

# TuÄrul Ã-zel

## List of Publications by Year in descending order

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109  
papers

8,801  
citations

61857

43  
h-index

45213

90  
g-index

131  
all docs

131  
docs citations

131  
times ranked

4351  
citing authors

#	ARTICLE	IF	CITATIONS
1	Machining induced surface integrity in titanium and nickel alloys: A review. International Journal of Machine Tools and Manufacture, 2011, 51, 250-280.	6.2	977
2	Recent advances in modelling of metal machining processes. CIRP Annals - Manufacturing Technology, 2013, 62, 695-718.	1.7	602
3	Predictive modeling of surface roughness and tool wear in hard turning using regression and neural networks. International Journal of Machine Tools and Manufacture, 2005, 45, 467-479.	6.2	528
4	Modified material constitutive models for serrated chip formation simulations and experimental validation in machining of titanium alloy Ti-6Al-4V. International Journal of Machine Tools and Manufacture, 2010, 50, 943-960.	6.2	399
5	The influence of friction models on finite element simulations of machining. International Journal of Machine Tools and Manufacture, 2006, 46, 518-530.	6.2	318
6	Effects of cutting edge geometry, workpiece hardness, feed rate and cutting speed on surface roughness and forces in finish turning of hardened AISI H13 steel. International Journal of Advanced Manufacturing Technology, 2005, 25, 262-269.	1.5	275
7	Determination of workpiece flow stress and friction at the chip-tool contact for high-speed cutting. International Journal of Machine Tools and Manufacture, 2000, 40, 133-152.	6.2	213
8	Modelling of surface finish and tool flank wear in turning of AISI D2 steel with ceramic wiper inserts. Journal of Materials Processing Technology, 2007, 189, 192-198.	3.1	213
9	Laser powder bed fusion of nickel alloy 625: Experimental investigations of effects of process parameters on melt pool size and shape with spatter analysis. International Journal of Machine Tools and Manufacture, 2017, 121, 22-36.	6.2	200
10	Investigations on the effects of friction modeling in finite element simulation of machining. International Journal of Mechanical Sciences, 2010, 52, 31-42.	3.6	186
11	Process simulation using finite element method - prediction of cutting forces, tool stresses and temperatures in high-speed flat end milling. International Journal of Machine Tools and Manufacture, 2000, 40, 713-738.	6.2	181
12	Neural Network Modeling and Particle Swarm Optimization (PSO) of Process Parameters in Pulsed Laser Micromachining of Hardened AISI H13 Steel. Materials and Manufacturing Processes, 2009, 24, 358-368.	2.7	173
13	Investigations on the effects of multi-layered coated inserts in machining Ti-6Al-4V alloy with experiments and finite element simulations. CIRP Annals - Manufacturing Technology, 2010, 59, 77-82.	1.7	171
14	3-D finite element process simulation of micro-end milling Ti-6Al-4V titanium alloy: Experimental validations on chip flow and tool wear. Journal of Materials Processing Technology, 2015, 221, 128-145.	3.1	170
15	High-speed machining of cast iron and alloy steels for die and mold manufacturing. Journal of Materials Processing Technology, 2000, 98, 104-115.	3.1	165
16	Experimental and finite element simulation based investigations on micro-milling Ti-6Al-4V titanium alloy: Effects of cBN coating on tool wear. Journal of Materials Processing Technology, 2013, 213, 532-542.	3.1	154
17	Prediction of machining induced residual stresses in turning of titanium and nickel based alloys with experiments and finite element simulations. CIRP Annals - Manufacturing Technology, 2012, 61, 547-550.	1.7	147
18	Multi-objective process optimization for micro-end milling of Ti-6Al-4V titanium alloy. International Journal of Advanced Manufacturing Technology, 2012, 63, 903-914.	1.5	142

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19	Determination of work material flow stress and friction for FEA of machining using orthogonal cutting tests. <i>Journal of Materials Processing Technology</i> , 2004, 153-154, 1019-1025.	3.1	139
20	Computational modelling of 3D turning: Influence of edge micro-geometry on forces, stresses, friction and tool wear in PcBN tooling. <i>Journal of Materials Processing Technology</i> , 2009, 209, 5167-5177.	3.1	138
21	Finite element modeling the influence of edge roundness on the stress and temperature fields induced by high-speed machining. <i>International Journal of Advanced Manufacturing Technology</i> , 2007, 35, 255-267.	1.5	135
22	Identification of Constitutive Material Model Parameters for High-Strain Rate Metal Cutting Conditions Using Evolutionary Computational Algorithms. <i>Materials and Manufacturing Processes</i> , 2007, 22, 659-667.	2.7	130
23	A Methodology to Determine Work Material Flow Stress and Tool-Chip Interfacial Friction Properties by Using Analysis of Machining. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , 2006, 128, 119-129.	1.3	122
24	Experiments and finite element simulations on micro-milling of Ti-6Al-4V alloy with uncoated and cBN coated micro-tools. <i>CIRP Annals - Manufacturing Technology</i> , 2011, 60, 85-88.	1.7	121
25	Influence of scan strategy and process parameters on microstructure and its optimization in additively manufactured nickel alloy 625 via laser powder bed fusion. <i>International Journal of Advanced Manufacturing Technology</i> , 2017, 90, 1393-1417.	1.5	119
26	3D FINITE ELEMENT MODELLING OF CHIP FORMATION PROCESS FOR MACHINING INCONEL 718: COMPARISON OF FE SOFTWARE PREDICTIONS. <i>Machining Science and Technology</i> , 2011, 15, 21-46.	1.4	111
27	Predictive Analytical and Thermal Modeling of Orthogonal Cutting Process—Part I: Predictions of Tool Forces, Stresses, and Temperature Distributions. <i>Journal of Manufacturing Science and Engineering, Transactions of the ASME</i> , 2006, 128, 435-444.	1.3	108
28	Prediction of machining induced microstructure in Ti-6Al-4V alloy using 3-D FE-based simulations: Effects of tool micro-geometry, coating and cutting conditions. <i>Journal of Materials Processing Technology</i> , 2015, 220, 1-26.	3.1	105
29	Modeling of hard part machining: effect of insert edge preparation in CBN cutting tools. <i>Journal of Materials Processing Technology</i> , 2003, 141, 284-293.	3.1	94
30	Optimization of process parameters for pulsed laser milling of micro-channels on AISI H13 tool steel. <i>Robotics and Computer-Integrated Manufacturing</i> , 2013, 29, 209-218.	6.1	91
31	Multi-objective optimization for turning processes using neural network modeling and dynamic-neighborhood particle swarm optimization. <i>International Journal of Advanced Manufacturing Technology</i> , 2007, 35, 234-247.	1.5	89
32	Mechanics of high speed cutting with curvilinear edge tools. <i>International Journal of Machine Tools and Manufacture</i> , 2008, 48, 195-208.	6.2	88
33	Prediction of flank wear by using back propagation neural network modeling when cutting hardened H-13 steel with chamfered and honed CBN tools. <i>International Journal of Machine Tools and Manufacture</i> , 2002, 42, 287-297.	6.2	87
34	On the machining induced residual stresses in IN718 nickel-based alloy: Experiments and predictions with finite element simulation. <i>Simulation Modelling Practice and Theory</i> , 2014, 41, 87-103.	2.2	84
35	Sensitivity analysis of material and process parameters in finite element modeling of selective laser melting of Inconel 625. <i>International Journal of Advanced Manufacturing Technology</i> , 2016, 86, 2653-2666.	1.5	80
36	Hard turning with variable micro-geometry PcBN tools. <i>CIRP Annals - Manufacturing Technology</i> , 2008, 57, 73-76.	1.7	72

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37	Modeling and simulation of thermal field and solidification in laser powder bed fusion of nickel alloy IN625. Optics and Laser Technology, 2019, 109, 278-292.	2.2	67
38	Effect of cutting edge preparation of coated tools on their performance in milling various materials. CIRP Journal of Manufacturing Science and Technology, 2014, 7, 264-273.	2.3	65
39	3D FEM simulation of the turning process of stainless steel 17-4PH with differently texturized cutting tools. International Journal of Mechanical Sciences, 2019, 155, 417-429.	3.6	65
40	Meso/micro scale milling for micro-manufacturing. International Journal of Mechatronics and Manufacturing Systems, 2008, 1, 23.	0.1	62
41	Determination of tool friction in presence of flank wear and stress distribution based validation using finite element simulations in machining of titanium and nickel based alloys. Journal of Materials Processing Technology, 2013, 213, 2217-2237.	3.1	54
42	Analytical and Thermal Modeling of High-Speed Machining With Chamfered Tools. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2008, 130, .	1.3	48
43	Predictive Analytical and Thermal Modeling of Orthogonal Cutting Processâ€”Part II: Effect of Tool Flank Wear on Tool Forces, Stresses, and Temperature Distributions. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2006, 128, 445-453.	1.3	45
44	Swarm Intelligent Selection and Optimization of Machining System Parameters for Microchannel Fabrication in Medical Devices. Materials and Manufacturing Processes, 2011, 26, 403-414.	2.7	43
45	An integrated toolpath and process parameter optimization for high-performance micro-milling process of Tiâ€”6Alâ€”4V titanium alloy. International Journal of Advanced Manufacturing Technology, 2014, 75, 57-75.	1.5	43
46	Empirical Modeling of Residual Stress Profile in Machining Nickel-based Superalloys Using the Sinusoidal Decay Function. Procedia CIRP, 2014, 13, 365-370.	1.0	42
47	Machine Learning Based Predictive Modeling of Machining Induced Microhardness and Grain Size in Tiâ€”6Alâ€”4V Alloy. Materials and Manufacturing Processes, 2015, 30, 425-433.	2.7	42
48	Investigations on microstructural changes in machining of Inconel 100 alloy using face turning experiments and 3D finite element simulations. International Journal of Mechanical Sciences, 2016, 107, 80-92.	3.6	42
49	Structured and textured cutting tool surfaces for machining applications. CIRP Annals - Manufacturing Technology, 2021, 70, 495-518.	1.7	40
50	Influence of Process Parameters and Electrode Geometry on Feature Micro-Accuracy in Electro Discharge Machining of Tool Steel. Materials and Manufacturing Processes, 2009, 24, 1282-1289.	2.7	39
51	Multiobjective Optimization of Experimental and Simulated Residual Stresses in Turning of Nickel-Alloy IN100. Materials and Manufacturing Processes, 2013, 28, 835-841.	2.7	39
52	Predictive modeling and optimization of multi-track processing for laser powder bed fusion of nickel alloy 625. Additive Manufacturing, 2017, 13, 14-36.	1.7	39
53	Effect of process parameters in nanosecond pulsed laser micromachining of PMMA-based microchannels at near-infrared and ultraviolet wavelengths. International Journal of Advanced Manufacturing Technology, 2013, 67, 1651-1664.	1.5	38
54	Effect of Micro-Textured Tool Parameters on Forces, Stresses, Wear Rate, and Variable Friction in Titanium Alloy Machining. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2020, 142, .	1.3	35

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55	Effects of machining parameters and tool geometry on serrated chip formation, specific forces and energies in orthogonal cutting of nickel-based super alloy Inconel 100. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2014, 228, 673-686.	1.5	34
56	Surface topography investigations on nickel alloy 625 fabricated via laser powder bed fusion. International Journal of Advanced Manufacturing Technology, 2018, 94, 4451-4458.	1.5	34
57	Investigations on Mechanics-Based Process Planning of Micro-End Milling in Machining Mold Cavities. Materials and Manufacturing Processes, 2009, 24, 1274-1281.	2.7	32
58	Nanosecond pulsed laser micromachining of PMMA-based microfluidic channels. Journal of Manufacturing Processes, 2012, 14, 435-442.	2.8	32
59	Design of a decision support system for machine tool selection based on machine characteristics and performance tests. Journal of Intelligent Manufacturing, 2011, 22, 263-277.	4.4	31
60	Micro milling of titanium alloy Ti-6Al-4V: 3-D finite element modeling for prediction of chip flow and burr formation. Production Engineering, 2017, 11, 435-444.	1.1	31
61	3D Finite Element Modeling Based Investigations of Micro-textured Tool Designs in Machining Titanium Alloy Ti-6Al-4V. Procedia Manufacturing, 2017, 10, 536-545.	1.9	28
62	Prediction of Machining Induced Surface Integrity Using Elastic-Viscoplastic Simulations and Temperature-Dependent Flow Softening Material Models in Titanium and Nickel-Based Alloys. Advanced Materials Research, 0, 223, 401-410.	0.3	25
63	Effect of Fluence and Pulse Overlapping on Fabrication of Microchannels in PMMA/PDMS Via UV Laser Micromachining: Modeling and Experimentation. Materials and Manufacturing Processes, 2015, 30, 890-901.	2.7	25
64	Monitoring and detection of meltpool and spatter regions in laser powder bed fusion of super alloy Inconel 625. Progress in Additive Manufacturing, 2020, 5, 367-378.	2.5	25
65	Finite element simulation of high speed micro milling in the presence of tool run-out with experimental validations. International Journal of Advanced Manufacturing Technology, 2019, 100, 25-35.	1.5	22
66	Finite Element Modeling of Stresses Induced by High Speed Machining With Round Edge Cutting Tools. , 2005, , 1279.		21
67	Milling investigations and yield strength calculations for nickel alloy Inconel 625 manufactured with laser powder bed fusion process. Production Engineering, 2019, 13, 693-702.	1.1	21
68	Material Ductile Failure-Based Finite Element Simulations of Chip Serration in Orthogonal Cutting of Titanium Alloy Ti-6Al-4V. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2019, 141, .	1.3	20
69	Focus Variation Measurement and Prediction of Surface Texture Parameters Using Machine Learning in Laser Powder Bed Fusion. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2020, 142, .	1.3	20
70	Numerical modelling of meso-scale finish machining with finite edge radius tools. International Journal of Machining and Machinability of Materials, 2007, 2, 451.	0.1	19
71	Numerical modelling of 3D hard turning using arbitrary Lagrangian Eulerian finite element method. International Journal of Machining and Machinability of Materials, 2008, 4, 14.	0.1	19
72	Simulation of serrated chip formation in micro-milling of titanium alloy Ti-6Al-4V using 2D elasto-viscoplastic finite element modeling. Production Engineering, 2016, 10, 575-586.	1.1	19

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73	Surface integrity induced in machining additively fabricated nickel alloy Inconel 625. Procedia CIRP, 2020, 87, 351-354.	1.0	19
74	Micromilling high aspect ratio features using tungsten carbide tools. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2014, 228, 1350-1358.	1.5	18
75	Experimental and Numerical Investigations on Machining Induced Surface Integrity in Inconel-100 Nickel-Base Alloy. Procedia CIRP, 2014, 13, 302-307.	1.0	18
76	Neural network process modelling for turning of steel parts using conventional and wiper inserts. International Journal of Materials and Product Technology, 2009, 35, 246.	0.1	15
77	Temperature profile and melt depth in laser powder bed fusion of Ti-6Al-4V titanium alloy. Progress in Additive Manufacturing, 2017, 2, 169-177.	2.5	15
78	Process monitoring of meltpool and spatter for temporal-spatial modeling of laser powder bed fusion process. Procedia CIRP, 2018, 74, 102-106.	1.0	15
79	Computational Simulation of Thermal and Spattering Phenomena and Microstructure in Selective Laser Melting of Inconel 625. Physics Procedia, 2016, 83, 1435-1443.	1.2	14
80	Orthogonal cutting of alloy steel 4340 with micro-grooved cutting tools. Procedia CIRP, 2019, 82, 178-183.	1.0	14
81	Extrusion-based 3D bioprinting of alginate-based tissue constructs. Procedia CIRP, 2020, 95, 143-148.	1.0	14
82	Identification of Microstructural Model Parameters for 3D Finite Element Simulation of Machining Inconel 100 Alloy. Procedia CIRP, 2016, 46, 549-554.	1.0	12
83	Analytical force modelling for micro milling additively fabricated Inconel 625. Production Engineering, 2020, 14, 613-627.	1.1	12
84	Pulsed Laser Assisted Micromilling for Die/Mold Manufacturing. , 2007, , 337.		11
85	Optimization and fabrication of curvilinear micro-grooved cutting tools for sustainable machining based on finite element modelling of the cutting process. International Journal of Advanced Manufacturing Technology, 2020, 110, 1327-1338.	1.5	11
86	Effects of Machining Parameters on Finishing Additively Manufactured Nickel-Based Alloy Inconel 625. Journal of Manufacturing and Materials Processing, 2020, 4, 32.	1.0	11
87	An Experimental Investigation on Laser Surface Texturing of AISI D2 Tool Steel using Nanosecond Fiber Laser. Lasers in Manufacturing and Materials Processing, 2021, 8, 140-156.	1.2	11
88	An experimental method for laser micro-machining of spherical and elliptical 3-D objects. International Journal of Nanomanufacturing, 2009, 3, 264.	0.3	9
89	Finite element simulations of chip serration in titanium alloy cutting by considering material failure. Procedia CIRP, 2019, 82, 320-325.	1.0	9
90	Physics-Based Simulations of Chip Flow over Micro-Textured Cutting Tool in Orthogonal Cutting of Alloy Steel. Journal of Manufacturing and Materials Processing, 2021, 5, 65.	1.0	9

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91	Process simulations for 3D turning using uniform and variable microgeometry PCBN tools. International Journal of Machining and Machinability of Materials, 2008, 4, 26.	0.1	8
92	Editorial: Special Section on Micromanufacturing Processes and Applications. Materials and Manufacturing Processes, 2009, 24, 1235-1235.	2.7	8
93	Micro textured cutting tool effects on cutting forces, volumetric wear and adhesion in dry turning of titanium alloy. International Journal of Mechatronics and Manufacturing Systems, 2019, 12, 180.	0.1	8
94	A Sensitivity Analysis Study on the Material Properties and Process Parameters for Selective Laser Melting of Inconel 625. , 2015, , .		7
95	Micromilling Process Planning and Modeling for Micromold Manufacturing. , 2007, , 759.		6
96	Mechanistic force modeling in finish face milling of additively manufactured Inconel 625 nickel-based alloy. International Journal of Advanced Manufacturing Technology, 2020, 111, 1535-1551.	1.5	6
97	Investigation of Hydrogel and Gelatin Bath Formulations for Extrusion-Based 3D Bioprinting using Deep Learning. Procedia CIRP, 2022, 110, 360-365.	1.0	6
98	Precision tracking control of a horizontal arm coordinate measuring machine in the presence of dynamic flexibilities. International Journal of Advanced Manufacturing Technology, 2006, 27, 960-968.	1.5	5
99	Methodology to Determine Friction in Orthogonal Cutting With Application to Machining Titanium and Nickel Based Alloys. , 2012, , .		5
100	Modeling of cutting force in micro-end-milling process with experimental validation on additive manufactured Nickel-based superalloy. Procedia CIRP, 2021, 102, 222-227.	1.0	5
101	Experimental and Finite Element Investigations on the Influence of Tool Edge Radius in Machining Nickel-Based Alloy. , 2009, , .		4
102	Determination of Specific Forces and Tool Deflections in Micro-milling of Ti-6Al-4V alloy using Finite Element Simulations and Analysis. , 2011, , .		3
103	Cutting force investigation in face milling of additively fabricated nickel alloy 625 via powder bed fusion. International Journal of Mechatronics and Manufacturing Systems, 2019, 12, 196.	0.1	3
104	Physics-based simulation models for digital twin development in laser powder bed fusion. International Journal of Mechatronics and Manufacturing Systems, 2021, 14, 143.	0.1	3
105	Laser Micro-Machining of Spherical and Elliptical 3-D Objects Using Hole Area Modulation Method. , 2007, , 235.		2
106	Investigations on Machining Induced Microstructural Changes in Inconel 100. , 2015, , .		2
107	Laser ablation and processing of polycrystalline cubic boron nitride cutting tool material. International Journal of Advanced Manufacturing Technology, 0, , 1.	1.5	2
108	Nanosecond Pulsed Laser Processing of Ion Implanted Single Crystal Silicon Carbide Thin Layers. Physics Procedia, 2014, 56, 933-943.	1.2	1

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109	An Analytical-Thermal Modeling Approach for Predicting Forces, Stresses and Temperatures in Machining With Worn Tools. , 2005, , 489.		0