

# Laurent Gremillard

## List of Publications by Citations

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113  
papers

4,781  
citations

28  
h-index

68  
g-index

117  
ext. papers

5,498  
ext. citations

5.4  
avg, IF

5.71  
L-index

#	Paper	IF	Citations
113	The Tetragonal-Monoclinic Transformation in Zirconia: Lessons Learned and Future Trends. <i>Journal of the American Ceramic Society</i> , <b>2009</b> , 92, 1901-1920	3.8	899
112	Ceramics for medical applications: A picture for the next 20 years. <i>Journal of the European Ceramic Society</i> , <b>2009</b> , 29, 1245-1255	6	503
111	Low-Temperature Degradation of Zirconia and Implications for Biomedical Implants. <i>Annual Review of Materials Research</i> , <b>2007</b> , 37, 1-32	12.8	449
110	Structural transformations of bioactive glass 45S5 with thermal treatments. <i>Acta Materialia</i> , <b>2007</b> , 55, 3305-3313	8.4	247
109	Sintering, crystallisation and biodegradation behaviour of Bioglass-derived glass-ceramics. <i>Faraday Discussions</i> , <b>2007</b> , 136, 27-44; discussion 107-23	3.6	196
108	Influence of surface finish and residual stresses on the ageing sensitivity of biomedical grade zirconia. <i>Biomaterials</i> , <b>2006</b> , 27, 2186-92	15.6	194
107	Toughening of bio-ceramics scaffolds by polymer coating. <i>Journal of the European Ceramic Society</i> , <b>2007</b> , 27, 2679-2685	6	136
106	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> , <b>2005</b> , 72, 239-45	3.5	133
105	Ageing resistance, mechanical properties and translucency of different yttria-stabilized zirconia ceramics for monolithic dental crown applications. <i>Dental Materials</i> , <b>2018</b> , 34, 879-890	5.7	127
104	Sintering behaviour of 45S5 bioactive glass. <i>Acta Biomaterialia</i> , <b>2008</b> , 4, 1894-903	10.8	108
103	Preparation of porous hydroxyapatite scaffolds. <i>Materials Science and Engineering C</i> , <b>2007</b> , 27, 546-550	8.3	106
102	Modeling the aging kinetics of zirconia ceramics. <i>Journal of the European Ceramic Society</i> , <b>2004</b> , 24, 3483-3489	9.5	95
101	Accurate characterization of pure silicon-substituted hydroxyapatite powders synthesized by a new precipitation route. <i>Acta Biomaterialia</i> , <b>2013</b> , 9, 6992-7004	10.8	76
100	Low-temperature degradation in zirconia with a porous surface. <i>Acta Biomaterialia</i> , <b>2011</b> , 7, 2986-93	10.8	67
99	Mechanical properties and cytocompatibility of poly( $\epsilon$ -caprolactone)-infiltrated biphasic calcium phosphate scaffolds with bimodal pore distribution. <i>Acta Biomaterialia</i> , <b>2010</b> , 6, 4369-79	10.8	66
98	Near-infrared radiative properties of porous zirconia ceramics. <i>Infrared Physics and Technology</i> , <b>2007</b> , 51, 44-53	2.7	66
97	Thermomechanical properties and fracture mechanisms of calcium hexaluminate. <i>Journal of the European Ceramic Society</i> , <b>2001</b> , 21, 907-917	6	66

96	A new testing protocol for zirconia dental implants. <i>Dental Materials</i> , <b>2015</b> , 31, 15-25	5.7	65
95	Microstructural study of silica-doped zirconia ceramics. <i>Acta Materialia</i> , <b>2000</b> , 48, 4647-4652	8.4	58
94	Ice shaping properties, similar to that of antifreeze proteins, of a zirconium acetate complex. <i>PLoS ONE</i> , <b>2011</b> , 6, e26474	3.7	52
93	Reliability assessment in advanced nanocomposite materials for orthopaedic applications. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , <b>2011</b> , 4, 303-14	4.1	50
92	Improving the Durability of a Biomedical-Grade Zirconia Ceramic by the Addition of Silica. <i>Journal of the American Ceramic Society</i> , <b>2004</b> , 85, 401-407	3.8	47
91	Role of titanium on the reactive spreading of lead-free solders on alumina. <i>Journal of Materials Research</i> , <b>2006</b> , 21, 3222-3233	2.5	45
90	Sintering behavior of lanthanide-containing glass-ceramic sealants for solid oxide fuel cells. <i>Journal of Materials Chemistry</i> , <b>2012</b> , 22, 10042		37
89	Combining ageing and wear to assess the durability of zirconia-based ceramic heads for total hip arthroplasty. <i>Acta Biomaterialia</i> , <b>2013</b> , 9, 7545-55	10.8	35
88	Accelerated Aging in 3-mol%-Yttria-Stabilized Tetragonal Zirconia Ceramics Sintered in Reducing Conditions. <i>Journal of the American Ceramic Society</i> , <b>2004</b> , 87, 2282-2285	3.8	35
87	Direct silanization of zirconia for increased biointegration. <i>Acta Biomaterialia</i> , <b>2016</b> , 46, 323-335	10.8	33
86	Effect of different surface treatments on the hydrothermal degradation of a 3Y-TZP ceramic for dental implants. <i>Dental Materials</i> , <b>2014</b> , 30, 1136-46	5.7	32
85	A Comparative Study between Melt-Derived and Sol-Gel Synthesized 45S5 Bioactive Glasses. <i>Key Engineering Materials</i> , <b>2013</b> , 541, 15-30	0.4	27
84	3-D printing of chitosan-calcium phosphate inks: rheology, interactions and characterization. <i>Journal of Materials Science: Materials in Medicine</i> , <b>2018</b> , 30, 6	4.5	27
83	Characterization of 100Cr6 lattice structures produced by robocasting. <i>Materials and Design</i> , <b>2017</b> , 121, 345-354	8.1	26
82	Selective etching of injection molded zirconia-toughened alumina: Towards osseointegrated and antibacterial ceramic implants. <i>Acta Biomaterialia</i> , <b>2016</b> , 46, 308-322	10.8	26
81	Interfaces in graded coatings on titanium-based implants. <i>Journal of Biomedical Materials Research - Part A</i> , <b>2009</b> , 88, 1010-21	5.4	26
80	Towards the prediction of hydrothermal ageing of 3Y-TZP bioceramics from processing parameters. <i>Acta Materialia</i> , <b>2018</b> , 144, 245-256	8.4	26
79	Effects of Ca-, Mg- and Si-doping on microstructures of alumina/zirconia composites. <i>Journal of the European Ceramic Society</i> , <b>2012</b> , 32, 2711-2721	6	25

78	Effect of grain orientation and magnesium doping on strontium calcium phosphate resorption behavior. <i>Acta Biomaterialia</i> , <b>2019</b> , 89, 391-402	10.8	22
77	3D-characterization of the veneer-zirconia interface using FIB nano-tomography. <i>Dental Materials</i> , <b>2013</b> , 29, 157-65	5.7	22
76	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> , <b>2017</b> , 65, 600-608	4.1	22
75	Robocast zirconia-toughened alumina scaffolds: Processing, structural characterisation and interaction with human primary osteoblasts. <i>Journal of the European Ceramic Society</i> , <b>2018</b> , 38, 845-853	6	21
74	Iron ore sinter porosity characterisation with application of 3D X-ray tomography. <i>Ironmaking and Steelmaking</i> , <b>2010</b> , 37, 313-319	1.3	21
73	Fracture behavior of robocast HA/βTCP scaffolds studied by X-ray tomography and finite element modeling. <i>Journal of the European Ceramic Society</i> , <b>2017</b> , 37, 1735-1745	6	20
72	Ageing, Shocks and Wear Mechanisms in ZTA and the Long-Term Performance of Hip Joint Materials. <i>Materials</i> , <b>2017</b> , 10,	3.5	20
71	Impact of sandblasting on the mechanical properties and aging resistance of alumina and zirconia based ceramics. <i>Journal of the European Ceramic Society</i> , <b>2018</b> , 38, 915-925	6	19
70	A new method to measure monoclinic depth profile in zirconia-based ceramics from X-ray diffraction data. <i>International Journal of Materials Research</i> , <b>2010</b> , 101, 88-94	0.5	18
69	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> , <b>2005</b> , 25, 875-882	6	16
68	Sub-surface assessment of hydrothermal ageing in zirconia-containing femoral heads for hip joint applications. <i>Acta Biomaterialia</i> , <b>2018</b> , 68, 286-295	10.8	15
67	The influence of stresses on ageing kinetics of 3Y- and 4Y- stabilized zirconia. <i>Journal of the European Ceramic Society</i> , <b>2018</b> , 38, 753-760	6	14
66	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> , <b>2016</b> , 100, 410-419	4.9	13
65	Electrospinning of in situ synthesized silica-based and calcium phosphate bioceramics for applications in bone tissue engineering: A review. <i>Acta Biomaterialia</i> , <b>2021</b> , 123, 123-153	10.8	13
64	Degradation of alumina and zirconia toughened alumina (ZTA) hip prostheses tested under microseparation conditions in a shock device. <i>Tribology International</i> , <b>2013</b> , 63, 151-157	4.9	12
63	Thermal shock resistance of two micro-structured alumina obtained by natural sintering and SPS. <i>Ceramics International</i> , <b>2014</b> , 40, 619-627	5.1	12
62	Zirconia as a Biomaterial <b>2011</b> , 95-108		12
61	Epitaxial growth of tungsten nanoparticles on alumina and spinel surfaces. <i>Nanotechnology</i> , <b>2008</b> , 19, 215605	3.4	12

60	The in vitro evolution of resorbable brushite cements: A physico-chemical, micro-structural and mechanical study. <i>Acta Biomaterialia</i> , <b>2017</b> , 53, 515-525	10.8	11
59	Human primary osteoblast behaviour on microrough zirconia-toughened alumina and on selectively etched microrough zirconia-toughened alumina. <i>Journal of the European Ceramic Society</i> , <b>2018</b> , 38, 927-937	6	11
58	Evaluation of a new press-fit in situ setting composite porous scaffold for cancellous bone repair: towards a "surgeon-friendly" bone filler?. <i>Acta Biomaterialia</i> , <b>2010</b> , 6, 3808-12	10.8	11
57	Fabrication and characterization of hardystonite-chitosan biocomposite scaffolds. <i>Ceramics International</i> , <b>2019</b> , 45, 8804-8814	5.1	10
56	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> , <b>2020</b> , 40, 5670-5682	6	10
55	Assessment of ultrathin yttria-stabilized zirconia foils for biomedical applications. <i>Journal of Materials Science</i> , <b>2015</b> , 50, 6197-6207	4.3	9
54	Wetting and strength in the tin/silver/titanium/sapphire system. <i>International Journal of Materials Research</i> , <b>2004</b> , 95, 261-265		9
53	Tetragonal phase stability maps of ceria-yttria co-doped zirconia: From powders to sintered ceramics. <i>Ceramics International</i> , <b>2020</b> , 46, 9396-9405	5.1	9
52	Design of advanced one-step hydroxyapatite coatings for biomedical applications using the electrostatic spray deposition. <i>Applied Surface Science</i> , <b>2021</b> , 541, 148462	6.7	9
51	Characterization of materials and their interfaces in a direct bonded copper substrate for power electronics applications. <i>Microelectronics Reliability</i> , <b>2017</b> , 79, 288-296	1.2	8
50	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> , <b>2019</b> , 98, 40-47	4.1	8
49	Microstructure and hydrothermal ageing of alumina-zirconia composites modified by laser engraving. <i>Journal of the European Ceramic Society</i> , <b>2020</b> , 40, 2077-2089	6	8
48	Interplay between internal stresses and matrix stiffness influences hydrothermal ageing behaviour of zirconia-toughened-alumina. <i>Acta Materialia</i> , <b>2020</b> , 185, 55-65	8.4	8
47	A fast, stepwise procedure to assess time-temperature equivalence for hydrothermal ageing of zirconia-based materials. <i>Journal of the European Ceramic Society</i> , <b>2018</b> , 38, 181-186	6	7
46	Wear study of Total Ankle Replacement explants by microstructural analysis. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , <b>2016</b> , 61, 1-11	4.1	7
45	Surface treatment methods for mitigation of hydrothermal ageing of zirconia. <i>Journal of the European Ceramic Society</i> , <b>2019</b> , 39, 4322-4329	6	7
44	1.6 Zirconia as a Biomaterial <b>2017</b> , 122-144		7
43	Effect of spark plasma sintering of alumina nanopowder on the mechanical properties. <i>Journal of the Australian Ceramic Society</i> , <b>2017</b> , 53, 49-55	1.5	6

42	Modeling and in-situ evaluation of thermal gradients during sintering of large ceramic balls. <i>Ceramics International</i> , <b>2017</b> , 43, 7338-7345	5.1	6
41	Microstructural control of modular peptide release from microporous biphasic calcium phosphate. <i>Materials Science and Engineering C</i> , <b>2017</b> , 72, 268-277	8.3	6
40	Sintering behaviour of diopside (CaO/MgO/SiO <sub>2</sub> )/fluorapatite (9CaO/B <sub>2</sub> O <sub>5</sub> /CaF <sub>2</sub> ) bioactive glass. <i>Journal of Non-Crystalline Solids</i> , <b>2013</b> , 380, 17-24	3.9	6
39	Zirconia ceramics <b>2008</b> , 243-265		6
38	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> , <b>2020</b> , 40, 3191-3199	6	6
37	Microstructural analyses of artificial ageing in 5 commercially and non-commercially available Zirconia dental implants. <i>Journal of the European Ceramic Society</i> , <b>2020</b> , 40, 3642-3655	6	6
36	Robocasting of highly porous ceramics scaffolds with hierarchized porosity. <i>Additive Manufacturing</i> , <b>2021</b> , 38, 101776	6.1	6
35	Effect of the wick characteristics on the thermal behaviour of a LHP capillary evaporator. <i>International Journal of Thermal Sciences</i> , <b>2018</b> , 133, 22-31	4.1	5
34	Evidence for the formation of distorted nanodomains involved in the phase transformation of stabilized zirconia by coupling convergent beam electron diffraction and in situ TEM nanoindentation. <i>Acta Materialia</i> , <b>2013</b> , 61, 174-182	8.4	5
33	Oxidation of $\beta$ -aluminium oxynitride. <i>Corrosion Science</i> , <b>2011</b> , 53, 939-945	6.8	5
32	Direct-ink writing of strong and biocompatible titanium scaffolds with bimodal interconnected porosity. <i>Additive Manufacturing</i> , <b>2021</b> , 39, 101859	6.1	5
31	Porosity evolution of expanded vermiculite under pressure: the effect of pre-compaction. <i>SN Applied Sciences</i> , <b>2019</b> , 1, 1	1.8	4
30	Elaboration of self-coating alumina-based porous ceramics. <i>Journal of Materials Science</i> , <b>2006</b> , 41, 5200-5207	4.9	4
29	Atomic force microscopy study of the tetragonal to monoclinic transformation behavior of silica doped yttria-stabilized zirconia. <i>Journal of Materials Science</i> , <b>2005</b> , 40, 3821-3823	4.3	4
28	Porous functionalized polymers enable generating and transporting hyperpolarized mixtures of metabolites. <i>Nature Communications</i> , <b>2021</b> , 12, 4695	17.4	4
27	A global investigation into in situ nanoindentation experiments on zirconia: from the sample geometry optimization to the stress nanolocalization using convergent beam electron diffraction. <i>Journal of Microscopy</i> , <b>2013</b> , 249, 99-110	1.9	3
26	Improvement of the Mechanical Properties of Calcium Phosphate Bone Substitutes by Polycaprolactone Infiltration. <i>Key Engineering Materials</i> , <b>2007</b> , 361-363, 403-406	0.4	3
25	In vitro cyclic fatigue and hydrothermal aging lifetime assessment of yttria-stabilized zirconia dental ceramics. <i>Journal of the European Ceramic Society</i> , <b>2020</b> , 40, 4647-4654	6	3

24	Hierarchical salt-ceramic composites for efficient thermochemical energy storage. <i>Applied Materials Today</i> , <b>2020</b> , 20, 100658	6.6	3
23	Preparation of mullite-alumina composite by reaction sintering between Algerian kaolin and amorphous aluminum hydroxide. <i>Ceramics International</i> , <b>2021</b> , 47, 16208-16220	5.1	3
22	Strength and hydrothermal stability of NiO-stabilized zirconia solid oxide cells fuel electrode supports. <i>Journal of the European Ceramic Society</i> , <b>2021</b> , 41, 4206-4216	6	3
21	Corrosion and Low Temperature Degradation of 3Y-TZP dental ceramics under acidic conditions. <i>Journal of the European Ceramic Society</i> , <b>2020</b> , 40, 6114-6122	6	2
20	How do the grains slide in fine-grained zirconia polycrystals at high temperature?. <i>Applied Physics Letters</i> , <b>2007</b> , 91, 121904	3.4	2
19	DESIGN, MANUFACTURING, AND CHARACTERIZATION OF COPPER CAPILLARY STRUCTURES FOR LOOP HEAT PIPES. <i>Heat Pipe Science and Technology an International Journal</i> , <b>2017</b> , 8, 27-49		2
18	One-step fabrication of single-phase hydroxyapatite coatings on Ti-alloy implants by electrostatic spray deposition: From microstructural investigation to in vitro studies. <i>Surface and Coatings Technology</i> , <b>2021</b> , 427, 127805	4.4	2
17	Is Surface Metastability of Today's Ceramic Bearings a Clinical Issue?. <i>Journal of Composites Science</i> , <b>2021</b> , 5, 273	3	2
16	Degradation of Bioceramics <b>2012</b> , 195-252		2
15	Stable and reliable ohmic contact on p-type 4H-SiC up to 1500 h of aging at 600 °C. <i>Microelectronics Reliability</i> , <b>2020</b> , 110, 113694	1.2	1
14	Preliminary Results of In Vitro Study of Cell Growth in a 45S5 Bioactive Glass as Bone Substitute Using Scanning Electron and Confocal Microscopies. <i>Key Engineering Materials</i> , <b>2007</b> , 361-363, 1111-1114	0.4	1
13	Sintering Behavior of 45S5 Bioglass. <i>Key Engineering Materials</i> , <b>2007</b> , 361-363, 265-268	0.4	1
12	Durability of Zirconia-Based Ceramics and Composites for Total Hip Replacement. <i>Key Engineering Materials</i> , <b>2007</b> , 361-363, 791-794	0.4	1
11	Crack Propagation in TZP Ceramics. <i>Key Engineering Materials</i> , <b>1998</b> , 161-163, 563-568	0.4	1
10	New Trends in Ceramics for Orthopedics <b>2021</b> , 493-500		1
9	Modeling of interstitials diffusion during debinding/sintering of 3D printed metallic filaments: Application to titanium alloy and its embrittlement. <i>Acta Materialia</i> , <b>2021</b> , 219, 117224	8.4	1
8	Effect of surface properties of capillary structures on the thermal behaviour of a LHP flat disk-shaped evaporator. <i>International Journal of Thermal Sciences</i> , <b>2019</b> , 142, 163-175	4.1	0
7	Can (Mg,Y)-PSZ spinel composites be a valuable option for dental application?. <i>International Journal of Applied Ceramic Technology</i> , <b>2018</b> , 15, 873-883	2	0

6 Materials for hard tissue applications **2017**, 3-20

- 5 Mécanisme multiphysique de dégradation des zircons orthopédiques : couplage entre vieillissement hydrothermal et frottement en simulateur de hanche. *MATEC Web of Conferences*, **2013**, 7, 04007 0.3
- 4 Composites organiques-inorganiques pour la substitution et la réparation osseuse : concepts, premiers résultats et potentialité. *MATEC Web of Conferences*, **2013**, 7, 04013 0.3
- 3 Influence of Silica and Alumina Doping on the Microstructure and the Mechanical Properties of Zirconia Ceramics Used for Joint Prostheses Applications. *Key Engineering Materials*, **2001**, 206-213, 1633-1636 0.4
- 2 Wetting in the Tin-Silver-Titanium/Sapphire System. *Ceramic Transactions*, 121-128 0.1
- 1 Thermo-Mechanical Simulation of Self-Heating of a High-Power Diode Made of Ti<sub>3</sub>SiC<sub>2</sub> (MAX) Phase-on-4H-SiC Substrate. *Journal of Thermal Science*, **2021**, 30, 939-949 1.9