

# Thomas Hochrainer

## List of Publications by Year in descending order

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37  
papers

1,143  
citations

567281

15  
h-index

501196

28  
g-index

37  
all docs

37  
docs citations

37  
times ranked

823  
citing authors

#	ARTICLE	IF	CITATIONS
1	DAMASK – The Düsseldorf Advanced Material Simulation Kit for modeling multi-physics crystal plasticity, thermal, and damage phenomena from the single crystal up to the component scale. Computational Materials Science, 2019, 158, 420-478.	3.0	440
2	Continuum dislocation dynamics: Towards a physical theory of crystal plasticity. Journal of the Mechanics and Physics of Solids, 2014, 63, 167-178.	4.8	141
3	Continuum modeling of dislocation plasticity: Theory, numerical implementation, and validation by discrete dislocation simulations. Journal of Materials Research, 2011, 26, 623-632.	2.6	85
4	Thermodynamically consistent continuum dislocation dynamics. Journal of the Mechanics and Physics of Solids, 2016, 88, 12-22.	4.8	58
5	Some steps towards a continuum representation of 3D dislocation systems. Scripta Materialia, 2006, 54, 717-721.	5.2	50
6	Dislocation multiplication by cross-slip and glissile reaction in a dislocation based continuum formulation of crystal plasticity. Journal of the Mechanics and Physics of Solids, 2019, 132, 103695.	4.8	43
7	INVESTIGATION OF SIZE-EFFECTS IN MACHINING WITH GEOMETRICALLY DEFINED CUTTING EDGES. Machining Science and Technology, 2007, 11, 447-473.	2.5	34
8	Twinning Models in Self-Consistent Texture Simulations of TWIP Steels. Steel Research International, 2008, 79, 645-652.	1.8	34
9	Dislocation multiplication in stage II deformation of fcc multi-slip single crystals. Journal of the Mechanics and Physics of Solids, 2018, 119, 319-333.	4.8	34
10	2D-simulation of Material Flow During Infeed Rotary Swaging Using Finite Element Method. Procedia Engineering, 2014, 81, 2342-2347.	1.2	31
11	Instability of dislocation fluxes in a single slip: Deterministic and stochastic models of dislocation patterning. Physical Review B, 2018, 98, .	3.2	28
12	Diffuse interface modeling of void growth in irradiated materials. Mathematical, thermodynamic and atomistic perspectives. Current Opinion in Solid State and Materials Science, 2014, 18, 90-98.	11.5	25
13	Comparison of texture evolution in fcc metals predicted by various grain cluster homogenization schemes. International Journal of Materials Research, 2009, 100, 500-509.	0.3	24
14	Multiscale Simulation of Plasticity in bcc Metals. Annual Review of Materials Research, 2015, 45, 369-390.	9.3	18
15	Asymptotic and uncertainty analyses of a phase field model for void formation under irradiation. Computational Materials Science, 2014, 89, 165-175.	3.0	17
16	A sharp interface model for void growth in irradiated materials. Philosophical Magazine, 2015, 95, 948-972.	1.6	13
17	Numerical Implementation of Continuum Dislocation Dynamics with the Discontinuous-Galerkin Method.. Materials Research Society Symposia Proceedings, 2014, 1651, 1.	0.1	9
18	Is crystal plasticity non-conservative? Lessons from large deformation continuum dislocation theory. Journal of the Mechanics and Physics of Solids, 2020, 141, 103957.	4.8	8

#	ARTICLE	IF	CITATIONS
19	Development of mean-field continuum dislocation kinematics with junction reactions using de Rham currents and graph theory. <i>Journal of the Mechanics and Physics of Solids</i> , 2022, 158, 104685.	4.8	6
20	Texture prediction from a novel grain cluster-based homogenization scheme. <i>International Journal of Material Forming</i> , 2009, 2, 523-526.	2.0	5
21	Towards Frank-Read Sources in the Continuum Dislocation Dynamics Theory. , 2011, , .		5
22	Fundamentals of a continuum theory of dislocations. , 2006, , .		5
23	Higher order alignment tensors for continuum dislocation dynamics. <i>Materials Research Society Symposia Proceedings</i> , 2013, 1535, 5101.	0.1	4
24	Three-Dimensional Continuum Dislocation Dynamics Simulations of Dislocation Structure Evolution in Bending of a Micro-Beam. <i>MRS Advances</i> , 2016, 1, 1791-1796.	0.9	4
25	Blood Rheology Influence on False Lumen Thrombosis in Type B Aortic Dissection. , 0, , .		4
26	Continuum Dislocation Dynamics Based on the Second Order Alignment Tensor. <i>Materials Research Society Symposia Proceedings</i> , 2014, 1651, 1.	0.1	3
27	On the Derivation of Boundary Conditions for Continuum Dislocation Dynamics. <i>Crystals</i> , 2017, 7, 235.	2.2	3
28	Dynamics of curved dislocation ensembles. <i>Physical Review B</i> , 2021, 103, .	3.2	3
29	Analysing discrete dislocation data using alignment and curvature tensors. <i>Comptes Rendus Physique</i> , 2021, 22, 249-266.	0.9	3
30	Sensitivity Analysis of a Phenomenological Thrombosis Model and Growth Rate Characterisation. , 0, , .		3
31	Leaving the Slip System – Cross Slip in Continuum Dislocation Dynamics. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2019, 19, e201900441.	0.2	2
32	Relative Helicity and Jog Densities in Continuum Descriptions of Dislocations. <i>MRS Advances</i> , 2016, 1, 1847-1852.	0.9	1
33	Symposium on Modelling Complex Materials: Materials Behavior below the Scale of the Representative Volume Element. , 2009, , .		0
34	Crystal Plasticity Finite Element Simulations based on Continuum Dislocation Dynamics. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2016, 16, 325-326.	0.2	0
35	Experimental Validation of RVE Based Failure Simulations of Macro-Porous Materials. <i>Proceedings in Applied Mathematics and Mechanics</i> , 2016, 16, 365-366.	0.2	0
36	Dislocation Dynamics as Gradient Descent in a Space of Currents. <i>Advanced Structured Materials</i> , 2018, , 207-221.	0.5	0

#	ARTICLE	IF	CITATIONS
37	Making sense of dislocation correlations. Materials Theory, 2022, 6, .	4.3	0