

# 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	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
2	The role of entrapped lubricant in asperity flattening under bulk plastic deformation. CIRP Annals - Manufacturing Technology, 2022, 71, 241-244.	3.6	6
3	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
4	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
5	Electro Sinter Forging (ESF). Micromachines, 2019, 10, 218.	2.9	5
6	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
7	Revisiting Veerman'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
8	Determination of Viscosity Versus Pressure by Means of a Clearance Seal. Journal of Tribology, 2018, 140, .	1.9	0
9	Review of friction modeling in metal forming processes. Journal of Materials Processing Technology, 2018, 255, 234-241.	6.3	50
10	A Simple Model Linking Surface Roughness with Friction Coefficient and Manufacturing Cost. Key Engineering Materials, 2018, 767, 275-282.	0.4	0
11	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
12	Friction coefficients in cold forging: A global perspective. CIRP Annals - Manufacturing Technology, 2018, 67, 261-264.	3.6	31
13	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
14	Detection of the Onset of Galling in Strip Reduction Testing Using Acoustic Emission. Procedia Engineering, 2017, 183, 59-64.	1.2	13
15	Predicting the onset of cracks in bulk metal forming by ductile damage criteria. Procedia Engineering, 2017, 207, 2048-2053.	1.2	12
16	Acoustic emission monitoring of the bending under tension test. Procedia Engineering, 2017, 207, 1421-1426.	1.2	5
17	Overview of friction modelling in metal forming processes. Procedia Engineering, 2017, 207, 2257-2262.	1.2	15
18	Continuous Strip Reduction Test Simulating Tribological Conditions in Ironing. Procedia Engineering, 2017, 207, 2286-2291.	1.2	12

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19	The Influence of Tool Texture on Friction and Lubrication in Strip Reduction Testing. Lubricants, 2017, 5, 3.	2.9	15
20	A study of DLC coatings for ironing of stainless steel. Journal of Physics: Conference Series, 2017, 896, 012031.	0.4	3
21	Hole-flanging by single point incremental forming. , 2016, , 25-50.		4
22	Numerical Modelling of Drawbeads for Forming of Aluminium Alloys. Journal of Physics: Conference Series, 2016, 734, 032082.	0.4	2
23	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
24	Friction Compensation in the Upsetting of Cylindrical Test Specimens. Experimental Mechanics, 2016, 56, 1271-1279.	2.0	37
25	Rolling: Skin-Pass. , 2016, , 3104-3116.		0
26	Numerical Modelling of Damage Evolution in Ingot Forging. Key Engineering Materials, 2015, 651-653, 237-242.	0.4	0
27	3D numerical simulation of projection welding of square nuts to sheets. Journal of Materials Processing Technology, 2015, 215, 171-180.	6.3	26
28	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
29	Influence of surface pretreatment in resistance spot welding of aluminum AA1050. Production and Manufacturing Research, 2015, 3, 185-200.	1.5	10
30	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
31	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
32	Equipment for Off-line Testing of Sheet Tribo-systems. , 2015, , 35-40.		0
33	Off-Line Testing of Tribo-Systems for Sheet Metal Forming Production. Advanced Materials Research, 2014, 966-967, 3-20.	0.3	5
34	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
35	Numerical and Experimental Analysis of Resistance Projection Welding of Square Nuts to Sheets. Procedia Engineering, 2014, 81, 2141-2146.	1.2	2
36	Multi-objective Optimization of Die Geometry in Ingot Forging. Procedia Engineering, 2014, 81, 2457-2462.	1.2	2

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37	Thermal Analysis of Bending Under Tension Test. Procedia Engineering, 2014, 81, 1805-1810.	1.2	7
38	Characterization of fracture loci in metal forming. International Journal of Mechanical Sciences, 2014, 83, 112-123.	6.7	112
39	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
40	Joining by plastic deformation. CIRP Annals - Manufacturing Technology, 2013, 62, 673-694.	3.6	376
41	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
42	Benchmarking of Direct and Indirect Friction Tests in Micro Forming. Key Engineering Materials, 2012, 504-506, 581-586.	0.4	2
43	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
44	Analysis of fluid lubrication mechanisms in metal forming at mesoscopic scale. CIRP Annals - Manufacturing Technology, 2012, 61, 271-274.	3.6	16
45	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
46	Failure mechanisms in single-point incremental forming of metals. International Journal of Advanced Manufacturing Technology, 2011, 56, 893-903.	3.0	154
47	Application of hard coatings for blanking and piercing tools. Wear, 2011, 270, 850-856.	3.1	59
48	Numerical simulation of lubrication mechanisms at mesoscopic scale. AIP Conference Proceedings, 2011, , .	0.4	6
49	Resistance microwelding of 316L stainless steel wire to block. Science and Technology of Welding and Joining, 2011, 16, 546-552.	3.1	6
50	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
51	Milled die steel surface roughness correlation with steel sheet friction. CIRP Annals - Manufacturing Technology, 2010, 59, 577-580.	3.6	51
52	Environmentally benign tribo-systems for metal forming. CIRP Annals - Manufacturing Technology, 2010, 59, 760-780.	3.6	253
53	A quantitative lubricant test for deep drawing. International Journal of Surface Science and Engineering, 2010, 4, 2.	0.4	10
54	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

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55	Strategies and limits in multi-stage single-point incremental forming. Journal of Strain Analysis for Engineering Design, 2010, 45, 33-44.	1.8	72
56	Single point incremental forming of tailored blanks produced by friction stir welding. Journal of Materials Processing Technology, 2009, 209, 811-820.	6.3	68
57	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
58	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
59	Skin-pass rolling II – Studies on roughness transfer and elongation under pure normal loading. International Journal of Machine Tools and Manufacture, 2008, 48, 1313-1317.	13.4	45
60	Skin-pass rolling II – Studies of roughness transfer under combined normal and tangential loading. International Journal of Machine Tools and Manufacture, 2008, 48, 1308-1312.	13.4	25
61	Multi Stage Strategies for Single Point Incremental Forming of a Cup. International Journal of Material Forming, 2008, 1, 1199-1202.	2.0	80
62	Theory of single point incremental forming. CIRP Annals - Manufacturing Technology, 2008, 57, 247-252.	3.6	222
63	Lubricant test methods for sheet metal forming. Tribology International, 2008, 41, 844-853.	5.9	107
64	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
65	Single-point incremental forming and formability – failure diagrams. Journal of Strain Analysis for Engineering Design, 2008, 43, 15-35.	1.8	183
66	The influence of the roll diameter in flat rolling of superconducting in situ MgB <sub>2</sub> tape. Superconductor Science and Technology, 2007, 20, 886-890.	3.5	3
67	Effect on Deformation Process of Adding a Copper Core to Multifilament MgB <sub>2</sub> Superconducting Wire. IEEE Transactions on Applied Superconductivity, 2007, 17, 3054-3058.	1.7	3
68	Contact Conditions in Skin-pass Rolling. CIRP Annals - Manufacturing Technology, 2007, 56, 301-306.	3.6	20
69	Critical current and cryogenic stability modelling of filamentary MgB <sub>2</sub> conductors. Journal of Physics: Conference Series, 2006, 43, 103-106.	0.4	5
70	An alternative to the conventional triaxial compression test. Powder Technology, 2006, 161, 220-226.	4.2	5
71	Modelling of skinpass rolling by elasto-plastic analysis of plane strain upsetting. Journal of Materials Processing Technology, 2006, 177, 509-512.	6.3	13
72	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

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73	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
74	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
75	Weld bonding of stainless steel. International Journal of Machine Tools and Manufacture, 2004, 44, 1431-1439.	13.4	51
76	Prediction of limits of lubrication in strip reduction testing. CIRP Annals - Manufacturing Technology, 2004, 53, 231-234.	3.6	24
77	Mechanical processing of Ag/BSCCO high temperature superconductor tape. Journal of Materials Processing Technology, 2004, 151, 18-26.	6.3	9
78	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
79	Studies on Micro Plasto Hydrodynamic Lubrication in Metal Forming. , 2002, , 115-134.		5
80	Analysis of Pick-Up Development in Punching. CIRP Annals - Manufacturing Technology, 2002, 51, 185-190.	3.6	19
81	Strategic flat rolling of Ag/BSCCO-2223 tapes. Physica C: Superconductivity and Its Applications, 2002, 372-376, 966-969.	1.2	1
82	3-dimensional numerical modelling of rolling of superconducting Ag/BSCCO tape. IEEE Transactions on Applied Superconductivity, 2001, 11, 3756-3759.	1.7	3
83	Physical modelling and numerical simulation of the round-to-square forward extrusion. Journal of Materials Processing Technology, 2001, 112, 244-251.	6.3	20
84	Analysis of flat rolling of superconducting silver/ceramic composites. CIRP Annals - Manufacturing Technology, 2001, 50, 201-204.	3.6	6
85	Influence of Workpiece Surface Topography on the Mechanisms of Liquid Lubrication in Strip Drawing. Journal of Tribology, 2001, 123, 290-294.	1.9	29
86	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
87	Influence of process parameters in drawing of superconducting wire. IEEE Transactions on Applied Superconductivity, 1999, 9, 2577-2580.	1.7	8
88	Entrapment and escape of liquid lubricant in metal forming. Wear, 1999, 232, 134-139.	3.1	78
89	Finite-element modelling of cold forward extrusion. Journal of Materials Processing Technology, 1999, 94, 85-93.	6.3	29
90	Fatigue in cold-forging dies: tool life analysis. Journal of Materials Processing Technology, 1999, 95, 40-48.	6.3	31

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91	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
92	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
93	FEM Simulation of Friction Testing Method Based on Combined Forward Rod-Backward Can Extrusion. Journal of Tribology, 1997, 119, 501-506.	1.9	39
94	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
95	Control of material flow in a combined backward can - forward rod extrusion. Journal of Materials Processing Technology, 1996, 60, 141-147.	6.3	21
96	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
97	The state of the art in cold forging lubrication. Journal of Materials Processing Technology, 1994, 46, 19-40.	6.3	93
98	Cross shear roll bonding. Journal of Materials Processing Technology, 1994, 45, 1-6.	6.3	18
99	Simulation of defects in metal forming - an example. Journal of Materials Processing Technology, 1994, 45, 527-532.	6.3	12
100	International cooperation in cold forging technology: The International cold forging group. Journal of Materials Processing Technology, 1992, 35, 303-314.	6.3	1
101	Tool/workpiece interface stresses in simple upsetting. Journal of Mechanical Working Technology, 1987, 14, 263-282.	0.1	12
102	Friction stress and normal stress in bulk metal-forming processes. Journal of Mechanical Working Technology, 1987, 14, 203-223.	0.1	98
103	Two new methods for testing lubricants for cold forging. Journal of Mechanical Working Technology, 1986, 13, 189-204.	0.1	25
104	Cold Pressure Welding—The Mechanisms Governing Bonding. Journal of Engineering for Industry, 1979, 101, 121-127.	0.8	97
105	Real area of contact and friction stress — The role of trapped lubricant. Wear, 1977, 43, 45-53.	3.1	41
106	Real area of contact and friction stress at high pressure sliding contact. Wear, 1976, 38, 201-209.	3.1	154
107	Real area of contact between a rough tool and a smooth workpiece at high normal pressures. Wear, 1976, 38, 225-234.	3.1	26
108	Ra and the average effective strain of surface asperities deformed in metal-working processes. Wear, 1975, 34, 77-84.	3.1	29

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109	Determination of Friction in Sheet Metal Forming by Means of Simulative Tribo-Tests. Key Engineering Materials, 0, 549, 415-422.	0.4	6
110	Open Die Forging of Large Shafts with Defects – Physical and Numerical Modelling. Key Engineering Materials, 0, 554-557, 2145-2155.	0.4	2
111	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
112	Simulative Winding of Roll Formed Profile in Carcass Production for Flexible Pipes. Key Engineering Materials, 0, 639, 163-170.	0.4	0
113	A Study on DLC Tool Coating for Deep Drawing and Ironing of Stainless Steel. Key Engineering Materials, 0, 767, 181-188.	0.4	9
114	Single-Point Incremental Forming. , 0, , 173-209.		0