Nabil Anwer

List of Publications by Year
in descending order

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Version: 2024-02-01

97 papers	3,277 citations	361413 20 h-index	161849 54 g-index
103 all docs	103 docs citations	103 times ranked	2046 citing authors

#	Article	IF	Citations
1	Shaping the digital twin for design and production engineering. CIRP Annals - Manufacturing Technology, 2017, 66, 141-144.	3.6	826
2	Enabling technologies and tools for digital twin. Journal of Manufacturing Systems, 2021, 58, 3-21.	13.9	611
3	Skin Model Shapes: A new paradigm shift for geometric variations modelling in mechanical engineering. CAD Computer Aided Design, 2014, 50, 1-15.	2.7	202
4	Assembly Based Methods to Support Product Innovation in Design for Additive Manufacturing: An Exploratory Case Study. Journal of Mechanical Design, Transactions of the ASME, 2015, 137, .	2.9	132
5	Tolerancing: Managing uncertainty from conceptual design to final product. CIRP Annals - Manufacturing Technology, 2018, 67, 695-717.	3.6	119
6	Machine learning in tolerancing for additive manufacturing. CIRP Annals - Manufacturing Technology, 2018, 67, 157-160.	3.6	117
7	The skin model, a comprehensive geometric model for engineering design. CIRP Annals - Manufacturing Technology, 2013, 62, 143-146.	3.6	107
8	From solid modelling to skin model shapes: Shifting paradigms in computer-aided tolerancing. CIRP Annals - Manufacturing Technology, 2014, 63, 137-140.	3.6	71
9	From reverse engineering to shape engineering in mechanical design. CIRP Annals - Manufacturing Technology, 2016, 65, 165-168.	3.6	60
10	Quick GPS: A new CAT system for single-part tolerancing. CAD Computer Aided Design, 2010, 42, 768-780.	2.7	53
11	Discrete shape modeling for skin model representation. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2013, 227, 672-680.	2.4	48
12	Deviation Modeling and Shape Transformation in Design for Additive Manufacturing. Procedia CIRP, 2017, 60, 211-216.	1.9	47
13	An ontology-based modelling and reasoning framework for assembly sequence planning. International Journal of Advanced Manufacturing Technology, 2018, 94, 4187-4197.	3.0	40
14	Geometric tolerance and manufacturing assemblability estimation of metal additive manufacturing (AM) processes. Materials and Design, 2020, 194, 108842.	7.0	36
15	Contact and Mobility Simulation for Mechanical Assemblies Based on Skin Model Shapes. Journal of Computing and Information Science in Engineering, 2015, 15, .	2.7	33
16	Status and Prospects of Skin Model Shapes for Geometric Variations Management. Procedia CIRP, 2016, 43, 154-159.	1.9	33
17	Convolutional Neural Network for geometric deviation prediction in Additive Manufacturing. Procedia CIRP, 2020, 91, 534-539.	1.9	29
18	Characterization of the main error sources of chromatic confocal probes for dimensional measurement. Measurement Science and Technology, 2014, 25, 044011.	2.6	28

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19	Test artefacts for additive manufacturing: A design methodology review. CIRP Journal of Manufacturing Science and Technology, 2020, 31, 14-24.	4.5	22
20	Integration of Thermal Effects into Tolerancing Using Skin Model Shapes. Procedia CIRP, 2016, 43, 196-201.	1.9	21
21	Information exchange standards for design, tolerancing and Additive Manufacturing: a research review. International Journal on Interactive Design and Manufacturing, 2018, 12, 495-504.	2.2	21
22	A new method for aspherical surface fitting with large-volume datasets. Precision Engineering, 2014, 38, 935-947.	3.4	20
23	Unified variation modeling of sheet metal assembly considering rigid and compliant variations. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2015, 229, 495-507.	2.4	20
24	Setup of a high-precision profilometer and comparison of tactile and optical measurements of standards. Measurement Science and Technology, 2014, 25, 044016.	2.6	19
25	Digital twin data: methods and key technologies. Digital Twin, 0, 1, 2.	0.0	18
26	A Comprehensive Framework for Skin Model Simulation. , 2012, , .		17
27	Novel automated methods for coarse and fine registrations of point clouds in high precision metrology. International Journal of Advanced Manufacturing Technology, 2015, 81, 795-810.	3.0	17
28	An Improved Tolerance Analysis Method Based on Skin Model Shapes of Planar Parts. Procedia CIRP, 2016, 56, 237-242.	1.9	16
29	Curvature-based Registration and Segmentation for Multisensor Coordinate Metrology. Procedia CIRP, 2013, 10, 112-118.	1.9	15
30	Environmental Performance and Key Characteristics in Additive Manufacturing: A Literature Review. Procedia CIRP, 2018, 69, 148-153.	1.9	14
31	Fit4CAD: A point cloud benchmark for fitting simple geometric primitives in CAD objects. Computers and Graphics, 2022, 102, 133-143.	2.5	14
32	STEP-NC based reverse engineering of in-process model of NC simulation. International Journal of Advanced Manufacturing Technology, 2016, 86, 3267-3288.	3.0	13
33	A novel representation method of non-ideal surface morphologies and its application in shaft-hole sealing simulation analysis. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2019, 233, 575-587.	2.4	13
34	A new partitioning process for geometrical product specifications and verification. Precision Engineering, 2020, 62, 282-295.	3.4	13
35	Geometric Product Specification of Gears: The GeoSpelling Perspective. Procedia CIRP, 2015, 27, 90-96.	1.9	12
36	Investigation of minimum zone assessment methods for aspheric shapes. Precision Engineering, 2018, 52, 300-307.	3.4	12

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37	Toward a Classification of Partitioning Operations for Standardization of Geometrical Product Specifications and Verification. Procedia CIRP, 2018, 75, 325-330.	1.9	12
38	Shape Transformation Perspective for Geometric Deviation Modeling in Additive Manufacturing. Procedia CIRP, 2018, 75, 75-80.	1.9	12
39	Form Defects Consideration in Polytope-Based Tolerance Analysis. Journal of Mechanical Design, Transactions of the ASME, 2019, 141, .	2.9	12
40	Statistical Modal Analysis for Out-of-Plane Deviation Prediction in Additive Manufacturing Based on Finite Element Simulation. Journal of Manufacturing Science and Engineering, Transactions of the ASME, 2019, 141, .	2.2	12
41	Skin Model Shapes: Offering New Potentials for Modelling Product Shape Variability. , 2015, , .		11
42	Enhanced Invariance Class Partitioning using Discrete Curvatures and Conformal Geometry. CAD Computer Aided Design, 2021, 133, 102985.	2.7	11
43	Coevolution of digitalisation, organisations and Product Development Cycle. CIRP Annals - Manufacturing Technology, 2021, 70, 519-542.	3.6	10
44	Comparison of tactile and chromatic confocal measurements of aspherical lenses for form metrology. International Journal of Precision Engineering and Manufacturing, 2014, 15, 821-829.	2.2	9
45	Tolerancing Informatics: Towards Automatic Tolerancing Information Processing in Geometrical Variations Management. Applied Sciences (Switzerland), 2021, 11, 198.	2.5	9
46	3D Measurement and Characterization of Ultra-precision Aspheric Surfaces. Procedia CIRP, 2015, 27, 41-46.	1.9	8
47	Machining Feature Recognition from In-Process Model of NC Simulation. Computer-Aided Design and Applications, 2015, 12, 383-392.	0.6	8
48	Review of Shape Deviation Modeling for Additive Manufacturing. Lecture Notes in Mechanical Engineering, 2017, , 241-250.	0.4	8
49	Freeform Machining Feature Recognition with Manufacturability Analysis. Procedia CIRP, 2018, 72, 1475-1480.	1.9	8
50	Modeling Key Characteristics in the Value Chain of Additive Manufacturing. Procedia CIRP, 2018, 70, 90-95.	1.9	8
51	New development and distribution concepts for Education in Coordinate Metrology. Procedia CIRP, 2018, 75, 320-324.	1.9	8
52	Integration of surface deformations into polytope-based tolerance analysis: application to an over-constrained mechanism. Procedia CIRP, 2020, 92, 21-26.	1.9	8
53	Geometric Tolerance Characterization of Laser Powder Bed Fusion Processes Based on Skin Model Shapes. Procedia CIRP, 2020, 92, 169-174.	1.9	8
54	A function-oriented surface reconstruction framework for reverse engineering. CIRP Annals - Manufacturing Technology, 2021, 70, 135-138.	3.6	8

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55	DIMENSIONAL METROLOGY OF FLEXIBLE PARTS: IDENTIFICATION OF GEOMETRICAL DEVIATIONS FROM OPTICAL MEASUREMENTS. , 2006, , .		8
56	Ontology Model for Assembly Process Planning Knowledge. IEEE International Conference on Industrial Engineering and Engineering Management, 2015, , 419-423.	0.1	8
57	Polytope-based tolerance analysis with consideration of form defects and surface deformations. International Journal of Computer Integrated Manufacturing, 2021, 34, 57-75.	4.6	8
58	Generative adversarial networks for tolerance analysis. CIRP Annals - Manufacturing Technology, 2022, 71, 133-136.	3.6	8
59	A novel hybrid trust region minimax fitting algorithm for accurate dimensional metrology of aspherical shapes. Measurement: Journal of the International Measurement Confederation, 2018, 127, 134-140.	5.0	7
60	Geometric deviation modeling with Statistical Shape Analysis in Design for Additive Manufacturing. Procedia CIRP, 2019, 84, 496-501.	1.9	7
61	Digital twin data: methods and key technologies. Digital Twin, 0, 1, 2.	0.0	7
62	Geometric Enhanced Ontology Modeling for Assembly Process Planning. Jixie Gongcheng Xuebao/Chinese Journal of Mechanical Engineering, 2015, 51, 202.	0.5	7
63	Metrological characterization of optical confocal sensors measurements (20 and 350 travel ranges). Journal of Physics: Conference Series, 2014, 483, 012015.	0.4	6
64	Freeform Machining Features: New Concepts and Classification. Procedia CIRP, 2018, 67, 482-487.	1.9	6
65	Skin Model Shapes for multi-stage manufacturing in single-part production. Procedia CIRP, 2020, 92, 200-205.	1.9	6
66	A Novel Method for Assemblability Evaluation of Non-Ideal Cylindrical Parts Assembly. CAD Computer Aided Design, 2021, 134, 103002.	2.7	6
67	SHREC 2022: Fitting and recognition of simple geometric primitives on point clouds. Computers and Graphics, 2022, 107, 32-49.	2.5	6
68	On the usage of Least Material Requirement for Functional Tolerancing. Procedia CIRP, 2018, 75, 179-184.	1.9	5
69	Editorial for the special issue on â€˜smart manufacturing and digital factoryâ€™. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2019, 233, 1341-1341.	2.4	5
70	STEP/STEP-NC-compliant manufacturing information of 3D printing for FDM technology. International Journal of Advanced Manufacturing Technology, 2021, 112, 1713-1728.	3.0	5
71	Statistical Tolerancing based on Variation of Point-set. Procedia CIRP, 2013, 10, 9-16.	1.9	4
72	Reconstruction of freeform surfaces for metrology. Journal of Physics: Conference Series, 2014, 483, 012003.	0.4	4

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73	Improved curvature-based registration methods for high-precision dimensional metrology. Precision Engineering, 2016, 46, 232-242.	3.4	4
74	Comparative Study for the Metrological Characterization of Additive Manufacturing artefacts. Lecture Notes in Mechanical Engineering, 2017, , 191-200.	0.4	4
75	A Domain Ontology for Assembly Tolerance Design. , 2017, , .		4
76	Consideration of Working Conditions in Assembly Tolerance Analysis. Procedia CIRP, 2018, 75, 226-231.	1.9	4
77	Axiomatic Design of Customised Additive Manufacturing Artefacts. Procedia CIRP, 2020, 91, 899-904.	1.9	4
78	Considerations of form defects and surface deformations for tolerance analysis of cylindrical components. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2021, 235, 1447-1457.	2.4	4
79	Variation propagation modeling in multistage machining processes considering form errors and N-2-1 fixture layouts. International Journal of Advanced Manufacturing Technology, 2021, 116, 507-522.	3.0	4
80	Generation of Reference Softgauges for Minimum Zone Fitting Algorithms: Case of Aspherical and Freeform Surfaces. Nanomaterials, 2021, 11, 3386.	4.1	4
81	Data-driven deviation generation for non-ideal surfaces of Skin Model Shapes. Procedia CIRP, 2022, 109, 1-6.	1.9	4
82	A Proposal of Manufacturing Execution System Integration in Design for Additive Manufacturing. IFIP Advances in Information and Communication Technology, 2016, , 761-770.	0.7	3
83	Toward a Mathematical Definition of Reconstruction Operation for ISO GPS Standards. Procedia CIRP, 2020, 92, 152-157.	1.9	3
84	An approach to analyze the position and orientation between two parts assembled by non-ideal planes. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2021, 235, 41-53.	2.4	3
85	Toward non-default partitioning for compound feature identification in engineering design. Procedia CIRP, 2021, 100, 852-857.	1.9	3
86	Traceable Reference Full Metrology Chain for Innovative Aspheric and Freeform Optical Surfaces Accurate at the Nanometer Level. Sensors, 2021, 21, 1103.	3.8	3
87	Error evaluation in reverse engineering of aspherical lenses. , 2015, , .		3
88	Data Fusion-based Method for the Assessment of Minimum Zone for Aspheric Optics. Computer-Aided Design and Applications, 2020, 18, 309-327.	0.6	3
89	Design of an ultra-high precision machine for form measurement. Procedia CIRP, 2019, 84, 942-947.	1.9	2
90	MODELOS DE INFORMACIÃ“N DE PROCESO BASADOS EN STEP PARA LA FABRICACIÃ“N ADITIVA: APLICACIÃ“N AL MODELADO DE DEPOSICIÃ“N POR FUSIÃ“N. Dyna (Spain), 2019, 94, 197-202.	0.2	2

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91	A LANDSLIDE PREDICTION MODEL BASED ON LOAD-UNLOAD RESPONSE RATIO THEORY AND ITS APPLICATION. Dyna (Spain), 2019, 94, 304-312.	0.2	2
92	Reference data simulation for Lâˆž fitting of aspheres. Procedia CIRP, 2018, 75, 331-336.	1.9	1
93	On the Use of Conformal Geometric Algebra in Geometric Constraint Solving. , 2011, , 217-232.		1
94	Feature Recognition for Virtual Machining. IEEE International Conference on Industrial Engineering and Engineering Management, 2015, , 123-127.	0.1	0
95	Parametric Model Variability of the Proximal Femoral Sculptural Shape. International Journal of Precision Engineering and Manufacturing, 2018, 19, 1047-1054.	2.2	0
96	Integrated training in using different Coordinate Measuring Systems to support Digital Manufacturing. Procedia Manufacturing, 2019, 41, 634-641.	1.9	0
97	A Framework for Curvature-Based CAD Mesh Partitioning. Lecture Notes in Mechanical Engineering, 2021, , 228-234.	0.4	0