rotational acceleration of asteroid (101955) Bennu from OSIRIS-REx observations. <i>Nature Communications</i> , 2019, 10, 1291.	5.8	99
30	The dynamic geophysical environment of (101955) Bennu based on OSIRIS-REx measurements. <i>Nature Astronomy</i> , 2019, 3, 352-361.	4.2	132
31	Evidence for widespread hydrated minerals on asteroid (101955) Bennu. <i>Nature Astronomy</i> , 2019, 3, 332-340.	4.2	251
32	Properties of rubble-pile asteroid (101955) Bennu from OSIRIS-REx imaging and thermal analysis. <i>Nature Astronomy</i> , 2019, 3, 341-351.	4.2	188
33	Craters, boulders and regolith of (101955) Bennu indicative of an old and dynamic surface. <i>Nature Geoscience</i> , 2019, 12, 242-246.	5.4	161
34	Shape of (101955) Bennu indicative of a rubble pile with internal stiffness. <i>Nature Geoscience</i> , 2019, 12, 247-252.	5.4	179
35	The unexpected surface of asteroid (101955) Bennu. <i>Nature</i> , 2019, 568, 55-60.	13.7	364
36	Computational Methods for Ductile Fracture Modeling at the Microscale. <i>Archives of Computational Methods in Engineering</i> , 2019, 26, 1153-1192.	6.0	12

#	ARTICLE	IF	CITATIONS
37	A comparative study of image segmentation methods for micromechanical simulations of ductile damage. <i>Computational Materials Science</i> , 2019, 159, 43-65.	1.4	12
38	Introduction to the level-set full field modeling of laths spheroidization phenomenon in α/β titanium alloys. <i>International Journal of Material Forming</i> , 2019, 12, 173-183.	0.9	3
39	Full-Field Approach for Modeling of Microstructural Evolutions During Forming Processes. , 2019, , .		0
40	Void growth and coalescence in a three-dimensional non-periodic void cluster. <i>International Journal of Solids and Structures</i> , 2018, 139-140, 65-78.	1.3	12
41	Full field modeling of recrystallization: Effect of intragranular strain gradients on grain boundary shape and kinetics. <i>Computational Materials Science</i> , 2018, 150, 149-161.	1.4	16
42	A new topological approach for the mean field modeling of dynamic recrystallization. <i>Materials and Design</i> , 2018, 146, 194-207.	3.3	21
43	Macroscopic thermal finite element modeling of additive metal manufacturing by selective laser melting process. <i>Computer Methods in Applied Mechanics and Engineering</i> , 2018, 331, 514-535.	3.4	56
44	Experimental-Numerical Validation Framework for Micromechanical Simulations. <i>Lecture Notes in Applied and Computational Mechanics</i> , 2018, , 147-161.	2.0	0
45	Ductile fracture of a metal matrix composite studied using 3D numerical modeling of void nucleation and coalescence. <i>Engineering Fracture Mechanics</i> , 2018, 189, 110-132.	2.0	31
46	Recent advances in finite element modelling of ductile fracture at mesoscale. <i>Procedia Manufacturing</i> , 2018, 15, 39-45.	1.9	2
47	A novel level-set finite element formulation for grain growth with heterogeneous grain boundary energies. <i>Materials and Design</i> , 2018, 160, 578-590.	3.3	32
48	2D and 3D simulation of grain growth in olivine aggregates using a full field model based on the level set method. <i>Physics of the Earth and Planetary Interiors</i> , 2018, 283, 98-109.	0.7	12
49	On the calibration of elastoplastic parameters at the microscale via X-ray microtomography and digital volume correlation for the simulation of ductile damage. <i>European Journal of Mechanics, A/Solids</i> , 2018, 72, 287-297.	2.1	24
50	On the Coupling between Recrystallization and Precipitation Following Hot Deformation in a γ/β Nickel-Based Superalloy. <i>Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science</i> , 2018, 49, 4199-4213.	1.1	31
51	Prediction of the grain size evolution during thermal treatments at the mesoscopic scale: a numerical framework and industrial examples. <i>Materiaux Et Techniques</i> , 2018, 106, 105.	0.3	2
52	An adaptive level-set method with enhanced volume conservation for simulations in multiphase domains. <i>International Journal for Numerical Methods in Engineering</i> , 2017, 109, 555-576.	1.5	26
53	Modelling the transport of geometrically necessary dislocations on slip systems: application to single- and multi-crystals of ice. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2017, 25, 025010.	0.8	6
54	On the choice of boundary conditions for micromechanical simulations based on 3D imaging. <i>International Journal of Solids and Structures</i> , 2017, 112, 83-96.	1.3	37

#	ARTICLE	IF	CITATIONS
55	Statistical analysis of dislocations and dislocation boundaries from EBSD data. Ultramicroscopy, 2017, 179, 63-72.	0.8	95
56	Numerical validation framework for micromechanical simulations based on synchrotron 3D imaging. Computational Mechanics, 2017, 59, 419-441.	2.2	43
57	Influence of Lode angle on modelling of void closure in hot metal forming processes. Finite Elements in Analysis and Design, 2017, 126, 13-25.	1.7	20
58	Modeling of dynamic and post-dynamic recrystallization by coupling a full field approach to phenomenological laws. Materials and Design, 2017, 133, 498-519.	3.3	50
59	Numerical simulation of mechanical deformation of semi-solid material using a level-set based finite element method. Modelling and Simulation in Materials Science and Engineering, 2017, 25, 065020.	0.8	5
60	Numerical modeling of ductile fracture at the microscale combined with X-ray laminography and digital volume correlation. AIP Conference Proceedings, 2017, , .	0.3	0
61	Evolution of the Annealing Twin Density during $\hat{\gamma}$ -Supersolvus Grain Growth in the Nickel-Based Superalloy Inconel $\hat{7}18$. Metals, 2016, 6, 5.	1.0	29
62	A new algorithm for dense ellipse packing and polygonal structures generation in context of FEM or DEM. MATEC Web of Conferences, 2016, 80, 02004.	0.1	6
63	Full field modeling of dynamic recrystallization in a global level set framework, application to 304L stainless steel. MATEC Web of Conferences, 2016, 80, 02005.	0.1	1
64	3D level set modeling of static recrystallization considering stored energy fields. Computational Materials Science, 2016, 122, 57-71.	1.4	48
65	Improvement of 3D mean field models for capillarity-driven grain growth based on full field simulations. Journal of Materials Science, 2016, 51, 10970-10981.	1.7	14
66	Introduction to the level-set full field modeling of laths spheroidization phenomenon in $\hat{\alpha}/\hat{\beta}^2$ titanium alloys. MATEC Web of Conferences, 2016, 80, 02003.	0.1	2
67	Advancing layer algorithm of dense ellipse packing for generating statistically equivalent polygonal structures. Granular Matter, 2016, 18, 1.	1.1	14
68	Permeability Computation on a Representative Volume Element (RVE) of Unidirectional Disordered Fiber Arrays. Journal of Computational Mathematics, 2016, 34, 223-239.	0.2	3
69	About quantitative EBSD analysis of deformation and recovery substructures in pure Tantalum. IOP Conference Series: Materials Science and Engineering, 2015, 89, 012038.	0.3	110
70	Selective Growth of Low Stored Energy Grains During $\hat{\gamma}$ Sub-solvus Annealing in the Inconel 718 Nickel-Based Superalloy. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2015, 46, 4405-4421.	1.1	99
71	New finite element developments for the full field modeling of microstructural evolutions using the level-set method. Computational Materials Science, 2015, 109, 388-398.	1.4	52
72	Thermo-mechanical factors influencing annealing twin development in nickel during recrystallization. Journal of Materials Science, 2015, 50, 5191-5203.	1.7	43

#	ARTICLE	IF	CITATIONS
73	Room temperature thin foil SLIM-cut using an epoxy paste: experimental versus theoretical results. <i>Materials Research Express</i> , 2015, 2, 046203.	0.8	9
74	A new body-fitted immersed volume method for the modeling of ductile fracture at the microscale: Analysis of void clusters and stress state effects on coalescence. <i>Engineering Fracture Mechanics</i> , 2015, 147, 398-417.	2.0	34
75	2D finite element modeling of misorientation dependent anisotropic grain growth in polycrystalline materials: Level set versus multi-phase-field method. <i>Computational Materials Science</i> , 2015, 104, 108-123.	1.4	29
76	An efficient and parallel level set reinitialization method “ Application to micromechanics and microstructural evolutions. <i>Applied Mathematical Modelling</i> , 2015, 39, 7291-7302.	2.2	63
77	Observation of annealing twin nucleation at triple lines in nickel during grain growth. <i>Acta Materialia</i> , 2015, 99, 63-68.	3.8	73
78	A geometry-dependent model for void closure in hot metal forming. <i>Finite Elements in Analysis and Design</i> , 2015, 105, 63-78.	1.7	31
79	Void closure criteria for hot metal forming: A review. <i>Journal of Manufacturing Processes</i> , 2015, 19, 239-250.	2.8	46
80	Finite Element Simulation of Multi Material Metal Forming. <i>Procedia Engineering</i> , 2014, 81, 2427-2432.	1.2	4
81	Understanding and Modeling of Void Closure Mechanisms in Hot Metal Forming Processes: A Multiscale Approach. <i>Procedia Engineering</i> , 2014, 81, 137-142.	1.2	12
82	Annealing twin development during recrystallization and grain growth in pure nickel. <i>Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2014, 597, 295-303.	2.6	175
83	A new finite element approach for modelling ductile damage void nucleation and growth “analysis of loading path effect on damage mechanisms. <i>Modelling and Simulation in Materials Science and Engineering</i> , 2014, 22, 075001.	0.8	26
84	Assessment of simplified 2D grain growth models from numerical experiments based on a level set framework. <i>Computational Materials Science</i> , 2014, 92, 305-312.	1.4	35
85	Development of a level set methodology to simulate grain growth in the presence of real secondary phase particles and stored energy “ Application to a nickel-base superalloy. <i>Computational Materials Science</i> , 2014, 89, 233-241.	1.4	49
86	Room temperature kerfless silicon thin foils obtained via a stress inducing epoxy layer. <i>Physica Status Solidi C: Current Topics in Solid State Physics</i> , 2014, 11, 1644-1647.	0.8	6
87	A level-set and anisotropic adaptive remeshing strategy for the modeling of void growth under large plastic strain. <i>Computational Materials Science</i> , 2013, 68, 32-46.	1.4	24
88	Thermo-mechanical and fracture properties in single-crystal silicon. <i>Journal of Materials Science</i> , 2013, 48, 979-988.	1.7	126
89	Three-dimensional analysis of real void closure at the meso-scale during hot metal forming processes. <i>Computational Materials Science</i> , 2013, 77, 194-201.	1.4	34
90	Analysis of stress intensity factors and T-stress to control crack propagation for kerf-less spalling of single crystal silicon foils. <i>Computational Materials Science</i> , 2013, 69, 243-250.	1.4	16

#	ARTICLE	IF	CITATIONS
91	Optimized Dropping and Rolling (ODR) method for packing of poly-disperse spheres. Applied Mathematical Modelling, 2013, 37, 5715-5722.	2.2	44
92	Evolution of Microstructure in Pure Nickel during Processing for Grain Boundary Engineering. Materials Science Forum, 2013, 753, 97-100.	0.3	4
93	Strain Induced Abnormal Grain Growth in Nickel Base Superalloys. Materials Science Forum, 2013, 753, 321-324.	0.3	31
94	Elastic foam compression in a finite element (FE) context. European Journal of Computational Mechanics, 2013, 22, 30-58.	0.6	0
95	Mean Field and Finite Element Modeling of Static and Dynamic Recrystallization. Materials Science Forum, 2012, 715-716, 737-737.	0.3	0
96	Techniques for modelling microstructure in metal forming processes. , 2012, , 17-34.		0
97	Precise generation of complex statistical Representative Volume Elements (RVEs) in a finite element context. Computational Materials Science, 2012, 61, 224-238.	1.4	57
98	Understanding and Modeling of Grain Boundary Pinning in Inconel 718. , 2012, , .		7
99	Advanced numerical method for generation of three-dimensional particles and its application in microstructure-based simulation of fatigue behavior. Computational Materials Science, 2011, 50, 2836-2847.	1.4	3
100	Level set framework for the finite-element modelling of recrystallization and grain growth in polycrystalline materials. Scripta Materialia, 2011, 64, 525-528.	2.6	100
101	Advanced Numerical methods for F. E. Simulation of Metal Forming Processes. , 2010, , .		5
102	A multi-scale approach for high cycle anisotropic fatigue resistance: Application to forged components. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2010, 527, 4654-4663.	2.6	10
103	3D finite element model of semi-solid permeability in an equiaxed granular structure. Computational Materials Science, 2010, 49, 158-170.	1.4	31
104	Finite element model of primary recrystallization in polycrystalline aggregates using a level set framework. Modelling and Simulation in Materials Science and Engineering, 2009, 17, 064006.	0.8	92
105	On the role of particles distribution on damage and fatigue mechanisms. International Journal of Material Forming, 2009, 2, 935-938.	0.9	2
106	Adaptive mesh refinement and automatic remeshing in crystal plasticity finite element simulations. Modelling and Simulation in Materials Science and Engineering, 2009, 17, 075012.	0.8	38
107	Multiaxial fatigue criterion accounting for anisotropy in forged components. International Journal of Material Forming, 2008, 1, 379-382.	0.9	1
108	Level set framework for the numerical modelling of primary recrystallization in polycrystalline materials. Scripta Materialia, 2008, 58, 1129-1132.	2.6	103

#	ARTICLE	IF	CITATIONS
109	Linking plastic deformation to recrystallization in metals using digital microstructures. Philosophical Magazine, 2008, 88, 3691-3712.	0.7	55
110	Development Of Numerical Tools For The Multiscale Modelling Of Recrystallization In Metals, Based On A Digital Material Framework. AIP Conference Proceedings, 2007, , .	0.3	10
111	Numerical Modelling of Plastic Deformation and Subsequent Recrystallization in Polycrystalline Materials, Based on a Digital Material Framework. Materials Science Forum, 2007, 558-559, 1133-1138.	0.3	1
112	Parallel discontinuous Galerkin unstructured mesh solvers for the calculation of three-dimensional wave propagation problems. Applied Mathematical Modelling, 2006, 30, 744-763.	2.2	31
113	TIME-DOMAIN PARALLEL SIMULATION OF HETEROGENEOUS WAVE PROPAGATION ON UNSTRUCTURED GRIDS USING EXPLICIT, NONDIFFUSIVE, DISCONTINUOUS GALERKIN METHODS. Journal of Computational Acoustics, 2006, 14, 57-81.	1.0	23
114	A DISSIPATION-FREE TIME-DOMAIN DISCONTINUOUS GALERKIN METHOD APPLIED TO THREE-DIMENSIONAL LINEARIZED EULER EQUATIONS AROUND A STEADY-STATE NON-UNIFORM INVISCID FLOW. Journal of Computational Acoustics, 2006, 14, 445-467.	1.0	7
115	Formation of Annealing Twins during Recrystallization and Grain Growth in 304L Austenitic Stainless Steel. Materials Science Forum, 0, 753, 113-116.	0.3	54
116	Advances in Level-Set Modeling of Recrystallization at the Polycrystal Scale - Development of the Digi- <i>1/4</i> Software. Key Engineering Materials, 0, 651-653, 617-623.	0.4	7
117	Parallelization of an efficient 2D-Lagrangian model for massive multi-domain simulations.. Modelling and Simulation in Materials Science and Engineering, 0, , .	0.8	2
118	Numerical Modelling of Plastic Deformation and Subsequent Recrystallization in Polycrystalline Materials, Based on a Digital Material Framework. Materials Science Forum, 0, , 1133-1138.	0.3	1
119	Modelling of Primary Recrystallization using Digital Microstructures. Ceramic Transactions, 0, , 757-769.	0.1	0