JÃ©rÃ´me Chevalier

List of Publications by Year
in descending order

127 papers	9,905 citations	46918 47 h-index	35952 97 g-index
131 all docs	131 docs citations	131 times ranked	6810 citing authors

#	Article	IF	Citations
1	The Tetragonalâ€Monoclinic Transformation in Zirconia: Lessons Learned and Future Trends. Journal of the American Ceramic Society, 2009, 92, 1901-1920.	1.9	1,162
2	What future for zirconia as a biomaterial?. Biomaterials, 2006, 27, 535-543.	5.7	957
3	Ceramics for medical applications: A picture for the next 20 years. Journal of the European Ceramic Society, 2009, 29, 1245-1255.	2.8	603
4	Lowâ€Temperature Aging of Yâ€TZP Ceramics. Journal of the American Ceramic Society, 1999, 82, 2150-2154.	1.9	559
5	Low-Temperature Degradation of Zirconia and Implications for Biomedical Implants. Annual Review of Materials Research, 2007, 37, 1-32.	4.3	548
6	Critical effect of cubic phase on aging in 3mol% yttria-stabilized zirconia ceramics for hip replacement prosthesis. Biomaterials, 2004, 25, 5539-5545.	5.7	292
7	Effect of micro- and macroporosity of bone substitutes on their mechanical properties and cellular response. Journal of Materials Science: Materials in Medicine, 2003, 14, 1089-1097.	1.7	277
8	Sintering, crystallisation and biodegradation behaviour of BioglassÂ®-derived glassâ€“ceramics. Faraday Discussions, 2007, 136, 27.	1.6	253
9	Influence of surface finish and residual stresses on the ageing sensitivity of biomedical grade zirconia. Biomaterials, 2006, 27, 2186-2192.	5.7	227
10	Aging resistance, mechanical properties and translucency of different yttria-stabilized zirconia ceramics for monolithic dental crown applications. Dental Materials, 2018, 34, 879-890.	1.6	212
11	Fracture toughness, strength and slow crack growth in a ceria stabilized zirconiaâ€“alumina nanocomposite for medical applications. Biomaterials, 2008, 29, 3636-3641.	5.7	178
12	A critical comparison of methods for the determination of the aging sensitivity in biomedical grade yttria-stabilized zirconia. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2005, 72B, 239-245.	1.6	163
13	Low-temperature ageing of zirconia-toughened alumina ceramics and its implication in biomedical implants. Journal of the European Ceramic Society, 2003, 23, 2975-2982.	2.8	157
14	Toughening of bio-ceramics scaffolds by polymer coating. Journal of the European Ceramic Society, 2007, 27, 2679-2685.	2.8	151
15	Subcritical Crack Propagation in 3Yâ€TZP Ceramics: Static and Cyclic Fatigue. Journal of the American Ceramic Society, 1999, 82, 3129-3138.	1.9	142
16	Trade-off between fracture resistance and translucency of zirconia and lithium-disilicate glass ceramics for monolithic restorations. Acta Biomaterialia, 2019, 91, 24-34.	4.1	138
17	On the kinetics and impact of tetragonal to monoclinic transformation in an alumina/zirconia composite for arthroplasty applications. Biomaterials, 2009, 30, 5279-5282.	5.7	127
18	Microstructure development in calcium hexaluminate. Journal of the European Ceramic Society, 2001, 21, 381-387.	2.8	119

#	ARTICLE	IF	CITATIONS
19	Modeling the aging kinetics of zirconia ceramics. Journal of the European Ceramic Society, 2004, 24, 3483-3489.	2.8	107
20	Elaboration of Alumina-Zirconia Composites: Role of the Zirconia Content on the Microstructure and Mechanical Properties. Materials, 2013, 6, 2090-2102.	1.3	99
21	Using graphene networks to build bioinspired self-monitoring ceramics. Nature Communications, 2017, 8, 14425.	5.8	99
22	Slowâ€Crackâ€Growth Behavior of Zirconiaâ€Toughened Alumina Ceramics Processed by Different Methods. Journal of the American Ceramic Society, 2003, 86, 115-120.	1.9	96
23	Bone micromechanical properties are compromised during long-term alendronate therapy independently of mineralization. Journal of Bone and Mineral Research, 2012, 27, 825-834.	3.1	96
24	Towards long lasting zirconia-based composites for dental implants. Part I: Innovative synthesis, microstructural characterization and inÂvitro stability. Biomaterials, 2015, 50, 38-46.	5.7	90
25	Forty years after the promise of Â«ceramic steel?Â»: Zirconiaâ€based composites with a metalâ€like mechanical behavior. Journal of the American Ceramic Society, 2020, 103, 1482-1513.	1.9	88
26	Low-temperature degradation in zirconia with a porous surface. Acta Biomaterialia, 2011, 7, 2986-2993.	4.1	87
27	In vitro and in vivo evaluation of an aluminaâ€“zirconia composite for arthroplasty applications. Biomaterials, 2010, 31, 2043-2054.	5.7	86
28	A new testing protocol for zirconia dental implants. Dental Materials, 2015, 31, 15-25.	1.6	84
29	Accurate characterization of pure silicon-substituted hydroxyapatite powders synthesized by a new precipitation route. Acta Biomaterialia, 2013, 9, 6992-7004.	4.1	83
30	Towards long lasting zirconia-based composites for dental implants: Transformation induced plasticity and its consequence on ceramic reliability. Acta Biomaterialia, 2017, 48, 423-432.	4.1	83
31	Thermomechanical properties and fracture mechanisms of calcium hexaluminate. Journal of the European Ceramic Society, 2001, 21, 907-917.	2.8	77
32	Key role of processing to avoid low temperature ageing in alumina zirconia composites for orthopaedic application. Journal of the European Ceramic Society, 2007, 27, 1547-1552.	2.8	77
33	Mechanical properties and cytocompatibility of poly(Îµ-caprolactone)-infiltrated biphasic calcium phosphate scaffolds with bimodal pore distribution. Acta Biomaterialia, 2010, 6, 4369-4379.	4.1	77
34	Strong and tough metal/ceramic micro-laminates. Acta Materialia, 2018, 144, 202-215.	3.8	73
35	Martensitic Relief Observation by Atomic Force Microscopy in Yttriaâ€Stabilized Zirconia. Journal of the American Ceramic Society, 2003, 86, 2225-2227.	1.9	72
36	Slow crack growth behaviour of hydroxyapatite ceramics. Biomaterials, 2005, 26, 6106-6112.	5.7	71

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37	Reliability assessment in advanced nanocomposite materials for orthopaedic applications. Journal of the Mechanical Behavior of Biomedical Materials, 2011, 4, 303-314.	1.5	63
38	Dislocations and Plastic Deformation in MgO Crystals: A Review. Crystals, 2018, 8, 240.	1.0	62
39	High-translucent yttria-stabilized zirconia ceramics are wear-resistant and antagonist-friendly. Dental Materials, 2019, 35, 1776-1790.	1.6	61
40	In vitro and in vivo evaluation of a polylactic acidâ€bioactive glass composite for bone fixation devices. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2016, 104, 180-191.	1.6	60
41	Effect of initial particle packing on the sintering of nanostructured transition alumina. Journal of the European Ceramic Society, 2008, 28, 1121-1128.	2.8	59
42	Low temperature degradation and reliability of one-piece ceramic oral implants with a porous surface. Dental Materials, 2013, 29, 389-397.	1.6	58
43	Martensitic transformation in zirconiaPart II. Martensite growth. Acta Materialia, 2004, 52, 5709-5721.	3.8	57
44	Microstructural Investigation of the Aging Behavior of (3Y-TZP)-Al2O3 Composites. Journal of the American Ceramic Society, 2005, 88, 1273-1280.	1.9	57
45	Improving the Durability of a Biomedicalâ€Grade Zirconia Ceramic by the Addition of Silica. Journal of the American Ceramic Society, 2002, 85, 401-407.	1.9	54
46	Extending the Lifetime of Ceramic Orthopaedic Implants. Advanced Materials, 2000, 12, 1619-1621.	11.1	52
47	Transparent YAG obtained by spark plasma sintering of co-precipitated powder. Influence of dispersion route and sintering parameters on optical and microstructural characteristics. Journal of the European Ceramic Society, 2012, 32, 2957-2964.	2.8	49
48	Real time TEM observation of alumina ceramic nano-particles during compression. Journal of the European Ceramic Society, 2012, 32, 2067-2071.	2.8	47
49	Direct silanization of zirconia for increased biointegration. Acta Biomaterialia, 2016, 46, 323-335.	4.1	46
50	Nanostructured Zirconia-Based Ceramics and Composites in Dentistry: A State-of-the-Art Review. Nanomaterials, 2019, 9, 1393.	1.9	43
51	Atomic force microscopy of transformation toughening in ceria-stabilized zirconia. Journal of the European Ceramic Society, 2005, 25, 3089-3096.	2.8	42
52	Atomic Force Microscopy Study and Qualitative Analysis of Martensite Relief in Zirconia. Journal of the American Ceramic Society, 2005, 88, 1261-1267.	1.9	42
53	Zirconia-based composites for biomedical applications: Role of second phases on composition, microstructure and zirconia transformability. Journal of the European Ceramic Society, 2015, 35, 4039-4049.	2.8	42
54	Phase transformation induces plasticity with negligible damage in ceria-stabilized zirconia-based ceramics. Acta Materialia, 2020, 183, 261-273.	3.8	40

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55	Accelerated Aging in 3-mol%-Yttria-Stabilized Tetragonal Zirconia Ceramics Sintered in Reducing Conditions. Journal of the American Ceramic Society, 2004, 87, 2282-2285.	1.9	39
56	Alumina-based nanocomposites obtained by doping with inorganic salt solutions: Application to immiscible and reactive systems. Journal of the European Ceramic Society, 2009, 29, 59-66.	2.8	39
57	A new concept of gentamicin loaded HAP/TCP bone substitute for prophylactic action: in vitro release validation. Journal of Materials Science: Materials in Medicine, 2008, 19, 947-951.	1.7	38
58	Surface Coating of Oxide Powders: A New Synthesis Method to Process Biomedical Grade Nano-Composites. Materials, 2014, 7, 5012-5037.	1.3	37
59	Effect of grain orientation and magnesium doping on Î²-tricalcium phosphate resorption behavior. Acta Biomaterialia, 2019, 89, 391-402.	4.1	37
60	A Comparative Study between Melt-Derived and Sol-Gel Synthesized 45S5 Bioactive Glasses. Key Engineering Materials, 0, 541, 15-30.	0.4	36
61	Slow crack growth and hydrothermal aging stability of an alumina-toughened zirconia composite made from La2O3-doped 2Y-TZP. Journal of the European Ceramic Society, 2017, 37, 1865-1871.	2.8	36
62	Selective etching of injection molded zirconia-toughened alumina: Towards osseointegrated and antibacterial ceramic implants. Acta Biomaterialia, 2016, 46, 308-322.	4.1	35
63	Mechanical behavior law of ceramic nanoparticles from transmission electron microscopy in situ nano-compression tests. Materials Letters, 2014, 119, 107-110.	1.3	34
64	Effect of alloying elements on the microstructure and corrosion behavior of TiZr-based bulk metallic glasses. Corrosion Science, 2020, 177, 108854.	3.0	34
65	Impact of sandblasting on the mechanical properties and aging resistance of alumina and zirconia based ceramics. Journal of the European Ceramic Society, 2018, 38, 915-925.	2.8	31
66	On the Potential of Bulk Metallic Glasses for Dental Implantology: Case Study on Ti40Zr10Cu36Pd14. Materials, 2018, 11, 249.	1.3	30
67	Bioactivity modulation of BioglassÂ® powder by thermal treatment. Journal of the European Ceramic Society, 2012, 32, 2765-2775.	2.8	29
68	A testing protocol combining shocks, hydrothermal ageing and friction, applied to Zirconia Toughened Alumina (ZTA) hip implants. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 65, 600-608.	1.5	28
69	Optimized Slurries for Spray Drying: Different Approaches to Obtain Homogeneous and Deformable Alumina-Zirconia Granules. Materials, 2013, 6, 5382-5397.	1.3	27
70	Reduced bacterial adhesion on ceramics used for arthroplasty applications. Journal of the European Ceramic Society, 2018, 38, 963-970.	2.8	27
71	Influence of artificial aging on mechanical properties of commercially and non-commercially available zirconia dental implants. Journal of the Mechanical Behavior of Biomedical Materials, 2020, 101, 103423.	1.5	27
72	3D-Characterization of the veneerâ€“zirconia interface using FIB nano-tomography. Dental Materials, 2013, 29, 157-165.	1.6	26

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73	Strain rate influence on human cortical bone toughness: A comparative study of four paired anatomical sites. Journal of the Mechanical Behavior of Biomedical Materials, 2017, 71, 223-230.	1.5	26
74	Assessment of Novel Longâ€Lasting Ceriaâ€Stabilized Zirconiaâ€Based Ceramics with Different Surface Topographies as Implant Materials. Advanced Functional Materials, 2017, 27, 1702512.	7.8	26
75	Improving the fracture toughness of stabilized zirconia-based solid oxide cells fuel electrode supports: Effects of type and concentration of stabilizer(s). Journal of the European Ceramic Society, 2020, 40, 5670-5682.	2.8	26
76	Crack Propagation Behavior of Y-TZP Ceramics. Journal of the American Ceramic Society, 1995, 78, 1889-1894.	1.9	25
77	Effect of Heating Rate on Phase and Microstructural Evolution During Pressureless Sintering of a Nanostructured Transition Alumina. International Journal of Applied Ceramic Technology, 2009, 6, 420-430.	1.1	25
78	Novel calcium phosphate/PCL graded samples: Design and development in view of biomedical applications. Materials Science and Engineering C, 2019, 97, 336-346.	3.8	24
79	Ageing, Shocks and Wear Mechanisms in ZTA and the Long-Term Performance of Hip Joint Materials. Materials, 2017, 10, 569.	1.3	23
80	Resorption of calcium phosphate materials: Considerations on the in vitro evaluation. Journal of the European Ceramic Society, 2018, 38, 899-914.	2.8	22
81	A new method to measure monoclinic depth profile in zirconia-based ceramics from X-ray diffraction data. International Journal of Materials Research, 2010, 101, 88-94.	0.1	20
82	Effect of loading configuration on strength values in a highly transformable zirconia-based composite. Dental Materials, 2016, 32, e211-e219.	1.6	19
83	Effect of cooling rate on the location and chemistry of glassy phases in silica-doped 3Y-TZP ceramics. Journal of the European Ceramic Society, 2005, 25, 875-882.	2.8	18
84	Combining bioresorbable polyesters and bioactive glasses: Orthopedic applications of composite implants and bone tissue engineering scaffolds. Applied Materials Today, 2021, 22, 100923.	2.3	18
85	Initial Bacterial Adhesion on Different Yttria-Stabilized Tetragonal Zirconia Implant Surfaces in Vitro. Materials, 2013, 6, 5659-5674.	1.3	16
86	Mechanical behaviour of extremely tough TZP bioceramics. Journal of the Mechanical Behavior of Biomedical Materials, 2019, 90, 395-403.	1.5	16
87	Effect of ball milling on the processing of bone substitutes with calcium phosphate powders. Journal of Biomedical Materials Research Part B, 2002, 63, 619-626.	3.0	15
88	Crystallization processes at the surface of polylactic acidâ€"bioactive glass composites during immersion in simulated body fluid. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2011, 99B, 412-419.	1.6	15
89	The in vitro evolution of resorbable brushite cements: A physico-chemical, micro-structural and mechanical study. Acta Biomaterialia, 2017, 53, 515-525.	4.1	15
90	Quantitative Analysis of Crack Shielding Degradation During Cyclic Fatigue of Alumina. Journal of the American Ceramic Society, 2005, 88, 172-178.	1.9	14

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91	Effects of in vitro shocks and hydrothermal degradation on wear of ceramic hip joints: Towards better experimental simulation of in vivo ageing. Tribology International, 2016, 100, 410-419.	3.0	14
92	Histologic and histomorphometric evaluation of new zirconia-based ceramic dental implants: A preclinical study in dogs. Dental Materials, 2021, 37, 1377-1389.	1.6	14
93	Development of transformation bands in ceria-stabilized-zirconia based composites during bending at room temperature. Journal of the European Ceramic Society, 2021, 41, 691-705.	2.8	13
94	Tetragonal phase stability maps of ceria-yttria co-doped zirconia: From powders to sintered ceramics. Ceramics International, 2020, 46, 9396-9405.	2.3	12
95	Combined wear and ageing of ceramic-on-ceramic bearings in total hip replacement under edge loading conditions. Journal of the Mechanical Behavior of Biomedical Materials, 2019, 98, 40-47.	1.5	11
96	Double Torsion testing of thin porous zirconia supports for energy applications: Toughness and slow crack growth assessment. Journal of the European Ceramic Society, 2020, 40, 3191-3199.	2.8	10
97	Revisiting the strength of micronâ€scale ceramic platelets. Journal of the American Ceramic Society, 2020, 103, 6991-7000.	1.9	10
98	Microstructural analyses of artificial ageing in 5 commercially and non-commercially available Zirconia dental implants. Journal of the European Ceramic Society, 2020, 40, 3642-3655.	2.8	10
99	Reliability of an injection-moulded two-piece zirconia implant with PEKK abutment after long-term thermo-mechanical loading. Journal of the Mechanical Behavior of Biomedical Materials, 2020, 110, 103967.	1.5	9
100	Microbial adhesion on novel yttria-stabilized tetragonal zirconia (Y-TZP) implant surfaces with nitrogen-doped hydrogenated amorphous carbon (a-C:H:N) coatings. Clinical Oral Investigations, 2016, 20, 1719-1732.	1.4	8
101	Intrinsic properties of osteomalacia bone evaluated by nanoindentation and FTIRM analysis. Journal of Biomechanics, 2021, 117, 110247.	0.9	8
102	Towards quantitative analysis of enamel erosion by focused ion beam tomography. Dental Materials, 2018, 34, e289-e300.	1.6	7
103	Is a Zirconia Dental Implant Safe When It Is Available on the Market?. Ceramics, 2019, 2, 568-577.	1.0	7
104	Coaxial micro-extrusion of a calcium phosphate ink with aqueous solvents improves printing stability, structure fidelity and mechanical properties. Acta Biomaterialia, 2021, 125, 322-332.	4.1	7
105	Atomistic simulation and interatomic potential comparison in Î±-Al₂O₃: lattice, surface and extended-defects properties. Modelling and Simulation in Materials Science and Engineering, 2022, 30, 035008.	0.8	7
106	Impact of spherulite-type crystalline defects on the mechanical and electrochemical properties of Ti40Cu36Zr10Pd14 metallic glasses. Materialia, 2022, 21, 101353.	1.3	7
107	From dislocation nucleation to dislocation multiplication in ceramic nanoparticle. Materials Research Letters, 2021, 9, 278-283.	4.1	6
108	Atomic force microscopy study of the tetragonal to monoclinic transformation behavior of silica doped yttria-stabilized zirconia. Journal of Materials Science, 2005, 40, 3821-3823.	1.7	5

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109	Design and development of dental ceramics. , 2017, , 355-389.		5
110	Slow crack growth resistance of electrically conductive zirconia-based composites with non-oxide reinforcements. Journal of the European Ceramic Society, 2019, 39, 641-646.	2.8	5
111	Model Composites Based on Poly(lactic acid) and Bioactive Glass Fillers for Bone Regeneration. Polymers, 2021, 13, 2991.	2.0	5
112	Is Surface Metastability of Todayâ€™s Ceramic Bearings a Clinical Issue?. Journal of Composites Science, 2021, 5, 273.	1.4	5
113	Mechanical characterization of meso-porous alumina by micro-â€,and nano-indentation. Materials Today Communications, 2020, 25, 101315.	0.9	4
114	Strength and hydrothermal stability of NiOâ€“stabilized zirconia solid oxide cells fuel electrode supports. Journal of the European Ceramic Society, 2021, 41, 4206-4216.	2.8	4
115	Microstructure of a <scp><scp>Ce</scp></scp>_{0.1}<scp><scp>Zr</scp></scp>_{0.9}<scp><scp>O</scp></scp>₂â€ Ceramic Matrix Composite for Use in Dentistry. Journal of the American Ceramic Society, 2014, 97, 1602-1609.	1.9	3
116	How do the grains slide in fine-grained zirconia polycrystals at high temperature?. Applied Physics Letters, 2007, 91, 121904.	1.5	2
117	Can (Mg,Y)â€<scp>PSZ</scp>â€”Spinel composites be a valuable option for dental application?. International Journal of Applied Ceramic Technology, 2018, 15, 873-883.	1.1	2
118	Low Temperature Ageing of 3Y - TZP: Influence of the Microstructure. Key Engineering Materials, 1997, 132-136, 635-638.	0.4	1
119	New Trends in Ceramics for Orthopedics. , 2021, , 493-500.		1
120	Yttria-Stabilized Zirconia as a Biomaterial: From Orthopedic Towards Dental Applications. , 2021, , 540-552.		1
121	Consideration of Dental Tissues and Composite Mechanical Properties ï»¿in Secondary Caries Development: A Critical Review. Journal of Adhesive Dentistry, 2021, 23, 297-308.	0.3	1
122	Improving the Porosity Features Control of Ceramic Cellular Components through a Modified Gelcasting Process. Advances in Science and Technology, 2010, 62, 147-156.	0.2	0
123	Selected papers presented at the â€˜International Workshop on Cellular Materialsâ€™ (I.Wo.C.Mat.) in Turin (Italy) in 2011: Editorial comments. Journal of the European Ceramic Society, 2013, 33, 1485-1486.	2.8	0
124	Composites organiques-inorganiques pour la substitution et la rÃ©paration osseuseÂ: concepts, premiers rÃ©sultats et potentialitÃ©s. MATEC Web of Conferences, 2013, 7, 04013.	0.1	0
125	Design and Processing of Novel Ceramic Composite Structures for Use in Medical Surgery. Key Engineering Materials, 0, 750, 195-204.	0.4	0
126	Preface to the Special Issue CIEC16. Journal of the European Ceramic Society, 2020, 40, 3687-3688.	2.8	0

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127	Biomedical-Grade Composite Ceramics Through a Nanopowder Engineering Approach: A Discussion of Two Successful Case Studies. Advanced Science Letters, 2017, 23, 5970-5973.	0.2	0