

Niels Bay

List of Publications by Year in descending order

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114
papers

3,741
citations

172457

29
h-index

144013

57
g-index

118
all docs

118
docs citations

118
times ranked

1692
citing authors

#	ARTICLE	IF	CITATIONS
1	Joining by plastic deformation. CIRP Annals - Manufacturing Technology, 2013, 62, 673-694.	3.6	376
2	Environmentally benign tribo-systems for metal forming. CIRP Annals - Manufacturing Technology, 2010, 59, 760-780.	3.6	253
3	Theory of single point incremental forming. CIRP Annals - Manufacturing Technology, 2008, 57, 247-252.	3.6	222
4	Single-point incremental forming and formability failure diagrams. Journal of Strain Analysis for Engineering Design, 2008, 43, 15-35.	1.8	183
5	Revisiting the fundamentals of single point incremental forming by means of membrane analysis. International Journal of Machine Tools and Manufacture, 2008, 48, 73-83.	13.4	157
6	Real area of contact and friction stress at high pressure sliding contact. Wear, 1976, 38, 201-209.	3.1	154
7	Failure mechanisms in single-point incremental forming of metals. International Journal of Advanced Manufacturing Technology, 2011, 56, 893-903.	3.0	154
8	Characterization of fracture loci in metal forming. International Journal of Mechanical Sciences, 2014, 83, 112-123.	6.7	112
9	Lubricant test methods for sheet metal forming. Tribology International, 2008, 41, 844-853.	5.9	107
10	Friction stress and normal stress in bulk metal-forming processes. Journal of Mechanical Working Technology, 1987, 14, 203-223.	0.1	98
11	Cold Pressure Welding The Mechanisms Governing Bonding. Journal of Engineering for Industry, 1979, 101, 121-127.	0.8	97
12	The state of the art in cold forging lubrication. Journal of Materials Processing Technology, 1994, 46, 19-40.	6.3	93
13	Multi Stage Strategies for Single Point Incremental Forming of a Cup. International Journal of Material Forming, 2008, 1, 1199-1202.	2.0	80
14	Entrapment and escape of liquid lubricant in metal forming. Wear, 1999, 232, 134-139.	3.1	78
15	Strategies and limits in multi-stage single-point incremental forming. Journal of Strain Analysis for Engineering Design, 2010, 45, 33-44.	1.8	72
16	Single point incremental forming of tailored blanks produced by friction stir welding. Journal of Materials Processing Technology, 2009, 209, 811-820.	6.3	68
17	Revisiting single-point incremental forming and formability/failure diagrams by means of finite elements and experimentation. Journal of Strain Analysis for Engineering Design, 2009, 44, 221-234.	1.8	59
18	Application of hard coatings for blanking and piercing tools. Wear, 2011, 270, 850-856.	3.1	59

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19	Weld bonding of stainless steel. International Journal of Machine Tools and Manufacture, 2004, 44, 1431-1439.	13.4	51
20	Milled die steel surface roughness correlation with steel sheet friction. CIRP Annals - Manufacturing Technology, 2010, 59, 577-580.	3.6	51
21	Review of friction modeling in metal forming processes. Journal of Materials Processing Technology, 2018, 255, 234-241.	6.3	50
22	Skin-pass rolling "Studies on roughness transfer and elongation under pure normal loading. International Journal of Machine Tools and Manufacture, 2008, 48, 1313-1317.	13.4	45
23	Bending Under Tension Test with Direct Friction Measurement. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2006, 220, 73-80.	2.4	43
24	Real area of contact and friction stress " The role of trapped lubricant. Wear, 1977, 43, 45-53.	3.1	41
25	FEM Simulation of Friction Testing Method Based on Combined Forward Rod-Backward Can Extrusion. Journal of Tribology, 1997, 119, 501-506.	1.9	39
26	Friction Compensation in the Upsetting of Cylindrical Test Specimens. Experimental Mechanics, 2016, 56, 1271-1279.	2.0	37
27	Quantification of galling in sheet metal forming by surface topography characterisation. International Journal of Machine Tools and Manufacture, 1998, 38, 503-510.	13.4	33
28	Fatigue in cold-forging dies: tool life analysis. Journal of Materials Processing Technology, 1999, 95, 40-48.	6.3	31
29	Modelling of real area of contact between tool and workpiece in metal forming processes including the influence of subsurface deformation. CIRP Annals - Manufacturing Technology, 2016, 65, 261-264.	3.6	31
30	Friction coefficients in cold forging: A global perspective. CIRP Annals - Manufacturing Technology, 2018, 67, 261-264.	3.6	31
31	Ra and the average effective strain of surface asperities deformed in metal-working processes. Wear, 1975, 34, 77-84.	3.1	29
32	Finite-element modelling of cold forward extrusion. Journal of Materials Processing Technology, 1999, 94, 85-93.	6.3	29
33	Influence of Workpiece Surface Topography on the Mechanisms of Liquid Lubrication in Strip Drawing. Journal of Tribology, 2001, 123, 290-294.	1.9	29
34	Real area of contact between a rough tool and a smooth workpiece at high normal pressures. Wear, 1976, 38, 225-234.	3.1	26
35	FEM Simulation of a Friction Testing Method Based on Combined Forward Conical Can-Backward Straight Can Extrusion. Journal of Tribology, 1998, 120, 716-723.	1.9	26
36	3D numerical simulation of projection welding of square nuts to sheets. Journal of Materials Processing Technology, 2015, 215, 171-180.	6.3	26

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37	Two new methods for testing lubricants for cold forging. Journal of Mechanical Working Technology, 1986, 13, 189-204.	0.1	25
38	Skin-pass rolling – Studies of roughness transfer under combined normal and tangential loading. International Journal of Machine Tools and Manufacture, 2008, 48, 1308-1312.	13.4	25
39	Weld nugget formation in resistance spot welding of new lightweight sandwich material. International Journal of Advanced Manufacturing Technology, 2015, 80, 1137-1147.	3.0	25
40	Prediction of limits of lubrication in strip reduction testing. CIRP Annals - Manufacturing Technology, 2004, 53, 231-234.	3.6	24
41	Manufacture of functional surfaces through combined application of tool manufacturing processes and Robot Assisted Polishing. CIRP Annals - Manufacturing Technology, 2012, 61, 563-566.	3.6	22
42	Control of material flow in a combined backward can - forward rod extrusion. Journal of Materials Processing Technology, 1996, 60, 141-147.	6.3	21
43	Physical modelling and numerical simulation of the round-to-square forward extrusion. Journal of Materials Processing Technology, 2001, 112, 244-251.	6.3	20
44	Contact Conditions in Skin-pass Rolling. CIRP Annals - Manufacturing Technology, 2007, 56, 301-306.	3.6	20
45	Development of a flexible tool system for small quantity production in cold forging. Journal of Materials Processing Technology, 1997, 71, 36-42.	6.3	19
46	Analysis of Pick-Up Development in Punching. CIRP Annals - Manufacturing Technology, 2002, 51, 185-190.	3.6	19
47	Cross shear roll bonding. Journal of Materials Processing Technology, 1994, 45, 1-6.	6.3	18
48	A methodology for off-line evaluation of new environmentally friendly tribo-systems for sheet metal forming. CIRP Annals - Manufacturing Technology, 2013, 62, 231-234.	3.6	17
49	Friction measurement and modelling in forward rod extrusion tests. Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, 2003, 217, 71-82.	1.8	16
50	Analysis of fluid lubrication mechanisms in metal forming at mesoscopic scale. CIRP Annals - Manufacturing Technology, 2012, 61, 271-274.	3.6	16
51	Physical modeling and numerical simulation of V-die forging ingot with central void. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2014, 228, 2347-2356.	2.1	16
52	Limits of lubrication in backward can extrusion: analysis by the finite-element method and physical modelling experiments. Journal of Materials Processing Technology, 1996, 61, 275-286.	6.3	15
53	Overview of friction modelling in metal forming processes. Procedia Engineering, 2017, 207, 2257-2262.	1.2	15
54	The Influence of Tool Texture on Friction and Lubrication in Strip Reduction Testing. Lubricants, 2017, 5, 3.	2.9	15

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55	Deformation analysis of the round-to-square extrusion: a numerical and experimental investigation. Finite Elements in Analysis and Design, 2000, 35, 269-282.	3.2	13
56	Modelling of skinpass rolling by elasto-plastic analysis of plane strain upsetting. Journal of Materials Processing Technology, 2006, 177, 509-512.	6.3	13
57	Three-dimensional simulations of resistance spot welding. Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering, 2015, 229, 885-897.	1.9	13
58	Detection of the Onset of Galling in Strip Reduction Testing Using Acoustic Emission. Procedia Engineering, 2017, 183, 59-64.	1.2	13
59	Tool/workpiece interface stresses in simple upsetting. Journal of Mechanical Working Technology, 1987, 14, 263-282.	0.1	12
60	Simulation of defects in metal forming - an example. Journal of Materials Processing Technology, 1994, 45, 527-532.	6.3	12
61	Predicting the onset of cracks in bulk metal forming by ductile damage criteria. Procedia Engineering, 2017, 207, 2048-2053.	1.2	12
62	Continuous Strip Reduction Test Simulating Tribological Conditions in Ironing. Procedia Engineering, 2017, 207, 2286-2291.	1.2	12
63	Influence of tool roughness and lubrication on contact conditions in skin-pass rolling. Journal of Materials Processing Technology, 2009, 209, 4835-4841.	6.3	11
64	A quantitative lubricant test for deep drawing. International Journal of Surface Science and Engineering, 2010, 4, 2.	0.4	10
65	Influence of surface pretreatment in resistance spot welding of aluminum AA1050. Production and Manufacturing Research, 2015, 3, 185-200.	1.5	10
66	Mechanical processing of Ag/BSCCO high temperature superconductor tape. Journal of Materials Processing Technology, 2004, 151, 18-26.	6.3	9
67	A Study on DLC Tool Coating for Deep Drawing and Ironing of Stainless Steel. Key Engineering Materials, 0, 767, 181-188.	0.4	9
68	Process investigation and mechanical properties of electro sinter forged (ESF) titanium discs. International Journal of Advanced Manufacturing Technology, 2019, 104, 1985-1998.	3.0	9
69	Influence of process parameters in drawing of superconducting wire. IEEE Transactions on Applied Superconductivity, 1999, 9, 2577-2580.	1.7	8
70	Contact Modelling in Resistance Welding. Part 1: Algorithms and Numerical Verification. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2006, 220, 599-606.	2.4	8
71	Thermal Analysis of Bending Under Tension Test. Procedia Engineering, 2014, 81, 1805-1810.	1.2	7
72	Analysis of flat rolling of superconducting silver/ceramic composites. CIRP Annals - Manufacturing Technology, 2001, 50, 201-204.	3.6	6

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73	Influences of lubricant pocket geometry and working conditions upon micro-lubrication mechanisms in upsetting and strip drawing. International Journal of Surface Science and Engineering, 2010, 4, 42.	0.4	6
74	Testing and modelling of new tribo-systems for industrial sheet forming of stainless steels. Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, 2011, 225, 1036-1047.	1.8	6
75	Numerical simulation of lubrication mechanisms at mesoscopic scale. AIP Conference Proceedings, 2011, , .	0.4	6
76	Resistance microwelding of 316L stainless steel wire to block. Science and Technology of Welding and Joining, 2011, 16, 546-552.	3.1	6
77	Determination of Friction in Sheet Metal Forming by Means of Simulative Tribo-Tests. Key Engineering Materials, 0, 549, 415-422.	0.4	6
78	Combined numerical and experimental determination of the convective heat transfer coefficient between an AlCrN-coated Vanadis 4E tool and Rhenus oil. Measurement: Journal of the International Measurement Confederation, 2018, 127, 565-570.	5.0	6
79	The role of entrapped lubricant in asperity flattening under bulk plastic deformation. CIRP Annals - Manufacturing Technology, 2022, 71, 241-244.	3.6	6
80	Studies on Micro Plasto Hydrodynamic Lubrication in Metal Forming. , 2002, , 115-134.		5
81	Critical current and cryogenic stability modelling of filamentary MgB ₂ conductors. Journal of Physics: Conference Series, 2006, 43, 103-106.	0.4	5
82	An alternative to the conventional triaxial compression test. Powder Technology, 2006, 161, 220-226.	4.2	5
83	Contact Modelling in Resistance Welding. Part 2: Experimental Validation. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2006, 220, 607-613.	2.4	5
84	Strategic surface topographies for enhanced lubrication in sheet forming of stainless steel. International Journal of Surface Science and Engineering, 2010, 4, 68.	0.4	5
85	Off-Line Testing of Tribo-Systems for Sheet Metal Forming Production. Advanced Materials Research, 2014, 966-967, 3-20.	0.3	5
86	Revisiting liquid lubrication methods by means of a fully coupled approach combining plastic deformation and liquid lubrication. Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, 2017, 231, 1425-1433.	1.8	5
87	Acoustic emission monitoring of the bending under tension test. Procedia Engineering, 2017, 207, 1421-1426.	1.2	5
88	Electro Sinter Forging (ESF). Micromachines, 2019, 10, 218.	2.9	5
89	A combined numerical and experimental approach for determining the contact temperature in an industrial ironing operation. Journal of Materials Processing Technology, 2019, 264, 249-258.	6.3	5
90	Analysis of the risk of galling in sheet metal stamping dies with drawbeads. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2020, 234, 1207-1214.	2.4	5

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91	The influence of strain hardening and surface flank angles on asperity flattening under subsurface deformation at low normal pressures. Tribology International, 2022, 167, 107416.	5.9	5
92	Hole-flanging by single point incremental forming. , 2016, , 25-50.		4
93	3-dimensional numerical modelling of rolling of superconducting Ag/BSCCO tape. IEEE Transactions on Applied Superconductivity, 2001, 11, 3756-3759.	1.7	3
94	The influence of the roll diameter in flat rolling of superconducting in situ MgB ₂ tape. Superconductor Science and Technology, 2007, 20, 886-890.	3.5	3
95	Effect on Deformation Process of Adding a Copper Core to Multifilament MgB_2 Superconducting Wire. IEEE Transactions on Applied Superconductivity, 2007, 17, 3054-3058.	1.7	3
96	Lubricant Film Breakdown and Material Pick-Up in Sheet Forming of Advanced High Strength Steels and Stainless Steels when Using Environmental Friendly Lubricants. Advanced Materials Research, 0, 966-967, 219-227.	0.3	3
97	A study of DLC coatings for ironing of stainless steel. Journal of Physics: Conference Series, 2017, 896, 012031.	0.4	3
98	Benchmarking of Direct and Indirect Friction Tests in Micro Forming. Key Engineering Materials, 2012, 504-506, 581-586.	0.4	2
99	Open Die Forging of Large Shafts with Defects – Physical and Numerical Modelling. Key Engineering Materials, 0, 554-557, 2145-2155.	0.4	2
100	Numerical and Experimental Analysis of Resistance Projection Welding of Square Nuts to Sheets. Procedia Engineering, 2014, 81, 2141-2146.	1.2	2
101	Multi-objective Optimization of Die Geometry in Ingot Forging. Procedia Engineering, 2014, 81, 2457-2462.	1.2	2
102	Numerical Modelling of Drawbeads for Forming of Aluminium Alloys. Journal of Physics: Conference Series, 2016, 734, 032082.	0.4	2
103	International cooperation in cold forging technology: The International cold forging group. Journal of Materials Processing Technology, 1992, 35, 303-314.	6.3	1
104	Size Effects in Winding Roll Formed Profiles: A Study of Carcass Production for Flexible Pipes in Offshore Industry. Key Engineering Materials, 2013, 549, 117-124.	0.4	1
105	Improving resistance welding of aluminum sheets by addition of metal powder. Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications, 2015, 229, 493-502.	1.1	1
106	Strategic flat rolling of Ag/BSCCO-2223 tapes. Physica C: Superconductivity and Its Applications, 2002, 372-376, 966-969.	1.2	1
107	Numerical Modelling of Damage Evolution in Ingot Forging. Key Engineering Materials, 2015, 651-653, 237-242.	0.4	0
108	Simulative Winding of Roll Formed Profile in Carcass Production for Flexible Pipes. Key Engineering Materials, 0, 639, 163-170.	0.4	0

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109	Rolling: Skin-Pass. , 2016, , 3104-3116.		0
110	Determination of Viscosity Versus Pressure by Means of a Clearance Seal. Journal of Tribology, 2018, 140, .	1.9	0
111	A Simple Model Linking Surface Roughness with Friction Coefficient and Manufacturing Cost. Key Engineering Materials, 2018, 767, 275-282.	0.4	0
112	Revisiting Veermanâ€™s interpolation method. Proceedings of the Institution of Mechanical Engineers, Part L: Journal of Materials: Design and Applications, 2019, 233, 189-196.	1.1	0
113	Single-Point Incremental Forming. , 0, , 173-209.		0
114	Equipment for Off-line Testing of Sheet Tribo-systems. , 2015, , 35-40.		0