

Jrôme Chevalier

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122
papers

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44
h-index

87
g-index

131
ext. papers

8,867
ext. citations

6
avg, IF

6.26
L-index

#	Paper	IF	Citations
122	The Tetragonal-Monoclinic Transformation in Zirconia: Lessons Learned and Future Trends. <i>Journal of the American Ceramic Society</i> , 2009 , 92, 1901-1920	3.8	899
121	What future for zirconia as a biomaterial?. <i>Biomaterials</i> , 2006 , 27, 535-43	15.6	811
120	Ceramics for medical applications: A picture for the next 20 years. <i>Journal of the European Ceramic Society</i> , 2009 , 29, 1245-1255	6	503
119	Low-Temperature Aging of Y-TZP Ceramics. <i>Journal of the American Ceramic Society</i> , 2004 , 82, 2150-2154	3.8	458
118	Low-Temperature Degradation of Zirconia and Implications for Biomedical Implants. <i>Annual Review of Materials Research</i> , 2007 , 37, 1-32	12.8	449
117	Critical effect of cubic phase on aging in 3mol% yttria-stabilized zirconia ceramics for hip replacement prosthesis. <i>Biomaterials</i> , 2004 , 25, 5539-45	15.6	242
116	Effect of micro- and macroporosity of bone substitutes on their mechanical properties and cellular response. <i>Journal of Materials Science: Materials in Medicine</i> , 2003 , 14, 1089-97	4.5	241
115	Sintering, crystallisation and biodegradation behaviour of Bioglass-derived glass-ceramics. <i>Faraday Discussions</i> , 2007 , 136, 27-44; discussion 107-23	3.6	196
114	Influence of surface finish and residual stresses on the ageing sensitivity of biomedical grade zirconia. <i>Biomaterials</i> , 2006 , 27, 2186-92	15.6	194
113	Fracture toughness, strength and slow crack growth in a ceria stabilized zirconia-alumina nanocomposite for medical applications. <i>Biomaterials</i> , 2008 , 29, 3636-3641	15.6	158
112	Toughening of bio-ceramics scaffolds by polymer coating. <i>Journal of the European Ceramic Society</i> , 2007 , 27, 2679-2685	6	136
111	Low-temperature ageing of zirconia-toughened alumina ceramics and its implication in biomedical implants. <i>Journal of the European Ceramic Society</i> , 2003 , 23, 2975-2982	6	136
110	A critical comparison of methods for the determination of the aging sensitivity in biomedical grade yttria-stabilized zirconia. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2005 , 72, 239-45	3.5	133
109	Aging resistance, mechanical properties and translucency of different yttria-stabilized zirconia ceramics for monolithic dental crown applications. <i>Dental Materials</i> , 2018 , 34, 879-890	5.7	127
108	Subcritical Crack Propagation in 3Y-TZP Ceramics: Static and Cyclic Fatigue. <i>Journal of the American Ceramic Society</i> , 2004 , 82, 3129-3138	3.8	121
107	On the kinetics and impact of tetragonal to monoclinic transformation in an alumina/zirconia composite for arthroplasty applications. <i>Biomaterials</i> , 2009 , 30, 5279-82	15.6	107
106	Modeling the aging kinetics of zirconia ceramics. <i>Journal of the European Ceramic Society</i> , 2004 , 24, 3483-3489	3.89	95

105	Microstructure development in calcium hexaluminate. <i>Journal of the European Ceramic Society</i> , 2001 , 21, 381-387	6	95
104	Slow-Crack-Growth Behavior of Zirconia-Toughened Alumina Ceramics Processed by Different Methods. <i>Journal of the American Ceramic Society</i> , 2003 , 86, 115-120	3.8	86
103	Bone micromechanical properties are compromised during long-term alendronate therapy independently of mineralization. <i>Journal of Bone and Mineral Research</i> , 2012 , 27, 825-34	6.3	84
102	In vitro and in vivo evaluation of an alumina-zirconia composite for arthroplasty applications. <i>Biomaterials</i> , 2010 , 31, 2043-54	15.6	77
101	Accurate characterization of pure silicon-substituted hydroxyapatite powders synthesized by a new precipitation route. <i>Acta Biomaterialia</i> , 2013 , 9, 6992-7004	10.8	76
100	Elaboration of Alumina-Zirconia Composites: Role of the Zirconia Content on the Microstructure and Mechanical Properties. <i>Materials</i> , 2013 , 6, 2090-2102	3.5	76
99	Using graphene networks to build bioinspired self-monitoring ceramics. <i>Nature Communications</i> , 2017 , 8, 14425	17.4	71
98	Trade-off between fracture resistance and translucency of zirconia and lithium-disilicate glass ceramics for monolithic restorations. <i>Acta Biomaterialia</i> , 2019 , 91, 24-34	10.8	69
97	Towards long lasting zirconia-based composites for dental implants. Part I: innovative synthesis, microstructural characterization and in vitro stability. <i>Biomaterials</i> , 2015 , 50, 38-46	15.6	69
96	Key role of processing to avoid low temperature ageing in alumina zirconia composites for orthopaedic application. <i>Journal of the European Ceramic Society</i> , 2007 , 27, 1547-1552	6	69
95	Low-temperature degradation in zirconia with a porous surface. <i>Acta Biomaterialia</i> , 2011 , 7, 2986-93	10.8	67
94	Mechanical properties and cytocompatibility of poly(ϵ -caprolactone)-infiltrated biphasic calcium phosphate scaffolds with bimodal pore distribution. <i>Acta Biomaterialia</i> , 2010 , 6, 4369-79	10.8	66
93	Martensitic Relief Observation by Atomic Force Microscopy in Yttria-Stabilized Zirconia. <i>Journal of the American Ceramic Society</i> , 2003 , 86, 2225-2227	3.8	66
92	Thermomechanical properties and fracture mechanisms of calcium hexaluminate. <i>Journal of the European Ceramic Society</i> , 2001 , 21, 907-917	6	66
91	A new testing protocol for zirconia dental implants. <i>Dental Materials</i> , 2015 , 31, 15-25	5.7	65
90	Towards long lasting zirconia-based composites for dental implants: Transformation induced plasticity and its consequence on ceramic reliability. <i>Acta Biomaterialia</i> , 2017 , 48, 423-432	10.8	60
89	Slow crack growth behaviour of hydroxyapatite ceramics. <i>Biomaterials</i> , 2005 , 26, 6106-12	15.6	59
88	Low temperature degradation and reliability of one-piece ceramic oral implants with a porous surface. <i>Dental Materials</i> , 2013 , 29, 389-97	5.7	51

87	Martensitic transformation in zirconia: Part II. Martensite growth. <i>Acta Materialia</i> , 2004 , 52, 5709-5721	8.4	51
86	Reliability assessment in advanced nanocomposite materials for orthopaedic applications. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2011 , 4, 303-14	4.1	50
85	Effect of initial particle packing on the sintering of nanostructured transition alumina. <i>Journal of the European Ceramic Society</i> , 2008 , 28, 1121-1128	6	50
84	Strong and tough metal/ceramic micro-laminates. <i>Acta Materialia</i> , 2018 , 144, 202-215	8.4	47
83	Improving the Durability of a Biomedical-Grade Zirconia Ceramic by the Addition of Silica. <i>Journal of the American Ceramic Society</i> , 2004 , 85, 401-407	3.8	47
82	Microstructural Investigation of the Aging Behavior of (3Y-TZP)/Al ₂ O ₃ Composites. <i>Journal of the American Ceramic Society</i> , 2005 , 88, 1273-1280	3.8	47
81	Extending the Lifetime of Ceramic Orthopaedic Implants. <i>Advanced Materials</i> , 2000 , 12, 1619-1621	24	47
80	Transparent YAG obtained by spark plasma sintering of co-precipitated powder. Influence of dispersion route and sintering parameters on optical and microstructural characteristics. <i>Journal of the European Ceramic Society</i> , 2012 , 32, 2957-2964	6	46
79	In vitro and in vivo evaluation of a polylactic acid-bioactive glass composite for bone fixation devices. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2016 , 104, 180-91	3.5	44
78	Atomic Force Microscopy Study and Qualitative Analysis of Martensite Relief in Zirconia. <i>Journal of the American Ceramic Society</i> , 2005 , 88, 1261-1267	3.8	40
77	Forty years after the promise of «ceramic steel»: Zirconia-based composites with a metal-like mechanical behavior. <i>Journal of the American Ceramic Society</i> , 2020 , 103, 1482-1513	3.8	39
76	Real time TEM observation of alumina ceramic nano-particles during compression. <i>Journal of the European Ceramic Society</i> , 2012 , 32, 2067-2071	6	38
75	Atomic force microscopy of transformation toughening in ceria-stabilized zirconia. <i>Journal of the European Ceramic Society</i> , 2005 , 25, 3089-3096	6	38
74	Alumina-based nanocomposites obtained by doping with inorganic salt solutions: Application to immiscible and reactive systems. <i>Journal of the European Ceramic Society</i> , 2009 , 29, 59-66	6	37
73	Dislocations and Plastic Deformation in MgO Crystals: A Review. <i>Crystals</i> , 2018 , 8, 240	2.3	36
72	Accelerated Aging in 3-mol%-Yttria-Stabilized Tetragonal Zirconia Ceramics Sintered in Reducing Conditions. <i>Journal of the American Ceramic Society</i> , 2004 , 87, 2282-2285	3.8	35
71	A new concept of gentamicin loaded HAP/TCP bone substitute for prophylactic action: in vitro release validation. <i>Journal of Materials Science: Materials in Medicine</i> , 2008 , 19, 947-51	4.5	34
70	Direct silanization of zirconia for increased biointegration. <i>Acta Biomaterialia</i> , 2016 , 46, 323-335	10.8	33

69	Surface Coating of Oxide Powders: A New Synthesis Method to Process Biomedical Grade Nano-Composites. <i>Materials</i> , 2014 , 7, 5012-5037	3.5	31
68	A Comparative Study between Melt-Derived and Sol-Gel Synthesized 45S5 Bioactive Glasses. <i>Key Engineering Materials</i> , 2013 , 541, 15-30	0.4	27
67	Selective etching of injection molded zirconia-toughened alumina: Towards osseointegrated and antibacterial ceramic implants. <i>Acta Biomaterialia</i> , 2016 , 46, 308-322	10.8	26
66	Zirconia-based composites for biomedical applications: Role of second phases on composition, microstructure and zirconia transformability. <i>Journal of the European Ceramic Society</i> , 2015 , 35, 4039-4049	6	24
65	Crack Propagation Behavior of Y-TZP Ceramics. <i>Journal of the American Ceramic Society</i> , 1995 , 78, 1889-1894	3.94	24
64	High-translucent yttria-stabilized zirconia ceramics are wear-resistant and antagonist-friendly. <i>Dental Materials</i> , 2019 , 35, 1776-1790	5.7	24
63	Mechanical behavior law of ceramic nanoparticles from transmission electron microscopy in situ nano-compression tests. <i>Materials Letters</i> , 2014 , 119, 107-110	3.3	23
62	Bioactivity modulation of Bioglass [®] powder by thermal treatment. <i>Journal of the European Ceramic Society</i> , 2012 , 32, 2765-2775	6	23
61	Effect of grain orientation and magnesium doping on β -tricalcium phosphate resorption behavior. <i>Acta Biomaterialia</i> , 2019 , 89, 391-402	10.8	22
60	3D-characterization of the veneer-zirconia interface using FIB nano-tomography. <i>Dental Materials</i> , 2013 , 29, 157-65	5.7	22
59	A testing protocol combining shocks, hydrothermal ageing and friction, applied to Zirconia Toughened Alumina (ZTA) hip implants. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2017 , 65, 600-608	4.1	22
58	Slow crack growth and hydrothermal aging stability of an alumina-toughened zirconia composite made from La ₂ O ₃ -doped 2Y-TZP. <i>Journal of the European Ceramic Society</i> , 2017 , 37, 1865-1871	6	21
57	Optimized Slurries for Spray Drying: Different Approaches to Obtain Homogeneous and Deformable Alumina-Zirconia Granules. <i>Materials</i> , 2013 , 6, 5382-5397	3.5	21
56	Effect of Heating Rate on Phase and Microstructural Evolution During Pressureless Sintering of a Nanostructured Transition Alumina. <i>International Journal of Applied Ceramic Technology</i> , 2009 , 6, 420-430	3	21
55	Ageing, Shocks and Wear Mechanisms in ZTA and the Long-Term Performance of Hip Joint Materials. <i>Materials</i> , 2017 , 10,	3.5	20
54	Impact of sandblasting on the mechanical properties and aging resistance of alumina and zirconia based ceramics. <i>Journal of the European Ceramic Society</i> , 2018 , 38, 915-925	6	19
53	Reduced bacterial adhesion on ceramics used for arthroplasty applications. <i>Journal of the European Ceramic Society</i> , 2018 , 38, 963-970	6	19
52	Nanostructured Zirconia-Based Ceramics and Composites in Dentistry: A State-of-the-Art Review. <i>Nanomaterials</i> , 2019 , 9,	5.4	18

51	A new method to measure monoclinic depth profile in zirconia-based ceramics from X-ray diffraction data. <i>International Journal of Materials Research</i> , 2010 , 101, 88-94	0.5	18
50	Strain rate influence on human cortical bone toughness: A comparative study of four paired anatomical sites. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2017 , 71, 223-230	4.1	16
49	On the Potential of Bulk Metallic Glasses for Dental Implantology: Case Study on TiZrCuPd. <i>Materials</i> , 2018 , 11,	3.5	16
48	Effect of cooling rate on the location and chemistry of glassy phases in silica-doped 3Y-TZP ceramics. <i>Journal of the European Ceramic Society</i> , 2005 , 25, 875-882	6	16
47	Phase transformation induces plasticity with negligible damage in ceria-stabilized zirconia-based ceramics. <i>Acta Materialia</i> , 2020 , 183, 261-273	8.4	16
46	Effect of loading configuration on strength values in a highly transformable zirconia-based composite. <i>Dental Materials</i> , 2016 , 32, e211-9	5.7	15
45	Initial Bacterial Adhesion on Different Yttria-Stabilized Tetragonal Zirconia Implant Surfaces. <i>Materials</i> , 2013 , 6, 5659-5674	3.5	14
44	Effect of alloying elements on the microstructure and corrosion behavior of TiZr-based bulk metallic glasses. <i>Corrosion Science</i> , 2020 , 177, 108854	6.8	13
43	Resorption of calcium phosphate materials: Considerations on the in vitro evaluation. <i>Journal of the European Ceramic Society</i> , 2018 , 38, 899-914	6	13
42	Effects of in vitro shocks and hydrothermal degradation on wear of ceramic hip joints: Towards better experimental simulation of in vivo ageing. <i>Tribology International</i> , 2016 , 100, 410-419	4.9	13
41	Crystallization processes at the surface of polylactic acid-bioactive glass composites during immersion in simulated body fluid. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2011 , 99, 412-9	3.5	13
40	Novel calcium phosphate/PCL graded samples: Design and development in view of biomedical applications. <i>Materials Science and Engineering C</i> , 2019 , 97, 336-346	8.3	13
39	Influence of artificial aging on mechanical properties of commercially and non-commercially available zirconia dental implants. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2020 , 101, 103423	4.1	13
38	Effect of ball milling on the processing of bone substitutes with calcium phosphate powders. <i>Journal of Biomedical Materials Research Part B</i> , 2002 , 63, 619-26		12
37	The in vitro evolution of resorbable brushite cements: A physico-chemical, micro-structural and mechanical study. <i>Acta Biomaterialia</i> , 2017 , 53, 515-525	10.8	11
36	Quantitative Analysis of Crack Shielding Degradation During Cyclic Fatigue of Alumina. <i>Journal of the American Ceramic Society</i> , 2004 , 88, 172-178	3.8	11
35	Improving the fracture toughness of stabilized zirconia-based solid oxide cells fuel electrode supports: Effects of type and concentration of stabilizer(s). <i>Journal of the European Ceramic Society</i> , 2020 , 40, 5670-5682	6	10
34	Assessment of Novel Long-Lasting Ceria-Stabilized Zirconia-Based Ceramics with Different Surface Topographies as Implant Materials. <i>Advanced Functional Materials</i> , 2017 , 27, 1702512	15.6	10

33	Tetragonal phase stability maps of ceria-yttria co-doped zirconia: From powders to sintered ceramics. <i>Ceramics International</i> , 2020 , 46, 9396-9405	5.1	9
32	Mechanical behaviour of extremely tough TZP bioceramics. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2019 , 90, 395-403	4.1	9
31	Combined wear and ageing of ceramic-on-ceramic bearings in total hip replacement under edge loading conditions. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2019 , 98, 40-47	4.1	8
30	Microbial adhesion on novel yttria-stabilized tetragonal zirconia (Y-TZP) implant surfaces with nitrogen-doped hydrogenated amorphous carbon (a-C:H:N) coatings. <i>Clinical Oral Investigations</i> , 2016 , 20, 1719-32	4.2	7
29	Combining bioresorbable polyesters and bioactive glasses: Orthopedic applications of composite implants and bone tissue engineering scaffolds. <i>Applied Materials Today</i> , 2021 , 22, 100923	6.6	7
28	Double Torsion testing of thin porous zirconia supports for energy applications: Toughness and slow crack growth assessment. <i>Journal of the European Ceramic Society</i> , 2020 , 40, 3191-3199	6	6
27	Microstructural analyses of artificial ageing in 5 commercially and non-commercially available Zirconia dental implants. <i>Journal of the European Ceramic Society</i> , 2020 , 40, 3642-3655	6	6
26	Development of transformation bands in ceria-stabilized-zirconia based composites during bending at room temperature. <i>Journal of the European Ceramic Society</i> , 2021 , 41, 691-705	6	6
25	Revisiting the strength of micron-scale ceramic platelets. <i>Journal of the American Ceramic Society</i> , 2020 , 103, 6991-7000	3.8	5
24	Is a Zirconia Dental Implant Safe When It Is Available on the Market?. <i>Ceramics</i> , 2019 , 2, 568-577	1.7	4
23	Design and development of dental ceramics 2017 , 355-389		4
22	Atomic force microscopy study of the tetragonal to monoclinic transformation behavior of silica doped yttria-stabilized zirconia. <i>Journal of Materials Science</i> , 2005 , 40, 3821-3823	4.3	4
21	Towards quantitative analysis of enamel erosion by focused ion beam tomography. <i>Dental Materials</i> , 2018 , 34, e289-e300	5.7	4
20	Mechanical characterization of meso-porous alumina by micro- and nano-indentation. <i>Materials Today Communications</i> , 2020 , 25, 101315	2.5	3
19	Strength and hydrothermal stability of NiO-stabilized zirconia solid oxide cells fuel electrode supports. <i>Journal of the European Ceramic Society</i> , 2021 , 41, 4206-4216	6	3
18	Microstructure of a Ce _{0.1} Zr _{0.9} O ₂ -MgAl ₂ O ₄ Ceramic Matrix Composite for Use in Dentistry. <i>Journal of the American Ceramic Society</i> , 2014 , 97, 1602-1609	3.8	2
17	How do the grains slide in fine-grained zirconia polycrystals at high temperature?. <i>Applied Physics Letters</i> , 2007 , 91, 121904	3.4	2
16	Is Surface Metastability of Today's Ceramic Bearings a Clinical Issue?. <i>Journal of Composites Science</i> , 2021 , 5, 273	3	2

15	Reliability of an injection-moulded two-piece zirconia implant with PEKK abutment after long-term thermo-mechanical loading. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2020 , 110, 1039-1067	4.1	2
14	Coaxial micro-extrusion of a calcium phosphate ink with aqueous solvents improves printing stability, structure fidelity and mechanical properties. <i>Acta Biomaterialia</i> , 2021 , 125, 322-332	10.8	2
13	Slow crack growth resistance of electrically conductive zirconia-based composites with non-oxide reinforcements. <i>Journal of the European Ceramic Society</i> , 2019 , 39, 641-646	6	2
12	Histologic and histomorphometric evaluation of new zirconia-based ceramic dental implants: A preclinical study in dogs. <i>Dental Materials</i> , 2021 , 37, 1377-1389	5.7	2
11	Low Temperature Ageing of 3Y - TZP: Influence of the Microstructure. <i>Key Engineering Materials</i> , 1997 , 132-136, 635-638	0.4	1
10	Impact of spherulite-type crystalline defects on the mechanical and electrochemical properties of TiCuZrPd metallic glasses. <i>Materialia</i> , 2022 , 21, 101353	3.2	1
9	From dislocation nucleation to dislocation multiplication in ceramic nanoparticle. <i>Materials Research Letters</i> , 2021 , 9, 278-283	7.4	1
8	Intrinsic properties of osteomalacia bone evaluated by nanoindentation and FTIRM analysis. <i>Journal of Biomechanics</i> , 2021 , 117, 110247	2.9	1
7	New Trends in Ceramics for Orthopedics 2021 , 493-500		1
6	Can (Mg,Y)-PSZ/Spinel composites be a valuable option for dental application?. <i>International Journal of Applied Ceramic Technology</i> , 2018 , 15, 873-883	2	0
5	Design and Processing of Novel Ceramic Composite Structures for Use in Medical Surgery. <i>Key Engineering Materials</i> , 2017 , 750, 195-204	0.4	
4	Composites organiques-inorganiques pour la substitution et la réparation osseuse: concepts, premiers résultats et potentialité. <i>MATEC Web of Conferences</i> , 2013 , 7, 04013	0.3	
3	Improving the Porosity Features Control of Ceramic Cellular Components through a Modified Gelcasting Process. <i>Advances in Science and Technology</i> , 2010 , 62, 147-156	0.1	
2	Biomedical-Grade Composite Ceramics Through a Nanopowder Engineering Approach: A Discussion of Two Successful Case Studies. <i>Advanced Science Letters</i> , 2017 , 23, 5970-5973	0.1	
1	Yttria-Stabilized Zirconia as a Biomaterial: From Orthopedic Towards Dental Applications 2021 , 540-552		