Maxence Bigerelle

List of Publications by Year
in descending order

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140 papers	4,372 citations	117453 34 h-index	118652 62 g-index
140 all docs	140 docs citations	140 times ranked	4677 citing authors

#	Article	IF	Citations
1	The relative influence of the topography and chemistry of TiAl6V4 surfaces on osteoblastic cell behaviour. Biomaterials, 2000, 21, 1567-1577.	5.7	360
2	Topography effects of pure titanium substrates on human osteoblast long-term adhesion. Acta Biomaterialia, 2005, 1, 211-222.	4.1	270
3	In vitro MC3T3 osteoblast adhesion with respect to surface roughness of Ti6Al4V substrates. New Biotechnology, 2002, 19, 133-141.	2.7	191
4	Improvement in the morphology of Ti-based surfaces: a new process to increase in vitro human osteoblast response. Biomaterials, 2002, 23, 1563-1577.	5.7	185
5	Relative influence of surface topography and surface chemistry on cell response to bone implant materials. Part 2: Biological aspects. Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine, 2010, 224, 1487-1507.	1.0	185
6	Effect of grooved titanium substratum on human osteoblastic cell growth. Journal of Biomedical Materials Research Part B, 2002, 60, 529-540.	3.0	158
7	Role of materials surface topography on mammalian cell response. International Materials Reviews, 2011, 56, 243-266.	9.4	139
8	Effect of Substrate Temperature on Pattern Formation of Nanoparticles from Volatile Drops. Langmuir, 2015, 31, 3354-3367.	1.6	129
9	How to select the most relevant 3D roughness parameters of a surface. Scanning, 2014, 36, 150-160.	0.7	121
10	Fractals and fracture. Engineering Fracture Mechanics, 1998, 61, 119-139.	2.0	119
11	Statistical demonstration of the relative effect of surface chemistry and roughness on human osteoblast short-term adhesion. Journal of Materials Science: Materials in Medicine, 2006, 17, 471-479.	1.7	106
12	New insights on contact angle/roughness dependence on high surface energy materials. Applied Surface Science, 2011, 257, 9631-9638.	3.1	98
13	Wettability versus roughness: Multi-scales approach. Tribology International, 2015, 82, 343-349.	3.0	82
14	Modelling approach in cell/material interactions studiesâ˜†. Biomaterials, 2006, 27, 1187-1199.	5.7	77
15	Relative influence of surface topography and surface chemistry on cell response to bone implant materials. Part 1: Physico-chemical effects. Proceedings of the Institution of Mechanical Engineers, Part H: Journal of Engineering in Medicine, 2010, 224, 1471-1486.	1.0	76
16	Statistical correlation between cell adhesion and proliferation on biocompatible metallic materials. Journal of Biomedical Materials Research Part B, 2005, 72A, 36-46.	3.0	65
17	Influence of abrasive grain geometry on friction coefficient and wear rate in belt finishing. Tribology International, 2013, 59, 30-37.	3.0	65
18	Fractal dimension and classification of music. Chaos, Solitons and Fractals, 2000, 11, 2179-2192.	2.5	64

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19	Multiscale roughness analysis of engineering surfaces: A comparison of methods for the investigation of functional correlations. Mechanical Systems and Signal Processing, 2016, 66-67, 437-457.	4.4	56
20	Assessment of the constitutive law by inverse methodology: Small punch test and hardness. Journal of Nuclear Materials, 2006, 352, 97-106.	1.3	55
21	Effect of surface roughness in the determination of the mechanical properties of material using nanoindentation test. Scanning, 2014, 36, 134-149.	0.7	50
22	Mechanical modelling of micro-scale abrasion in superfinish belt grinding. Tribology International, 2008, 41, 992-1001.	3.0	48
23	Multiscale functional analysis of wear. Wear, 2005, 258, 232-239.	1.5	47
24	Relation between roughness and processing conditions of AISI 316L stainless steel treated by ultrasonic shot peening. Tribology International, 2015, 82, 319-329.	3.0	47
25	On the relation between surface roughness of metallic substrates and adhesion of human primary bone cells. Scanning, 2014, 36, 11-20.	0.7	45
26	Relevance of roughness parameters for describing and modelling machined surfaces. Journal of Materials Science, 2003, 38, 2525-2536.	1.7	43
27	A Four-Discrete-Position Electromagnetic Actuator: Modeling and Experimentation. IEEE/ASME Transactions on Mechatronics, 2010, 15, 88-96.	3.7	43
28	Statistical analysis of the Vickers hardness. Materials Science & Engineering A: Structural Materials: Properties, Microstructure and Processing, 1999, 262, 256-263.	2.6	42
29	The computer-based bootstrap method as a tool to select a relevant surface roughness parameter. Wear, 2003, 254, 450-460.	1.5	40
30	Roughness characteristic length scales of belt finished surface. Journal of Materials Processing Technology, 2009, 209, 6103-6116.	3.1	38
31	Estimating the parameters of a generalized lambda distribution. Computational Statistics and Data Analysis, 2007, 51, 2813-2835.	0.7	37
32	Roughness characteristic length scales of micro-machined surfaces: A multi-scale modelling. Sensors and Actuators B: Chemical, 2007, 126, 126-137.	4.0	36
33	A numerical method to calculate the Abbott parameters: A wear application. Tribology International, 2007, 40, 1319-1334.	3.0	35
34	Existence of a typical threshold in the response of human mesenchymal stem cells to a peak and valley topography. Acta Biomaterialia, 2011, 7, 3302-3311.	4.1	35
35	Determination of mechanical properties by nanoindentation in the case of viscous materials. International Journal of Materials Research, 2012, 103, 715-722.	0.1	34
36	Relation between surface hardening and roughness induced by ultrasonic shot peening. Tribology International, 2015, 83, 105-113.	3.0	33

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37	Bootstrap analysis of the relation between initial adhesive events and long-term cellular functions of human osteoblasts cultured on biocompatible metallic substrates. Acta Biomaterialia, 2005, 1, 499-510.	4.1	32
38	Characterization of Breast Implant Surfaces, Shapes, and Biomechanics: A Comparison of High Cohesive Anatomically Shaped Textured Silicone, Breast Implants from Three Different Manufacturers. Aesthetic Plastic Surgery, 2016, 40, 89-97.	0.5	32
39	An unscaled parameter to measure the order of surfaces: a new surface elaboration to increase cells adhesion. New Biotechnology, 2002, 19, 79-83.	2.7	31
40	Bootstrap analysis of FCGR, application to the Paris relationship and to lifetime prediction. International Journal of Fatigue, 1999, 21, 299-307.	2.8	30
41	Effect of a goldâ€“palladium coating on the long-term adhesion of human osteoblasts on biocompatible metallic materials. Surface and Coatings Technology, 2006, 200, 6325-6330.	2.2	30
42	A generic statistical methodology to predict the maximum pit depth of a localized corrosion process. Corrosion Science, 2011, 53, 2453-2467.	3.0	30
43	A kinetic approach to osteoblast adhesion on biomaterial surface. Journal of Biomedical Materials Research - Part A, 2005, 75A, 530-540.	2.1	29
44	A comparison of models for predicting the true hardness of thin films. Thin Solid Films, 2012, 524, 229-237.	0.8	28
45	Roughness statistical influence on cell adhesion using profilometry and multiscale analysis. Scanning, 2014, 36, 2-10.	0.7	26
46	Evaporation of Binary Sessile Drops: Infrared and Acoustic Methods To Track Alcohol Concentration at the Interface and on the Surface. Langmuir, 2016, 32, 9836-9845.	1.6	26
47	An expert system to characterise the surfaces morphological properties according to their tribological functionalities: The relevance of a pair of roughness parameters. Tribology International, 2013, 59, 190-202.	3.0	25
48	Rolls wear characterization in hot rolling process. Tribology International, 2016, 100, 328-337.	3.0	25
49	Application of Lambda Distributions and Bootstrap analysis to the prediction of fatigue lifetime and confidence intervals. International Journal of Fatigue, 2006, 28, 223-236.	2.8	24
50	Application of the generalized lambda distributions in a statistical process control methodology. Journal of Process Control, 2006, 16, 1087-1098.	1.7	23
51	The multi-scale roughness analyses and modeling of abrasion with the grit size effect on ground surfaces. Wear, 2012, 286-287, 124-135.	1.5	23
52	Additive manufacturing process creates local surface roughness modifications leading to variation in cell adhesion on multifaceted TiAl6V4 samples. Bioprinting, 2019, 16, e00054.	2.9	23
53	Dynamic evolution of interface roughness during friction and wear processes. Scanning, 2014, 36, 30-38.	0.7	22
54	A Biophysical Model for Curvature-Guided Cell Migration. Biophysical Journal, 2019, 117, 1136-1144.	0.2	22

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55	Multiscale roughness analysis in injectionâ€molding process. Polymer Engineering and Science, 2008, 48, 1725-1736.	1.5	21
56	Multi-scale analysis of high precision surfaces by Stylus Profiler, Scanning White-Light Interferometry and Atomic Force Microscopy. International Journal of Surface Science and Engineering, 2009, 3, 310.	0.4	21
57	Patterns from dried water-butanol binary-based nanofluid drops. Journal of Nanoparticle Research, 2017, 19, 1.	0.8	21
58	Zeroâ€Point Correction Method for Nanoindentation Tests to Accurately Quantify Hardness and Indentation Size Effect. Strain, 2012, 48, 491-497.	1.4	20
59	The ability of precision hard turning to increase rolling contact fatigue life. Tribology International, 2013, 59, 141-146.	3.0	20
60	Identification of scratch mechanisms on a retrieved metallic femoral head. Wear, 2005, 258, 240-250.	1.5	19
61	Roughness signature of tribological contact calculated by a new method of peaks curvature radius estimation on fractal surfaces. Tribology International, 2013, 65, 235-247.	3.0	19
62	Definition of a simple statistical parameter for the quantification of orientation in two dimensions: Application to cells on grooves of nanometric depths. Acta Biomaterialia, 2010, 6, 2590-2598.	4.1	18
63	Quantification of first contact detection errors on hardness and indentation size effect measurements. Tribology International, 2013, 59, 154-162.	3.0	18
64	A new method to calculate the fractal dimension of surfaces: application to human cell proliferation. Computers and Mathematics With Applications, 2001, 42, 241-253.	1.4	17
65	Statistical artefacts in the determination of the fractal dimension by the slit island method. Engineering Fracture Mechanics, 2004, 71, 1081-1105.	2.0	17
66	About the relevance of roughness parameters used for characterizing worn femoral heads. Tribology International, 2006, 39, 1527-1537.	3.0	17
67	Analysis of nanoindentation curves in the case of bulk amorphous polymers. International Journal of Materials Research, 2009, 100, 943-949.	0.1	16
68	A New Approach to Predict the Pit Depth Extreme Value of a Localized Corrosion Process. ISIJ International, 2003, 43, 720-725.	0.6	15
69	Contribution of statistical methods to the study of worn paint coatings surface topography. Surface and Coatings Technology, 2006, 200, 6088-6100.	2.2	15
70	A multi-scale approach of roughness measurements: Evaluation of the relevant scale. Materials Science and Engineering C, 2007, 27, 1434-1438.	3.8	15
71	Review on Numerical Modeling of Instrumented Indentation Tests for Elastoplastic Material Behavior Identification. Archives of Computational Methods in Engineering, 2015, 22, 577-593.	6.0	15
72	Local coefficient of friction, sub-surface stresses and temperature distribution during sliding contact. International Journal of Materials and Product Technology, 2010, 38, 44.	0.1	14

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73	Effect of Substrate Temperature on Pattern Formation of Bidispersed Particles from Volatile Drops. Journal of Physical Chemistry B, 2017, 121, 11002-11017.	1.2	14
74	Relevance of Wavelet Shape Selection in a complex signal. Mechanical Systems and Signal Processing, 2013, 41, 14-33.	4.4	13
75	Multiscale characteristic lengths of abraded surfaces: Three stages of the grit-size effect. Tribology International, 2011, 44, 63-80.	3.0	12
76	Different surface sensing of the cell body and nucleus in healthy primary cells and in a cancerous cell line on nanogrooves. Biointerphases, 2015, 10, 031004.	0.6	12
77	Surface Reflectance: An Optical Method for Multiscale Curvature Characterization of Wear on Ceramicâ€“Metal Composites. Materials, 2020, 13, 1024.	1.3	12
78	Influence of the morphological texture on the low wear damage of paint coated sheets. Progress in Organic Coatings, 2006, 56, 81-89.	1.9	11
79	Comparison of three multiscale methods for topographic analyses. Surface Topography: Metrology and Properties, 2020, 8, 024002.	0.9	11
80	The first indenter-sample contact and the indentation size effect in nano-hardness measurement. Materials Science and Engineering C, 2007, 27, 1448-1451.	3.8	10
81	Multiscale analysis of abrasion damage on stainless steel. Surface Engineering, 2008, 24, 8-17.	1.1	10
82	Presentation of a new method to measure the friction coefficient using an electromagnetic digital device. Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, 2010, 224, 1019-1026.	1.0	10
83	Multiscale morphology of high-precision turning process surfaces. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2007, 221, 1485-1497.	1.5	8
84	Quantitative approach to determine the mechanical properties by nanoindentation test: Application on sandblasted materials. Tribology International, 2015, 82, 297-304.	3.0	8
85	Digital Cultural Heritage Preservation in Art Painting: A Surface Roughness Approach to the Brush Strokes. Sensors, 2020, 20, 6269.	2.1	8
86	Characterisation of the diffusion states by data compression. Computational Materials Science, 2002, 24, 133-138.	1.4	7
87	Influence of roughness on ZDDP tribofilm formation in boundary lubricated fretting. Tribology - Materials, Surfaces and Interfaces, 2012, 6, 182-188.	0.6	7
88	3D parameter to quantify the anisotropy measurement of periodic structures on rough surfaces. Scanning, 2014, 36, 127-133.	0.7	7
89	Relevance of roughness parameters of surface finish in precision hard turning. Scanning, 2014, 36, 86-94.	0.7	7
90	Identification of lubrication regime on textured surfaces by multi-scale decomposition. Tribology International, 2015, 82, 375-386.	3.0	7

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91	A multi-topographical-instrument analysis: the breast implant texture measurement. Surface Topography: Metrology and Properties, 2017, 5, 025004.	0.9	7
92	A new method to calculate the fractal dimension of an interface application to a Monte Carlo diffusion process. Computational Materials Science, 2002, 24, 122-127.	1.4	6
93	Relationship between brightness and roughness of polypropylene abraded surfaces. Polymer Engineering and Science, 2016, 56, 103-117.	1.5	6
94	Wear pattern on a retrieved Total Knee Replacement: The â€œfourth body abrasionâ€• Biotribology, 2017, 11, 29-43.	0.9	6
95	A Multiscale Topographical Analysis Based on Morphological Information: The HEVC Multiscale Decomposition. Materials, 2020, 13, 5582.	1.3	6
96	Structure coarsening, entropy and compressed space dimension. Chaos, Solitons and Fractals, 2003, 18, 665-679.	2.5	5
97	Monte Carlo simulation of gold nano-colloids aggregation morphologies on a heterogeneous surface. Materials Science and Engineering C, 2006, 26, 1111-1116.	3.8	5
98	A multiscale topography analysis of ground stainless steel and titanium alloys. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2007, 221, 1407-1420.	1.5	5
99	A new methodology for quantifying the multi-scale similarity of images. Microelectronic Engineering, 2007, 84, 424-430.	1.1	5
100	High temperature creep properties of zirconium and Zircaloy-4 in vacuum and oxygen environments. Journal of Nuclear Materials, 2007, 362, 309-315.	1.3	5
101	Optimized design of a four discrete positions electromagnetic actuator. , 2009, , .		5
102	Scratch tests to contribute designing performance maps of multilayer polymeric coatingsâ˜†â˜†This paper was presented at the 36th Leedsâ€“Lyon Symposium on Tribology, Lyon 2009.. Tribology International, 2011, 44, 585-591.	3.0	5
103	The representative topography of worn hot rolling mill cylinders. Tribology International, 2015, 82, 387-399.	3.0	5
104	Correlation modeling between process condition of sandblasting and surface texture: A multi-scale approach. Scanning, 2016, 38, 191-201.	0.7	5
105	Mechanical Properties of Spark Plasma Sintering-Processed Pure Ti and Ti-6Al-4V Alloys: A Comparative Study between Harmonic and Non-Harmonic Microstructures. Compounds, 2021, 1, 41-57.	1.0	5
106	Perimeter analysis of the Von Koch island, application to the evolution of grain boundaries during heating. Journal of Materials Science, 2006, 41, 2509-2516.	1.7	4
107	Optimization of the straightness measurements on rough surfaces by Monte Carlo simulation. Scanning, 2014, 36, 161-169.	0.7	4
108	Reflection on the measurement and use of the topography of the indentation imprint. Scanning, 2014, 36, 115-126.	0.7	4

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109	Flow rate distribution and effect of convection and radiation heat transfer on the temperature profile during a coil annealing process. Heat and Mass Transfer, 2015, 51, 265-276.	1.2	4
110	Decomposition of a tribological system by chaos theory on rough surfaces. Tribology International, 2015, 82, 561-576.	3.0	4
111	Surface Texturization of Breast Implants Impacts Extracellular Matrix and Inflammatory Gene Expression in Asymptomatic Capsules. Plastic and Reconstructive Surgery, 2020, 145, 542e-551e.	0.7	4
112	Title is missing!. Journal of Materials Science Letters, 2001, 20, 1037-1039.	0.5	3
113	Statistical approach of chemistry and topography effect on human osteoblast adhesion. Journal of Biomedical Materials Research - Part A, 2010, 94A, 1111-1123.	2.1	3
114	A Method to Determine the Spatial Scale Implicated in Adhesion. Application on Human Cell Adhesion on Fractal Isotropic Rough Surfaces. Journal of Adhesion, 2011, 87, 644-670.	1.8	3
115	Quantification of the Morphological Signature of Roping Based on Multiscale Analysis and Autocorrelation Function Description. Materials, 2020, 13, 3040.	1.3	3
116	Mechanical Integrity of 3D Rough Surfaces during Contact. Coatings, 2020, 10, 15.	1.2	3
117	How to Select 2D and 3D Roughness Parameters at Their Relevant Scales by the Analysis of Covariance. Materials, 2020, 13, 1526.	1.3	3
118	Multiscale measures of equilibrium on finite dynamic systems. Chaos, Solitons and Fractals, 2004, 19, 1313-1322.	2.5	2
119	The use of multiscale transfer functions for understanding the impact of successive mechanical treatments on surface topography. Tribology International, 2017, 114, 429-435.	3.0	2
120	Torsion delamination test, a new method to quantify the adhesion of coating: Application to car coatings. Progress in Organic Coatings, 2017, 110, 134-139.	1.9	2
121	Influence de lâ€™amplitude de la rugositÃ© de surfaces sablÃ©es sur la mesure de duretÃ© par nanoindentation. Materiaux Et Techniques, 2013, 101, 305.	0.3	2
122	Analyse multi-Ã©chelle de l'abrasion. Mecanique Et Industries, 2006, 7, 13-20.	0.2	2
123	Relations entre lâ€™entropie physique, le codage de lâ€™information et lâ€™Ã©nergie de simulation. Canadian Journal of Physics, 2007, 85, 1381-1394.	0.4	1
124	Comments on the Mixture Detection Rule Used in SPC Control Charts. Communications in Statistics Part B: Simulation and Computation, 2007, 36, 1321-1331.	0.6	1
125	Multiscale similarity characterization of abraded surfaces. Proceedings of the Institution of Mechanical Engineers, Part B: Journal of Engineering Manufacture, 2007, 221, 1473-1482.	1.5	1
126	A new model of the heat transfer in materials: the surfacic potential algorithm. International Journal of Materials and Product Technology, 2010, 38, 66.	0.1	1

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127	Relation between entropy, free energy and computational energy. International Journal of Materials and Product Technology, 2010, 38, 35.	0.1	1
128	An expert system to characterize the surface morphological properties according to their functionalities. Journal of Physics: Conference Series, 2011, 311, 012010.	0.3	1
129	3D finite element model of elastoplastic contact on the double sinus rough surface. Journal of Physics: Conference Series, 2011, 311, 012011.	0.3	1
130	Wavelet theory and belt finishing process, influence of wavelet shape on the surface roughness parameter values. Journal of Physics: Conference Series, 2011, 311, 012013.	0.3	1
131	Biocompatibility of the electrical discharge machining process on titanium surfaces. International Journal of Mechatronics and Manufacturing Systems, 2012, 5, 419.	0.1	1
132	Identification of Local Lubrication Regimes on Textured Surfaces by 3D Roughness Curvature Radius. Advanced Materials Research, 2014, 966-967, 120-125.	0.3	1
133	Conductimetry technique for the measurement of thin liquid film thickness between two solid surfaces in relative motion: hydrodynamic lubrication. Mechanics and Industry, 2019, 20, 601.	0.5	1
134	Numerical Study of the Toughness of Complex Metal Matrix Composite Topologies. Applied Sciences (Switzerland), 2020, 10, 6250.	1.3	1
135	The measurement problem on classical diffusion process: inverse method on stochastic processes. Chaos, Solitons and Fractals, 2004, 20, 855-861.	2.5	0
136	Analyse de la rugositÃ© obtenue par un nouveau procÃ©dÃ© de tribofinition. Mecanique Et Industries, 2007, 8, 7-25.	0.2	0
137	Relation usinabilitÃ©â€“topographie de la surface usinÃ©e. Analyse conventionnelle et par la thÃ©orie du chaos. Mecanique Et Industries, 2008, 9, 273-293.	0.2	0
138	How to characterize the regularity of surface topographies?. Journal of Physics: Conference Series, 2011, 311, 012012.	0.3	0
139	Analyses of the Instabilities in the Discretized Diffusion Equations via Information Theory. Entropy, 2016, 18, 155.	1.1	0
140	Framework of models for selecting manufacturing processes and associated parameters for surface topographies. Mechanics and Industry, 2019, 20, 301.	0.5	0