

A Senthil Kumar

List of Publications by Year in descending order

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106
papers

3,254
citations

109137

35
h-index

182168

51
g-index

106
all docs

106
docs citations

106
times ranked

1862
citing authors

#	ARTICLE	IF	CITATIONS
1	Experimental evaluation on the effect of minimal quantities of lubricant in milling. International Journal of Machine Tools and Manufacture, 2002, 42, 539-547.	6.2	184
2	Micro milling of pure copper. Journal of Materials Processing Technology, 2001, 116, 39-43.	3.1	150
3	Experimental study on ultrasonic elliptical vibration cutting of hardened steel using PCD tools. Journal of Materials Processing Technology, 2011, 211, 1701-1709.	3.1	108
4	A fundamental study on the mechanism of electrolytic in-process dressing (ELID) grinding. International Journal of Machine Tools and Manufacture, 2002, 42, 935-943.	6.2	98
5	A model to predict the critical undeformed chip thickness in vibration-assisted machining of brittle materials. International Journal of Machine Tools and Manufacture, 2013, 69, 57-66.	6.2	97
6	A three-dimensional analytical cutting force model for micro end milling operation. International Journal of Machine Tools and Manufacture, 2006, 46, 353-366.	6.2	87
7	Tool-based nanofinishing and micromachining. Journal of Materials Processing Technology, 2007, 185, 2-16.	3.1	83
8	CNC microturning: an application to miniaturization. International Journal of Machine Tools and Manufacture, 2005, 45, 631-639.	6.2	77
9	A study on EDM debris particle size and flushing mechanism for efficient debris removal in EDM-drilling of Inconel 718. Journal of Materials Processing Technology, 2018, 255, 263-274.	3.1	77
10	A multiprocess machine tool for compound micromachining. International Journal of Machine Tools and Manufacture, 2010, 50, 344-356.	6.2	74
11	Variation of surface generation mechanisms in ultra-precision machining due to relative tool sharpness (RTS) and material properties. International Journal of Machine Tools and Manufacture, 2017, 115, 15-28.	6.2	74
12	A study on wear mechanism and wear reduction strategies in grinding wheels used for ELID grinding. Wear, 2003, 254, 1247-1255.	1.5	69
13	A review on the current research trends in ductile regime machining. International Journal of Advanced Manufacturing Technology, 2012, 63, 465-480.	1.5	69
14	Microlens array fabrication by laser interference lithography for super-resolution surface nanopatterning. Applied Physics Letters, 2006, 89, 191125.	1.5	68
15	An analytical force model for orthogonal elliptical vibration cutting technique. Journal of Manufacturing Processes, 2012, 14, 378-387.	2.8	68
16	A novel surface analytical model for cutting linearization error in fast tool/slow slide servo diamond turning. Precision Engineering, 2014, 38, 849-860.	1.8	61
17	Development of an Internet-enabled interactive fixture design system. CAD Computer Aided Design, 2003, 35, 945-957.	1.4	60
18	Rehbinder effect in ultraprecision machining of ductile materials. International Journal of Machine Tools and Manufacture, 2018, 133, 47-60.	6.2	58

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19	Development of a distributed collaborative design framework within peer-to-peer environment. CAD Computer Aided Design, 2008, 40, 891-904.	1.4	52
20	Modeling of the effect of tool edge radius on surface generation in elliptical vibration cutting. International Journal of Advanced Manufacturing Technology, 2013, 65, 35-42.	1.5	49
21	Rotating-tool diamond turning of Fresnel lenses on a roller mold for manufacturing of functional optical film. Precision Engineering, 2018, 51, 445-457.	1.8	49
22	Experimental and theoretical study of internal finishing by a novel magnetically driven polishing tool. International Journal of Machine Tools and Manufacture, 2020, 153, 103552.	6.2	49
23	Conceptual Design of Fixtures using Genetic Algorithms. International Journal of Advanced Manufacturing Technology, 1999, 15, 79-84.	1.5	48
24	Developing distributed applications for integrated product and process design. CAD Computer Aided Design, 2004, 36, 679-689.	1.4	46
25	Design and Development of a Topology-Optimized Three-Dimensional Printed Soft Gripper. Soft Robotics, 2018, 5, 650-661.	4.6	45
26	Identification of Effective Zones for High Pressure Coolant in Milling. CIRP Annals - Manufacturing Technology, 2000, 49, 47-52.	1.7	43
27	A study of the diamond tool wear suppression mechanism in vibration-assisted machining of steel. Journal of Materials Processing Technology, 2014, 214, 496-506.	3.1	43
28	Functions and applications of metallic and metallic oxide nanoparticles in orthopedic implants and scaffolds. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2021, 109, 160-179.	1.6	43
29	Development of micropin fabrication process using tool based micromachining. International Journal of Advanced Manufacturing Technology, 2006, 27, 939-944.	1.5	42
30	Modelling of flow stress by correlating the material grain size and chip thickness in ultra-precision machining. International Journal of Machine Tools and Manufacture, 2017, 123, 57-75.	6.2	42
31	Effect of High-Pressure Coolant on Machining Performance. International Journal of Advanced Manufacturing Technology, 2002, 20, 83-91.	1.5	41
32	An automated Guilloche machining technique for the fabrication of polygonal Fresnel lens array. Precision Engineering, 2015, 41, 55-62.	1.8	41
33	Design and analysis of flexure-hinge parameter in microgripper. International Journal of Advanced Manufacturing Technology, 2010, 49, 1185-1193.	1.5	40
34	A novel magnetically driven polishing technique for internal surface finishing. Precision Engineering, 2018, 54, 222-232.	1.8	39
35	Ultra-precision machining of radial Fresnel lens on roller moulds. CIRP Annals - Manufacturing Technology, 2015, 64, 121-124.	1.7	38
36	A review of multi-functional ceramic nanoparticles in 3D printed bone tissue engineering. Bioprinting, 2021, 23, e00146.	2.9	37

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37	Characterization of ELID grinding process for machining silicon wafers. Journal of Materials Processing Technology, 2008, 198, 281-290.	3.1	33
38	The effects of tool edge radius on drill deflection and hole misalignment in deep hole gun drilling of Inconel-718. CIRP Annals - Manufacturing Technology, 2014, 63, 125-128.	1.7	32
39	Conceptual Design of Fixtures Using Machine Learning Techniques. International Journal of Advanced Manufacturing Technology, 2000, 16, 176-181.	1.5	30
40	A review of recent advances in fabrication of optical Fresnel lenses. Journal of Manufacturing Processes, 2021, 71, 113-133.	2.8	29
41	Effect of apex offset inconsistency on hole straightness deviation in deep hole gun drilling of Inconel 718. International Journal of Machine Tools and Manufacture, 2018, 125, 123-132.	6.2	28
42	Improvement of form accuracy in hybrid machining of microstructures. Journal of Electronic Materials, 2002, 31, 1032-1038.	1.0	27
43	A comparative investigation on the mechanical properties and cytotoxicity of Cubic, Octet, and TPMS gyroid structures fabricated by selective laser melting of stainless steel 316L. Journal of the Mechanical Behavior of Biomedical Materials, 2022, 129, 105151.	1.5	27
44	Beneficial stress of a coating on ductile-mode cutting of single-crystal brittle material. International Journal of Machine Tools and Manufacture, 2021, 168, 103787.	6.2	25
45	A novel approach in high performance deep hole drilling of Inconel 718. Precision Engineering, 2019, 56, 432-437.	1.8	24
46	Synthesis methods of functionalized nanoparticles: a review. Bio-Design and Manufacturing, 2021, 4, 379-404.	3.9	24
47	A multi-agent approach to fixture design. Journal of Intelligent Manufacturing, 2001, 12, 31-42.	4.4	23
48	Ultrafast drilling of Inconel 718 using hybrid EDM with different electrode materials. International Journal of Advanced Manufacturing Technology, 2020, 106, 2281-2294.	1.5	23
49	Fixture design information support for integrated design and manufacturing. International Journal of Production Research, 2006, 44, 2205-2219.	4.9	22
50	A comparative study on the modelling of EDM and hybrid electrical discharge and arc machining considering latent heat and temperature-dependent properties of Inconel 718. International Journal of Advanced Manufacturing Technology, 2018, 94, 2729-2737.	1.5	22
51	Modeling of Ultra-Precision ELID Grinding. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2007, 129, 296-302.	1.3	21
52	A Review of Electrolytic In-Process Dressing (ELID) Grinding. Key Engineering Materials, 0, 404, 45-59.	0.4	21
53	The effects of pilot hole geometry on tool-work engagement efficacy in deep hole drilling. Journal of Manufacturing Processes, 2015, 19, 135-141.	2.8	21
54	Influence of relative tool sharpness (RTS) on different ultra-precision machining regimes of Mg alloy. International Journal of Advanced Manufacturing Technology, 2018, 96, 3545-3563.	1.5	20

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55	High-efficiency swinging-rotating diamond shaping of Fresnel lenses on roller molds. CIRP Annals - Manufacturing Technology, 2018, 67, 121-124.	1.7	19
56	A study on the grinding of glass using electrolytic in-process dressing. Journal of Electronic Materials, 2002, 31, 1039-1046.	1.0	18
57	Ultra-precision machining of grayscale pixelated micro images on metal surface. Precision Engineering, 2018, 52, 211-220.	1.8	18
58	Wear Phenomena in Abrasive-Free Copper CMP Process. Journal of the Electrochemical Society, 2005, 152, G867.	1.3	17
59	Nano finish grinding of brittle materials using electrolytic in-process dressing (ELID) technique. Sadhana - Academy Proceedings in Engineering Sciences, 2003, 28, 957-974.	0.8	16
60	Profile evaluation of radial Fresnel lens directly machined on roller molds by rotating-tool diamond turning. Precision Engineering, 2017, 50, 44-52.	1.8	16
61	High throughput deep-hole drilling of Inconel 718 using PCBN gun drill. Journal of Manufacturing Processes, 2020, 57, 302-311.	2.8	16
62	Roll-to-Roll Embossing of Optical Radial Fresnel Lenses on Polymer Film for Concentrator Photovoltaics: A Feasibility Study. International Journal of Precision Engineering and Manufacturing - Green Technology, 2021, 8, 77-88.	2.7	16
63	Automated synthesis of modular fixture designs using an evolutionary search algorithm. International Journal of Production Research, 2005, 43, 5047-5070.	4.9	15
64	CAX-technologies for hybrid fast tool/slow slide servo diamond turning of freeform surface. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2016, 230, 1465-1479.	1.5	15
65	Chip perforation and "burnishing" like finishing of Al alloy in precision machining. Precision Engineering, 2017, 50, 393-409.	1.8	15
66	Super Dielectric Based EDM Process for Drilling of Inconel 718. Materials and Manufacturing Processes, 2021, 36, 341-350.	2.7	15
67	Ultra-precision direct diamond shaping of functional micro features. Journal of Manufacturing Processes, 2021, 64, 209-223.	2.8	15
68	The Effects of Tool Degradation on Hole Straightness in Deep Hole Gundrilling of Inconel-718. Procedia CIRP, 2014, 14, 593-598.	1.0	14
69	Effects of cutting edge radius in vibration assisted micro machining. International Journal of Mechanical Sciences, 2021, 208, 106673.	3.6	14
70	A Material Removal Rate Model for Copper Abrasive-Free CMP. Journal of the Electrochemical Society, 2005, 152, G417.	1.3	13
71	Experimental study of wheel wear in electrolytic in-process dressing and grinding. International Journal of Advanced Manufacturing Technology, 2010, 50, 931-940.	1.5	13
72	On the design and application of hybrid electrical discharge and arc machining process for enhancing drilling performance in Inconel 718. International Journal of Advanced Manufacturing Technology, 2018, 99, 1825-1837.	1.5	13

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73	A biomechanical evaluation on Cubic, Octet, and TPMS gyroid Ti6Al4V lattice structures fabricated by selective laser melting and the effects of their debris on human osteoblast-like cells. , 2022, 137, 212829.		13
74	Performance evaluation of a newly developed electrolytic system for stable thinning of silicon wafers. Thin Solid Films, 2006, 504, 15-19.	0.8	12
75	Investigation of the critical cutting edge radius based on material hardness. International Journal of Advanced Manufacturing Technology, 2017, 88, 3295-3306.	1.5	12
76	Study of chip formation mechanism in one-dimensional vibration-assisted machining. Journal of Materials Processing Technology, 2021, 291, 117022.	3.1	12
77	Material perspective on the evolution of micro- and nano-scale cutting of metal alloys. Journal of Micromanufacturing, 2018, 1, 97-114.	0.6	11
78	High-temperature nanoindentation size effect in fluorite material. International Journal of Mechanical Sciences, 2019, 159, 459-466.	3.6	10
79	Diamond shaping of blazed gratings on freeform surfaces. Precision Engineering, 2021, 72, 899-911.	1.8	10
80	Influence of Burnishing Axial Interference on Hole Surface Quality in Deep Hole Drilling of Inconel 718. Procedia Manufacturing, 2016, 5, 1295-1307.	1.9	9
81	Design and Analysis of Soft Grippers for Hand Rehabilitation. , 2017, , .		9
82	Evaluation and characterization of nitinol stents produced by selective laser melting with various process parameters. Progress in Additive Manufacturing, 2022, 7, 1141-1153.	2.5	8
83	An Adaptive Machining Fixture Design System for Automatically Dealing With Design Changes. Journal of Computing and Information Science in Engineering, 2007, 7, 259-268.	1.7	7
84	Influence of cutting edge radius on small scale material removal at ultra-precise level. Procedia CIRP, 2018, 77, 658-661.	1.0	7
85	Design and fabrication of composite polygonal Fresnel lenses. Optics Express, 2021, 29, 36516.	1.7	7
86	A Framework for Distributed Collaborative Engineering on Grids. Computer-Aided Design and Applications, 2007, 4, 353-362.	0.4	5
87	Collaborative Fixture Design and Analysis Using Service Oriented Architecture. IEEE Transactions on Automation Science and Engineering, 2010, 7, 617-629.	3.4	5
88	Fast and Fine Tool Servo for Ultraprecision Machining. , 2014, , 61-88.		5
89	Design Change Synchronization in a Distributed Environment for Integrated Product and Process Design. Computer-Aided Design and Applications, 2004, 1, 43-52.	0.4	4
90	Elastic and plastic chip deformation mechanism in 1D vibration-assisted metal cutting. Procedia CIRP, 2018, 71, 309-312.	1.0	4

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91	A study on automatic fixture design using reinforcement learning. International Journal of Advanced Manufacturing Technology, 2020, 107, 2303-2311.	1.5	4
92	Effects of Cutting and Vibration Parameters on Transient Cutting Force in Elliptical Vibration Cutting. Communications in Computer and Information Science, 2012, , 483-490.	0.4	4
93	A "Plug-and-Play" Computing Environment for an Extended Enterprise. , 2007, , 71-91.		3
94	Advanced ELID Process Development for Grinding Silicon Wafers. Materials Research Society Symposia Proceedings, 2005, 867, 921.	0.1	2
95	LARGE AREA PARALLEL SURFACE NANOSTRUCTURING WITH LASER IRRADIATION THROUGH MICROLENS ARRAYS. Surface Review and Letters, 2010, 17, 383-387.	0.5	2
96	Study of field intensity distribution of laser beam propagating through a micro-lens array. Applied Physics A: Materials Science and Processing, 2012, 107, 149-153.	1.1	2
97	Ultrasonic Vibration Cutting. , 2014, , 455-481.		2
98	Cytotoxicity of Ti/SS316/Mg Particles on Human Osteoblasts. Materials Science Forum, 0, 1047, 128-133.	0.3	2
99	Effect of Minimal Quantities of Lubricant in Micro Milling. , 2002, , 309-313.		1
100	Compound Micro/Nano Machining " A Tool-Based Innovative and Integrated Approach. Key Engineering Materials, 2010, 447-448, 9-15.	0.4	1
101	A Study on Surface Generation along Nominal Cutting Direction in Elliptical Vibration Cutting. Advanced Materials Research, 0, 314-316, 1851-1856.	0.3	1
102	Die-sinking of super dielectric based electrical discharge machining using 3D printed electrodes. Procedia CIRP, 2020, 95, 471-475.	1.0	1
103	Estimation of wheel wear in electrolytic in-process dressing (ELID) and grinding. International Journal of Abrasive Technology, 2011, 4, 41.	0.2	0
104	Surface texturing for improved tribological performance in deep hole drilling. , 2022, , 239-258.		0
105	Generating direct diamond shaping tool paths using special-purpose computer-aided-machining post-processor. International Journal of Computer Integrated Manufacturing, 0, , 1-15.	2.9	0
106	The effects of various processing parameters on the mechanical properties and biocompatibility of Fe-based bulk metallic glass processed by selective laser melting at the constant energy density. , 2022, , 100038.		0