

# Dirk Steglich

## List of Publications by Year in descending order

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Version: 2024-02-01

68  
papers

1,950  
citations

257450

24  
h-index

243625

44  
g-index

72  
all docs

72  
docs citations

72  
times ranked

1155  
citing authors

#	ARTICLE	IF	CITATIONS
1	Yielding of magnesium: From single crystal to polycrystalline aggregates. International Journal of Plasticity, 2007, 23, 1957-1978.	8.8	243
2	Modeling of crack growth in round bars and plane strain specimens. International Journal of Solids and Structures, 2001, 38, 8259-8284.	2.7	163
3	Modeling of plane strain ductile rupture. International Journal of Plasticity, 2003, 19, 1517-1541.	8.8	113
4	Micromechanical modelling of the behaviour of ductile materials including particles. Computational Materials Science, 1997, 9, 7-17.	3.0	97
5	Anisotropic ductile fracture of Al 2024 alloys. Engineering Fracture Mechanics, 2008, 75, 3692-3706.	4.3	84
6	Simulation of failure under cyclic plastic loading by damage models. International Journal of Plasticity, 2006, 22, 2146-2170.	8.8	79
7	Fracture and damage mechanics modelling of thin-walled structures – An overview. Engineering Fracture Mechanics, 2009, 76, 5-43.	4.3	75
8	Material modeling of AZ31 Mg sheet considering variation of r-values and asymmetry of the yield locus. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2012, 549, 82-92.	5.6	73
9	Crack extension in aluminium welds: a numerical approach using the Gurson–Tvergaard–Needleman model. Engineering Fracture Mechanics, 2004, 71, 2365-2383.	4.3	70
10	Mechanical characterization and constitutive modeling of Mg alloy sheets. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 2012, 540, 174-186.	5.6	67
11	Biaxial deformation behaviour of AZ31 magnesium alloy: Crystal-plasticity-based prediction and experimental validation. International Journal of Solids and Structures, 2012, 49, 3551-3561.	2.7	66
12	Interaction between anisotropic plastic deformation and damage evolution in Al 2198 sheet metal. Engineering Fracture Mechanics, 2010, 77, 3501-3518.	4.3	58
13	Mechanical Testing of Thin Sheet Magnesium Alloys in Biaxial Tension and Uniaxial Compression. Experimental Mechanics, 2014, 54, 1247-1258.	2.0	58
14	Micromechanical modelling of cyclic plasticity incorporating damage. International Journal of Solids and Structures, 2005, 42, 337-351.	2.7	57
15	Micromechanical modeling of damage due to particle cracking in reinforced metals. Computational Materials Science, 1999, 16, 404-413.	3.0	53
16	Predicting crack growth resistance of aluminium sheets. Computational Materials Science, 2003, 26, 1-12.	3.0	44
17	Crack Extension at an Interface: Prediction of Fracture Toughness and Simulation of Crack Path Deviation. International Journal of Fracture, 2005, 134, 209-229.	2.2	42
18	Numerical simulation of crack extension in aluminium welds. Computational Materials Science, 2003, 28, 723-731.	3.0	37

#	ARTICLE	IF	CITATIONS
19	Mechanism-based modelling of plastic deformation in magnesium alloys. <i>European Journal of Mechanics, A/Solids</i> , 2016, 55, 289-303.	3.7	34
20	Anisotropic Deformation and Damage in Aluminium 2198 T8 Sheets. <i>International Journal of Damage Mechanics</i> , 2010, 19, 131-152.	4.2	32
21	Texture-based forming limit prediction for Mg sheet alloys ZE10 and AZ31. <i>International Journal of Mechanical Sciences</i> , 2016, 117, 102-114.	6.7	30
22	Fracture prediction based on a two-surface plasticity law for the anisotropic magnesium alloys AZ31 and ZE10. <i>International Journal of Plasticity</i> , 2018, 105, 1-23.	8.8	30
23	Modelling direction-dependent hardening in magnesium sheet forming simulations. <i>International Journal of Material Forming</i> , 2011, 4, 243-253.	2.0	29
24	Combining peridynamic and finite element simulations to capture the corrosion of degradable bone implants and to predict their residual strength. <i>International Journal of Mechanical Sciences</i> , 2022, 220, 107143.	6.7	28
25	Experimental and numerical investigation of Mg alloy sheet formability. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2013, 586, 204-214.	5.6	27
26	Experimental and numerical crushing analyses of thin-walled magnesium profiles. <i>International Journal of Crashworthiness</i> , 2015, 20, 177-190.	1.9	27
27	Performing RVE calculations under constant stress triaxiality for monotonous and cyclic loading. <i>International Journal for Numerical Methods in Engineering</i> , 2006, 66, 1331-1360.	2.8	22
28	Hole expansion of advanced high strength steel sheet sample. <i>International Journal of Material Forming</i> , 2010, 3, 247-250.	2.0	22
29	Failure of Magnesium Sheets Under Monotonic Loading: 3D Examination of Fracture Mode and Mechanisms. <i>International Journal of Fracture</i> , 2013, 183, 105-112.	2.2	19
30	Unloading behaviors of the rare-earth magnesium alloy ZE10 sheet. <i>Journal of Magnesium and Alloys</i> , 2021, 9, 927-936.	11.9	15
31	Modelling of plastic deformation in magnesium. <i>International Journal of Material Forming</i> , 2009, 2, 45-48.	2.0	14
32	Micromechanical Modelling of the Damage and Toughness Behaviour of Nodular Cast Iron Materials. <i>European Physical Journal Special Topics</i> , 1996, 06, C6-43-C6-52.	0.2	12
33	Mechanical characterisation of Mg alloys and model parameter identification for sheet forming simulations. <i>International Journal of Material Forming</i> , 2009, 2, 53-56.	2.0	11
34	Grain-scale investigation of the anisotropy of Portevin-Le Chatelier effect in Mg AZ91 alloy. <i>Materials Science &amp; Engineering A: Structural Materials: Properties, Microstructure and Processing</i> , 2019, 740-741, 226-234.	5.6	11
35	Forming of Magnesium – Crystal Plasticity and Plastic Potentials. <i>Advanced Engineering Materials</i> , 2007, 9, 803-806.	3.5	10
36	Crashworthiness of Magnesium Sheet Structures. <i>Materials Science Forum</i> , 0, 765, 590-594.	0.3	10

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37	Damage Models for Cyclic Plasticity. Key Engineering Materials, 2003, 251-252, 389-398.	0.4	9
38	A constitutive law for the thermo-mechanical modelling of magnesium alloy extrusion. International Journal of Material Forming, 2012, 5, 325-339.	2.0	9
39	Structural Integrity Assessment by Models of Ductile Crack Extension in Sheet Metal. Steel Research International, 2003, 74, 504-513.	1.8	8
40	Thermo-mechanical modelling of indirect extrusion process for magnesium alloys. International Journal of Material Forming, 2009, 2, 49-52.	2.0	8
41	Finite element damage analysis of an underwater gliderâ€“ship collision. Journal of Marine Science and Technology, 2016, 21, 261-270.	2.9	7
42	Modelling-assisted description of anisotropic edge failure in magnesium sheet alloy under mixed-mode loading. International Journal of Mechanical Sciences, 2020, 181, 105680.	6.7	7
43	Mixed-Mode Deformation and Failure of a Magnesium Sheet Quantified using a Modified Arcan Fixture. Experimental Mechanics, 2020, 60, 109-118.	2.0	6
44	Ductile rupture of aluminum sheet materials. Revue Europeenne Des Elements, 2001, 10, 401-415.	0.1	5
45	Modelling of Thermo-Mechanical Behaviour of Magnesium Alloys during Indirect Extrusion. Key Engineering Materials, 2009, 424, 167-171.	0.4	5
46	Hybrid Methods. , 2007, , 107-136.		4
47	Modelling and Simulation of Extrusion of Magnesium Alloys. International Journal of Material Forming, 2008, 1, 419-422.	2.0	4
48	Prediction of deformation and failure anisotropy for thin magnesium sheets under mixed-mode loading. Mechanics of Materials, 2021, 163, 104064.	3.2	4
49	Structure Damage Simulation. , 2005, , 817-828.		3
50	Experimental and Numerical Bendability Analysis of a 3rd Generation Magnesium Alloy. Procedia Manufacturing, 2020, 47, 1274-1280.	1.9	3
51	Punch Test for the Simulation of Ship Hull Damage. Advanced Engineering Materials, 2002, 4, 195-200.	3.5	2
52	Damage Models for Monotonous and Cyclic Loading. Proceedings in Applied Mathematics and Mechanics, 2002, 1, 195.	0.2	1
53	Modelling of magnesium sheet forming operations. , 2013, , .		1
54	Experimental and Numerical Formability Analysis of AZ31 and ZE10 Sheets. Materials Today: Proceedings, 2015, 2, S125-S130.	1.8	1

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55	Texture-based formability prediction for Mg wrought alloys ZE10 and AZ31. AIP Conference Proceedings, 2017, , .	0.4	1
56	Forming of Magnesium " Crystal Plasticity and Plastic Potentials. AIP Conference Proceedings, 2007, , .	0.4	0
57	On the Modeling of Plastic Deformation of Magnesium Alloys. AIP Conference Proceedings, 2007, , .	0.4	0
58	Analysis of deformation-induced twinning at finite strains based on energy minimization. Proceedings in Applied Mathematics and Mechanics, 2009, 9, 331-332.	0.2	0
59	Modelling the Thermo-Mechanical Behavior of Magnesium Alloys during Indirect Extrusion. , 2010, , .		0
60	Hole Expansion Simulations of TWIP Steel Sheet Sample. , 2010, , .		0
61	Anisotropic Plastic Deformation and Damage in Commercial Al 2198 T8 Sheet Metal. Key Engineering Materials, 0, 452-453, 97-100.	0.4	0
62	Numerical Simulation of Forming Limit Test for AZ31 at 200°C. Key Engineering Materials, 2011, 473, 468-473.	0.4	0
63	Measurement and Analysis of the Biaxial Loading and Unloading Behavior of AZ31 Mg Alloy Sheet. , 2011, , .		0
64	Prediction of Crashworthiness for Extruded Magnesium Materials. Key Engineering Materials, 2015, 651-653, 1009-1014.	0.4	0
65	A mechanism-driven plasticity model for deformation by glide and twinning and its application to magnesium alloys. Journal of Physics: Conference Series, 2018, 1063, 012046.	0.4	0
66	Ductile Damage Models Applied to Anisotropic Fracture of Al2024 T351. , 2006, , 857-858.		0
67	Modeling tension-compression asymmetry and failure anisotropy in bending operations of a magnesium alloy. IOP Conference Series: Materials Science and Engineering, 2022, 1238, 012043.	0.6	0
68	Prediction of Deformation and Failure Anisotropy for Magnesium Sheets Under Mixed-Mode Loading. Minerals, Metals and Materials Series, 2022, , 607-615.	0.4	0