

# Erhan Budak

## List of Publications by Year in descending order

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117  
papers

9,063  
citations

50276  
46  
h-index

42399  
92  
g-index

121  
all docs

121  
docs citations

121  
times ranked

2609  
citing authors

| #  | ARTICLE                                                                                                                                                                                                                              | IF   | CITATIONS |
|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|
| 1  | Analytical Prediction of Stability Lobes in Milling. CIRP Annals - Manufacturing Technology, 1995, 44, 357-362.                                                                                                                      | 3.6  | 1,474     |
| 2  | Prediction of Milling Force Coefficients From Orthogonal Cutting Data. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 1996, 118, 216-224.                                                               | 2.2  | 575       |
| 3  | Analytical Prediction of Chatter Stability in Milling—Part I: General Formulation. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 1998, 120, 22-30.                                                  | 1.6  | 536       |
| 4  | Chatter suppression techniques in metal cutting. CIRP Annals - Manufacturing Technology, 2016, 65, 785-808.                                                                                                                          | 3.6  | 474       |
| 5  | Virtual process systems for part machining operations. CIRP Annals - Manufacturing Technology, 2014, 63, 585-605.                                                                                                                    | 3.6  | 247       |
| 6  | Analytical Prediction of Chatter Stability in Milling—Part II: Application of the General Formulation to Common Milling Systems. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 1998, 120, 31-36.    | 1.6  | 230       |
| 7  | Analytical Stability Prediction and Design of Variable Pitch Cutters. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 1999, 121, 173-178.                                                                | 2.2  | 228       |
| 8  | Sources of nonlinearities, chatter generation and suppression in metal cutting. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2001, 359, 663-693.                                           | 3.4  | 215       |
| 9  | Modeling and avoidance of static form errors in peripheral milling of plates. International Journal of Machine Tools and Manufacture, 1995, 35, 459-476.                                                                             | 13.4 | 212       |
| 10 | Analytical models for high performance milling. Part I: Cutting forces, structural deformations and tolerance integrity. International Journal of Machine Tools and Manufacture, 2006, 46, 1478-1488.                                | 13.4 | 202       |
| 11 | Analytical modeling of spindle—tool dynamics on machine tools using Timoshenko beam model and receptance coupling for the prediction of tool point FRF. International Journal of Machine Tools and Manufacture, 2006, 46, 1901-1912. | 13.4 | 187       |
| 12 | Prediction of workpiece dynamics and its effects on chatter stability in milling. CIRP Annals - Manufacturing Technology, 2012, 61, 339-342.                                                                                         | 3.6  | 158       |
| 13 | An Analytical Design Method for Milling Cutters With Nonconstant Pitch to Increase Stability, Part I: Theory. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2003, 125, 29-34.                          | 2.2  | 156       |
| 14 | Investigation of lead and tilt angle effects in 5-axis ball-end milling processes. International Journal of Machine Tools and Manufacture, 2009, 49, 1053-1062.                                                                      | 13.4 | 137       |
| 15 | Structural modeling of end mills for form error and stability analysis. International Journal of Machine Tools and Manufacture, 2004, 44, 1151-1161.                                                                                 | 13.4 | 123       |
| 16 | Modeling and simulation of 5-axis milling processes. CIRP Annals - Manufacturing Technology, 2009, 58, 347-350.                                                                                                                      | 3.6  | 123       |
| 17 | Analytical and experimental investigation of rake contact and friction behavior in metal cutting. International Journal of Machine Tools and Manufacture, 2009, 49, 865-875.                                                         | 13.4 | 123       |
| 18 | Analytical Prediction of Stability Lobes in Ball End Milling. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 1999, 121, 586-592.                                                                        | 2.2  | 113       |

| #  | ARTICLE                                                                                                                                                                                                                                            | IF   | CITATIONS |
|----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|
| 19 | Peripheral milling conditions for improved dimensional accuracy. International Journal of Machine Tools and Manufacture, 1994, 34, 907-918.                                                                                                        | 13.4 | 110       |
| 20 | Identification and modeling of process damping in turning and milling using a new approach. CIRP Annals - Manufacturing Technology, 2010, 59, 403-408.                                                                                             | 3.6  | 110       |
| 21 | Investigation of machinability in turning of difficult-to-cut materials using a new cryogenic cooling approach. Tribology International, 2018, 119, 510-520.                                                                                       | 5.9  | 109       |
| 22 | An Analytical Design Method for Milling Cutters With Nonconstant Pitch to Increase Stability, Part 2: Application. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2003, 125, 35-38.                                   | 2.2  | 95        |
| 23 | Modeling dynamics and stability of variable pitch and helix milling tools for development of a design method to maximize chatter stability. Precision Engineering, 2017, 47, 459-468.                                                              | 3.4  | 85        |
| 24 | Maximizing Chatter Free Material Removal Rate in Milling through Optimal Selection of Axial and Radial Depth of Cut Pairs. CIRP Annals - Manufacturing Technology, 2005, 54, 353-356.                                                              | 3.6  | 83        |
| 25 | In-process tool point FRF identification under operational conditions using inverse stability solution. International Journal of Machine Tools and Manufacture, 2015, 89, 64-73.                                                                   | 13.4 | 83        |
| 26 | Improving Productivity and Part Quality in Milling of Titanium Based Impellers by Chatter Suppression and Force Control. CIRP Annals - Manufacturing Technology, 2000, 49, 31-36.                                                                  | 3.6  | 81        |
| 27 | A decision support system for machine tool selection. Journal of Manufacturing Technology Management, 2004, 15, 101-109.                                                                                                                           | 6.4  | 75        |
| 28 | A closed-form approach for identification of dynamical contact parameters in spindleâ€‘holderâ€‘tool assemblies. International Journal of Machine Tools and Manufacture, 2009, 49, 25-35.                                                          | 13.4 | 74        |
| 29 | Effect of cutting conditions and tool geometry on process damping in machining. International Journal of Machine Tools and Manufacture, 2012, 57, 10-19.                                                                                           | 13.4 | 73        |
| 30 | Analytical Modeling of Chatter Stability in Turning and Boring Operations: A Multi-Dimensional Approach. CIRP Annals - Manufacturing Technology, 2007, 56, 401-404.                                                                                | 3.6  | 71        |
| 31 | Dynamic Peripheral Milling of Flexible Structures. Journal of Engineering for Industry, 1992, 114, 137-145.                                                                                                                                        | 0.8  | 70        |
| 32 | Effect analysis of bearing and interface dynamics on tool point FRF for chatter stability in machine tools by using a new analytical model for spindleâ€‘tool assemblies. International Journal of Machine Tools and Manufacture, 2007, 47, 23-32. | 13.4 | 70        |
| 33 | Analytical models for high performance milling. Part II: Process dynamics and stability. International Journal of Machine Tools and Manufacture, 2006, 46, 1489-1499.                                                                              | 13.4 | 68        |
| 34 | A New Method for Identification and Modeling of Process Damping in Machining. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2009, 131, .                                                                             | 2.2  | 68        |
| 35 | Development of a thermomechanical cutting process model for machining process simulations. CIRP Annals - Manufacturing Technology, 2008, 57, 97-100.                                                                                               | 3.6  | 65        |
| 36 | Chatter Stability of Machining Operations. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2020, 142, .                                                                                                                | 2.2  | 65        |

| #  | ARTICLE                                                                                                                                                                                                                      | IF   | CITATIONS |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|
| 37 | An experimental investigation of chatter effects on tool life. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2009, 223, 1455-1463.                                     | 2.4  | 64        |
| 38 | Development of a machine tool selection system using AHP. International Journal of Advanced Manufacturing Technology, 2007, 35, 363-376.                                                                                     | 3.0  | 61        |
| 39 | Dynamics and Stability of Five-Axis Ball-End Milling. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2010, 132, .                                                                               | 2.2  | 59        |
| 40 | Extraction of 5-axis milling conditions from CAM data for process simulation. International Journal of Advanced Manufacturing Technology, 2009, 43, 538-550.                                                                 | 3.0  | 54        |
| 41 | Selection of design and operational parameters in spindle-holder-tool assemblies for maximum chatter stability by using a new analytical model. International Journal of Machine Tools and Manufacture, 2007, 47, 1401-1409. | 13.4 | 53        |
| 42 | Analytical modeling of turn-milling process geometry, kinematics and mechanics. International Journal of Machine Tools and Manufacture, 2015, 91, 24-33.                                                                     | 13.4 | 53        |
| 43 | Modeling and Measurement of Cutting Temperatures in Milling. Procedia CIRP, 2016, 46, 173-176.                                                                                                                               | 1.9  | 53        |
| 44 | A Modeling Approach for Analysis and Improvement of Spindle-Holder-Tool Assembly Dynamics. CIRP Annals - Manufacturing Technology, 2006, 55, 369-372.                                                                        | 3.6  | 50        |
| 45 | Dynamics and stability of parallel turning operations. CIRP Annals - Manufacturing Technology, 2011, 60, 383-386.                                                                                                            | 3.6  | 50        |
| 46 | An analytical grinding force model based on individual grit interaction. Journal of Materials Processing Technology, 2020, 283, 116700.                                                                                      | 6.3  | 49        |
| 47 | Analysis and compensation of mass loading effect of accelerometers on tool point FRF measurements for chatter stability predictions. International Journal of Machine Tools and Manufacture, 2010, 50, 585-589.              | 13.4 | 48        |
| 48 | Experimental evaluation of eco-friendly hybrid cooling methods in slot milling of titanium alloy. Journal of Cleaner Production, 2021, 289, 125817.                                                                          | 9.3  | 48        |
| 49 | Identification of active number of grits and its effects on mechanics and dynamics of abrasive processes. Journal of Materials Processing Technology, 2019, 273, 116239.                                                     | 6.3  | 45        |
| 50 | Chatter reduction in boring process by using piezoelectric shunt damping with experimental verification. Mechanical Systems and Signal Processing, 2017, 94, 312-321.                                                        | 8.0  | 44        |
| 51 | Identification and Modeling of Process Damping in Milling. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2013, 135, .                                                                          | 2.2  | 43        |
| 52 | Surface roughness and thermo-mechanical force modeling for grinding operations with regular and circumferentially grooved wheels. Journal of Materials Processing Technology, 2015, 223, 75-90.                              | 6.3  | 43        |
| 53 | Analytical modeling of asymmetric multi-segment rotor " bearing systems with Timoshenko beam model including gyroscopic moments. Computers and Structures, 2014, 144, 119-126.                                               | 4.4  | 42        |
| 54 | Determination of minimum uncut chip thickness under various machining conditions during micro-milling of Ti-6Al-4V. International Journal of Advanced Manufacturing Technology, 2018, 95, 1617-1634.                         | 3.0  | 41        |

| #  | ARTICLE                                                                                                                                                                                                       | IF   | CITATIONS |
|----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|
| 55 | Analytical Prediction of Part Dynamics for Machining Stability Analysis. International Journal of Automation Technology, 2010, 4, 259-267.                                                                    | 1.0  | 41        |
| 56 | Analytical Modeling of Chatter Stability in Turning and Boring Operations”Part II: Experimental Verification. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2007, 129, 733-739. | 2.2  | 39        |
| 57 | Generalized model for dynamics and stability of multi-axis milling with complex tool geometries. Journal of Materials Processing Technology, 2016, 238, 446-458.                                              | 6.3  | 38        |
| 58 | Iterative receptance method for determining harmonic response of structures with symmetrical non-linearities. Mechanical Systems and Signal Processing, 1993, 7, 75-87.                                       | 8.0  | 37        |
| 59 | Stability and high performance machining conditions in simultaneous milling. CIRP Annals - Manufacturing Technology, 2013, 62, 403-406.                                                                       | 3.6  | 37        |
| 60 | TWO-ZONE ANALYTICAL CONTACT MODEL APPLIED TO ORTHOGONAL CUTTING. Machining Science and Technology, 2010, 14, 323-343.                                                                                         | 2.5  | 35        |
| 61 | Analytical Modeling of Chatter Stability in Turning and Boring Operations”Part I: Model Development. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2007, 129, 726-732.          | 2.2  | 34        |
| 62 | Machining of Difficult-to-Cut-Alloys Using Rotary Turning Tools. Procedia CIRP, 2013, 8, 81-87.                                                                                                               | 1.9  | 34        |
| 63 | Increasing tool life in machining of difficult-to-cut materials using nonconventional turning processes. International Journal of Advanced Manufacturing Technology, 2015, 77, 1993-2004.                     | 3.0  | 34        |
| 64 | Thermo-mechanical modeling of the third deformation zone in machining for prediction of cutting forces. CIRP Annals - Manufacturing Technology, 2016, 65, 121-124.                                            | 3.6  | 31        |
| 65 | Investigating effects of serration geometry on milling forces and chatter stability for their optimal selection. International Journal of Machine Tools and Manufacture, 2019, 144, 103425.                   | 13.4 | 31        |
| 66 | Improving Cycle Time in Sculptured Surface Machining Through Force Modeling. CIRP Annals - Manufacturing Technology, 2004, 53, 103-106.                                                                       | 3.6  | 30        |
| 67 | MAXIMIZATION OF CHATTER-FREE MATERIAL REMOVAL RATE IN END MILLING USING ANALYTICAL METHODS. Machining Science and Technology, 2005, 9, 147-167.                                                               | 2.5  | 30        |
| 68 | Identification of bearing dynamics under operational conditions for chatter stability prediction in high speed machining operations. Precision Engineering, 2015, 42, 53-65.                                  | 3.4  | 30        |
| 69 | Optimization of Serrated End Mills for Reduced Cutting Energy and Higher Stability. Procedia CIRP, 2013, 8, 570-575.                                                                                          | 1.9  | 29        |
| 70 | Design of Serrated End Mills for Improved Productivity. Procedia CIRP, 2017, 58, 493-498.                                                                                                                     | 1.9  | 28        |
| 71 | Tuning of tool dynamics for increased stability of parallel (simultaneous) turning processes. Journal of Sound and Vibration, 2016, 360, 17-30.                                                               | 3.9  | 27        |
| 72 | Investigating effects of milling conditions on cutting temperatures through analytical and experimental methods. Journal of Materials Processing Technology, 2018, 262, 532-540.                              | 6.3  | 27        |

| #  | ARTICLE                                                                                                                                                                                        | IF   | CITATIONS |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|
| 73 | Multi-dimensional chatter stability for enhanced productivity in different parallel turning strategies. International Journal of Machine Tools and Manufacture, 2017, 123, 116-128.            | 13.4 | 27        |
| 74 | Investigating Dynamics of Machine Tool Spindles under Operational Conditions. Advanced Materials Research, 0, 223, 610-621.                                                                    | 0.3  | 26        |
| 75 | Effects of tool axis offset in turn-milling process. Journal of Materials Processing Technology, 2016, 231, 239-247.                                                                           | 6.3  | 26        |
| 76 | Destabilizing effect of low frequency modes on process damped stability of multi-mode milling systems. Mechanical Systems and Signal Processing, 2018, 111, 423-441.                           | 8.0  | 26        |
| 77 | Process simulation integrated tool axis selection for 5-axis tool path generation. CIRP Annals - Manufacturing Technology, 2016, 65, 381-384.                                                  | 3.6  | 24        |
| 78 | Alternative experimental methods for machine tool dynamics identification: A review. Mechanical Systems and Signal Processing, 2022, 170, 108837.                                              | 8.0  | 23        |
| 79 | Appreciation of 2014 reviewers. International Journal of Advanced Manufacturing Technology, 2015, 80, 1-2.                                                                                     | 3.0  | 22        |
| 80 | Dynamics and chatter stability of crest-cut end mills. International Journal of Machine Tools and Manufacture, 2021, 171, 103813.                                                              | 13.4 | 22        |
| 81 | Comparison of one-dimensional and multi-dimensional models in stability analysis of turning operations. International Journal of Machine Tools and Manufacture, 2007, 47, 1875-1883.           | 13.4 | 20        |
| 82 | Semi-analytical Force Model for Grinding Operations. Procedia CIRP, 2014, 14, 7-12.                                                                                                            | 1.9  | 20        |
| 83 | On the prediction of surface burn and its thickness in grinding processes. CIRP Annals - Manufacturing Technology, 2021, 70, 285-288.                                                          | 3.6  | 20        |
| 84 | Mechanical and Thermal Modeling of Orthogonal Turn-milling Operation. Procedia CIRP, 2017, 58, 287-292.                                                                                        | 1.9  | 20        |
| 85 | Suppressing vibration modes of spindle-holder-tool assembly through FRF modification for enhanced chatter stability. CIRP Annals - Manufacturing Technology, 2018, 67, 397-400.                | 3.6  | 19        |
| 86 | A 3D analytical thermal model in grinding considering a periodic heat source under dry and wet conditions. Journal of Materials Processing Technology, 2021, 295, 117158.                      | 6.3  | 19        |
| 87 | Machining strategy development and parameter selection in 5-axis milling based on process simulations. International Journal of Advanced Manufacturing Technology, 2016, 85, 1483-1500.        | 3.0  | 17        |
| 88 | Process Modeling of Turn-Milling Using Analytical Approach. Procedia CIRP, 2012, 4, 131-139.                                                                                                   | 1.9  | 16        |
| 89 | Optimization of Turn-milling Processes. Procedia CIRP, 2015, 33, 476-483.                                                                                                                      | 1.9  | 15        |
| 90 | Investigation of temperature distribution in orthogonal cutting through dual-zone contact model on the rake face. International Journal of Advanced Manufacturing Technology, 2018, 96, 81-89. | 3.0  | 15        |

| #   | ARTICLE                                                                                                                                                    | IF   | CITATIONS |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------|
| 91  | Grinding Temperature Modeling Based on a Time Dependent Heat Source. Procedia CIRP, 2018, 77, 299-302.                                                     | 1.9  | 15        |
| 92  | Identifying parameters of a broaching design using non-linear optimisation. International Journal of Modelling, Identification and Control, 2011, 12, 244. | 0.2  | 13        |
| 93  | Modeling and Measurement of Micro End Mill Dynamics using Inverse Stability Approach. Procedia CIRP, 2016, 46, 242-245.                                    | 1.9  | 13        |
| 94  | Investigating Eccentricity Effects in Turn-milling Operations. Procedia CIRP, 2014, 14, 176-181.                                                           | 1.9  | 12        |
| 95  | Cutting Load Capacity of End Mills with Complex Geometry. CIRP Annals - Manufacturing Technology, 2001, 50, 65-68.                                         | 3.6  | 11        |
| 96  | Design of an RFID-based Manufacturing Monitoring and Analysis System. , 2007, , .                                                                          |      | 11        |
| 97  | Broaching tool design through force modelling and process simulation. CIRP Annals - Manufacturing Technology, 2020, 69, 53-56.                             | 3.6  | 11        |
| 98  | Modeling of Broaching Process for Improved Tool Design. , 2003, , 291.                                                                                     |      | 10        |
| 99  | An experimental investigation of oblique cutting mechanics. Machining Science and Technology, 2016, 20, 495-521.                                           | 2.5  | 10        |
| 100 | High-speed machining of additively manufactured Inconel 718 using hybrid cryogenic cooling methods. Virtual and Physical Prototyping, 2022, 17, 419-436.   | 10.4 | 10        |
| 101 | Chatter stability of thin-walled part machining using special end mills. CIRP Annals - Manufacturing Technology, 2022, 71, 365-368.                        | 3.6  | 10        |
| 102 | The Effect of Linear Guide Representation for Topology Optimization of a Five-axis Milling Machine. Procedia CIRP, 2017, 58, 487-492.                      | 1.9  | 9         |
| 103 | Effects of turn-milling conditions on chip formation and surface finish. CIRP Annals - Manufacturing Technology, 2019, 68, 113-116.                        | 3.6  | 9         |
| 104 | Microstrip Patch Antenna for RFID Applications. , 2007, , .                                                                                                |      | 8         |
| 105 | Modeling and Experimental Investigation of Edge Hone and Flank Contact Effects in Metal Cutting. Procedia CIRP, 2013, 8, 194-199.                          | 1.9  | 8         |
| 106 | High Speed Machining of AISI 1050 Steel: Modelling and Experimental. International Journal of Material Forming, 2008, 1, 1439-1441.                        | 2.0  | 7         |
| 107 | Investigating High Productivity Conditions for Turn-Milling in Comparison to Conventional Turning. Procedia CIRP, 2018, 77, 259-262.                       | 1.9  | 7         |
| 108 | Mechanical interfaces in machine tools. CIRP Annals - Manufacturing Technology, 2022, 71, 647-670.                                                         | 3.6  | 7         |

| #   | ARTICLE                                                                                                                                                                                                    | IF  | CITATIONS |
|-----|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----------|
| 109 | A Hybrid Contact Implementation Framework for Finite Element Analysis and Topology Optimization of Machine Tools. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2020, 142, . | 2.2 | 6         |
| 110 | Development of Analytical Endmill Deflection and Dynamics Models. , 2003, , 85.                                                                                                                            |     | 5         |
| 111 | Analytical methods for increased productivity in 5-axis ball-end milling. International Journal of Mechatronics and Manufacturing Systems, 2011, 4, 238.                                                   | 0.1 | 5         |
| 112 | An Experimental Study on Dynamics and Stability of Miniature End Mills. Advanced Materials Research, 2011, 223, 869-878.                                                                                   | 0.3 | 3         |
| 113 | Improving Performance of Turn-milling by Controlling Forces and Thermally Induced Tool-center Point (TCP) Displacement. Procedia CIRP, 2016, 40, 481-485.                                                  | 1.9 | 3         |
| 114 | Chatter Reduction in Turning by Using Piezoelectric Shunt Circuits. Conference Proceedings of the Society for Experimental Mechanics, 2014, , 415-420.                                                     | 0.5 | 2         |
| 115 | Dynamic Analysis and Control. Springer Series in Advanced Manufacturing, 2009, , 21-84.                                                                                                                    | 0.5 | 2         |
| 116 | Increasing Productivity in 5-Axis Milling of IBR's Using Force Modeling and Control. , 0, , .                                                                                                              |     | 0         |
| 117 | Machining Process Improvement Through Process Twins. Lecture Notes in Mechanical Engineering, 2018, , 164-179.                                                                                             | 0.4 | 0         |