

Gerard Louis Vignoles

List of Publications by Year in descending order

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128
papers

2,925
citations

159585

30
h-index

214800

47
g-index

138
all docs

138
docs citations

138
times ranked

2205
citing authors

#	ARTICLE	IF	CITATIONS
1	A Raman study to obtain crystallite size of carbon materials: A better alternative to the Tuinstra-Koenig law. Carbon, 2014, 80, 629-639.	10.3	186
2	Pyrocarbon anisotropy as measured by electron diffraction and polarized light. Journal of Materials Research, 2000, 15, 92-101.	2.6	122
3	Modelling of carbon-carbon composite ablation in rocket nozzles. Composites Science and Technology, 2010, 70, 1303-1311.	7.8	107
4	Analytical modeling of the steady state ablation of a 3D C/C composite. International Journal of Heat and Mass Transfer, 2008, 51, 2614-2627.	4.8	99
5	Damage investigation and modeling of 3D woven ceramic matrix composites from X-ray tomography in-situ tensile tests. Acta Materialia, 2017, 140, 130-139.	7.9	99
6	CVD and CVI of pyrocarbon from various precursors. Surface and Coatings Technology, 2004, 188-189, 241-249.	4.8	81
7	Ablation of carbon-based materials: Multiscale roughness modelling. Composites Science and Technology, 2009, 69, 1470-1477.	7.8	73
8	Thermal design, optimization and additive manufacturing of ceramic regular structures to maximize the radiative heat transfer. Materials and Design, 2019, 163, 107539.	7.0	70
9	Structural features of pyrocarbon atomistic models constructed from transmission electron microscopy images. Carbon, 2012, 50, 4388-4400.	10.3	67
10	A theoretical/experimental approach to the intrinsic oxidation reactivities of C/C composites and of their components. Carbon, 2007, 45, 2768-2776.	10.3	58
11	Nanoscale structure and texture of highly anisotropic pyrocarbons revisited with transmission electron microscopy, image processing, neutron diffraction and atomistic modeling. Carbon, 2014, 80, 472-489.	10.3	53
12	A Brownian motion technique to simulate gasification and its application to C/C composite ablation. Computational Materials Science, 2009, 44, 1034-1041.	3.0	52
13	Adaptive estimation of normals and surface area for discrete 3-D objects: application to snow binary data from X-ray tomography. IEEE Transactions on Image Processing, 2005, 14, 585-596.	9.8	47
14	Low temperature pyrocarbons: a review. Journal of the Brazilian Chemical Society, 2006, 17, 1090-1095.	0.6	46
15	Correlation Between Homogeneous Propane Pyrolysis and Pyrocarbon Deposition. Journal of the Electrochemical Society, 2001, 148, C695.	2.9	45
16	Ablation of carbon-based materials: Investigation of roughness set-up from heterogeneous reactions. International Journal of Heat and Mass Transfer, 2005, 48, 3387-3401.	4.8	45
17	Formation of multiwall fullerenes from nanodiamonds studied by atomistic simulations. Physical Review B, 2009, 80, .	3.2	45
18	A Large-Scale Molecular Dynamics Study of the Divacancy Defect in Graphene. Journal of Physical Chemistry C, 2014, 118, 8200-8216.	3.1	40

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19	New insight on carbonisation and graphitisation mechanisms as obtained from a bottom-up analytical approach of X-ray diffraction patterns. Carbon, 2019, 147, 602-611.	10.3	39
20	Assessment of Geometrical and Transport Properties of a Fibrous C/C Composite Preform Using x-ray Computerized Micro-tomography: Part I. Image Acquisition and Geometrical Properties. Journal of Materials Research, 2005, 20, 2323-2339. Link on 3C-SiC(111) and xmins:miml= http://www.w3.org/1998/Math/MathML	2.6	38

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#	ARTICLE	IF	CITATIONS
37	Assessment of geometrical and transport properties of a fibrous C/C composite preform as digitized by x-ray computerized microtomography: Part II. Heat and gas transport properties. <i>Journal of Materials Research</i> , 2007, 22, 1537-1550.	2.6	27
38	Microstructure and gas-surface interaction studies of a 3D carbon/carbon composite in atmospheric entry plasma. <i>Carbon</i> , 2017, 114, 84-97.	10.3	27
39	Benefits of X-ray CMT for the Modeling of C/C Composites. <i>Advanced Engineering Materials</i> , 2011, 13, 178-185.	3.5	26
40	Numerical study of effective heat conductivities of foams by coupled conduction and radiation. <i>International Journal of Thermal Sciences</i> , 2016, 109, 270-278.	4.9	26
41	Analytical modeling of the transient ablation of a 3D C/C composite. <i>International Journal of Heat and Mass Transfer</i> , 2017, 115, 1150-1165.	4.8	26
42	Multi-scale modeling of diffusion and electrochemical reactions in porous micro-electrodes. <i>Chemical Engineering Science</i> , 2017, 173, 153-167.	3.8	25
43	Nanoscale elasticity of highly anisotropic pyrocarbons. <i>Carbon</i> , 2015, 94, 285-294.	10.3	24
44	Monitoring Density and Temperature in C/C Composites Processing by CVI with Induction Heating. <i>Journal of Materials Synthesis and Processing</i> , 2001, 9, 259-273.	0.3	23
45	Investigating carbon materials nanostructure using image orientation statistics. <i>Carbon</i> , 2015, 84, 160-173.	10.3	23
46	A time-dependent atomistic reconstruction of severe irradiation damage and associated property changes in nuclear graphite. <i>Carbon</i> , 2017, 120, 111-120.	10.3	23
47	Ablative and catalytic behavior of carbon-based porous thermal protection materials in nitrogen plasmas. <i>Carbon</i> , 2018, 134, 376-390.	10.3	23
48	Surface relaxation and oxygen adsorption behavior of different SiC polytypes: a first-principles study. <i>Journal of Physics Condensed Matter</i> , 2010, 22, 265003.	1.8	22
49	A New Approach To Light-Weight Ablators Analysis: From Micro-Tomography Measurements to Statistical Analysis and Modeling. , 2013, , .		22
50	Global and local characterization of the thermal diffusivities of SiCf/SiC composites with infrared thermography and flash method. <i>Composites Science and Technology</i> , 2009, 69, 1131-1141.	7.8	21
51	Modelling Binary, Knudsen and Transition Regime Diffusion Inside Complex Porous Media. <i>European Physical Journal Special Topics</i> , 1995, 05, C5-159-C5-166.	0.2	20
52	Reinforced carbon foams prepared by chemical vapor infiltration: A process modeling approach. <i>Surface and Coatings Technology</i> , 2008, 203, 510-515.	4.8	20
53	The CVI-Process : State of the Art and Perspective. <i>Ceramic Engineering and Science Proceedings</i> , 0, , 373-386.	0.1	20
54	Modelling of the CVI Processes. <i>Advances in Science and Technology</i> , 2006, 50, 97-106.	0.2	19

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55	A Brownian motion algorithm for tow scale modeling of chemical vapor infiltration. Computational Materials Science, 2011, 50, 1871-1878.	3.0	18
56	Mechanism of strength reduction along the graphenization pathway. Science Advances, 2015, 1, e1501009.	10.3	16
57	Polymerâ€Derived Silicoboron Carbonitride Foams for CO ₂ Capture: From Design to Application as Scaffolds for the in Situ Growth of Metalâ€Organic Frameworks. Chemistry - A European Journal, 2016, 22, 8346-8357.	3.3	16
58	Modeling of the non-linear mechanical and thermomechanical behavior of 3D carbon/carbon composites based on internal interfaces. Carbon, 2019, 154, 178-191.	10.3	16
59	Optimal orientation estimators for detection of cylindrical objects. Signal, Image and Video Processing, 2008, 2, 51-58.	2.7	15
60	Co _{1-x} Mg _x Mo ₄ Compounds for Pressure Indicators. ACS Applied Materials & Interfaces, 2011, 3, 1319-1324.	8.0	15
61	Tough silicon carbide macro/mesocellular crack-free monolithic foams. Journal of Materials Chemistry, 2011, 21, 14732.	6.7	15
62	Temperature induced transition from hexagonal to circular pits in graphite oxidation by O2. Applied Physics Letters, 2011, 99, .	3.3	15
63	Atomic relaxation and dynamical generation of ordered and disordered chemical vapour infiltration (CVI) SiC polytypes. Journal of Crystal Growth, 1992, 118, 430-438.	1.5	14
64	Analytical and numerical study of the densification of carbon/carbon composites by a film-boiling chemical vapor infiltration process. Chemical Engineering Science, 2006, 61, 7509-7527.	3.8	14
65	High-flux sublimation of a 3D carbon/carbon composite: Surface roughness patterns. Carbon, 2021, 173, 817-831.	10.3	14
66	Processing of Ceramic Matrix Composites by Pulsed-CVI and Related Techniques. Key Engineering Materials, 1998, 159-160, 359-366.	0.4	13
67	Hindered rotor models with variable kinetic functions for accurate thermodynamic and kinetic predictions. Journal of Chemical Physics, 2010, 133, 154112.	3.0	13
68	Pearson random walk algorithms for fiber-scale modeling of Chemical Vapor Infiltration. Computational Materials Science, 2011, 50, 1157-1168.	3.0	13
69	The rate-limiting step in the thermal oxidation of silicon carbide. Scripta Materialia, 2010, 62, 654-657.	5.2	12
70	An Efficient and Accurate Formalism for the Treatment of Large Amplitude Intramolecular Motion. Journal of Chemical Theory and Computation, 2012, 8, 2713-2724.	5.3	12
71	Interaction between a reactive preform and the surrounding gas-phase during CVI. European Physical Journal Special Topics, 2000, 10, Pr2-9-Pr2-17.	0.2	12
72	Computation of the conducto-radiative effective heat conductivity of porous media defined by Triply Periodic Minimal Surfaces. International Journal of Thermal Sciences, 2021, 159, 106598.	4.9	11

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73	Experimental and theoretical investigation of BCl ₃ decomposition in H ₂ . Surface and Coatings Technology, 2008, 203, 643-647.	4.8	10
74	Image-Based Numerical Modeling of Self-Healing in a Ceramic-Matrix Minicomposite. Ceramics, 2019, 2, 308-326.	2.6	10
75	Optimal Thickness of a Porous Micro-Electrode Operating a Single Redox Reaction. ChemElectroChem, 2019, 6, 173-180.	3.4	10
76	Digitization and image-based structure-properties relationship evaluation of a porous gold micro-electrode. Materials and Design, 2020, 193, 108812.	7.0	10
77	Giant titanium electron wave function in gallium oxide: A potential electron-nuclear spin system for quantum information processing. Physical Review B, 2010, 82, .	3.2	9
78	Reaction Mechanism for the Thermal Decomposition of BCl ₃ /CH ₄ /H ₂ Gas Mixtures. Journal of Physical Chemistry A, 2011, 115, 11579-11588.	2.5	9
79	Application of X-ray computed micro-tomography to the study of damage and oxidation kinetics of thermostructural composites. Nuclear Instruments & Methods in Physics Research B, 2014, 324, 113-117.	1.4	9
80	The Notion of Densification Front in CVI Processing with Temperature Gradients. , 0, , 187-195.		9
81	STIM tomography: A potential tool for the non-destructive characterisation of SiC microcomposite materials. Nuclear Instruments & Methods in Physics Research B, 2001, 181, 238-243.	1.4	8
82	Evaluation of Al/SiC Wetting Characteristics in Functionally Graded Metal-Matrix Composites by Synchrotron Radiation Microtomography. Materials Science Forum, 2003, 423-425, 263-268.	0.3	8
83	Computing Structural and Transport Properties of C/C Composites from 3D Tomographic Images.. Materials Science Forum, 2004, 455-456, 751-754.	0.3	8
84	Analytical stability study of the densification front in carbon- or ceramic-matrix composites processing by TG-CVI. Chemical Engineering Science, 2007, 62, 6081-6089.	3.8	8
85	Axis detection of cylindrical objects in three-dimensional images. Journal of Electronic Imaging, 2008, 17, 031108.	0.9	8
86	Fibre-scale Modeling of C/C Processing by Chemical Vapour Infiltration using Xray CMT Images and Random Walkers. ECS Transactions, 2009, 25, 1275-1284.	0.5	8
87	Theoretical Study of the Decomposition of BCl ₃ Induced by a H Radical. Journal of Physical Chemistry A, 2011, 115, 4786-4797.	2.5	8
88	Reactive Chemical Vapour Deposition of Titanium Carbide from H ₂ -TiCl ₄ Gas Mixture on Pyrocarbon: A Comprehensive Study. Physics Procedia, 2013, 46, 79-87.	1.2	8
89	Chemical vapor deposition/infiltration processes for ceramic composites. , 2015, , 147-176.		8
90	Thermographic and tomographic methods for tridimensional characterization of thermal transfer in silica/phenolic composites. Composites Part B: Engineering, 2016, 104, 71-79.	12.0	8

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91	Ablation of Carbon/Carbon Composites: Direct Numerical Simulation and Effective Behavior. , 0, , 99-106.		8
92	Rarefied Pure Gas Transport in Non-isothermal Porous Media: Effective Transport Properties from Homogenization of the Kinetic Equation. Transport in Porous Media, 2008, 73, 211-232.	2.6	7
93	Rippled nanocarbons from periodic arrangements of reordered bivacancies in graphene or nanotubes. Journal of Chemical Physics, 2012, 136, 124705.	3.0	7
94	Synthesis of carbon coating and carbon matrix for C/C composites based on a hydrocarbon in its supercritical state. Journal of Supercritical Fluids, 2017, 127, 41-47.	3.2	7
95	Low pressure gas transfer in fibrous media with progressive infiltration: correlation between different transfer modes. International Journal of Heat and Mass Transfer, 2022, 182, 121954.	4.8	7
96	Modeling of chemical vapor infiltration processes. , 2015, , 415-458.		6
97	A quantitative, space-resolved method for optical anisotropy estimation in bulk carbons. Carbon, 2015, 91, 423-435.	10.3	6
98	Upscaled model for diffusion and serial reduction pathways in porous electrodes. Journal of Electroanalytical Chemistry, 2019, 855, 113325.	3.8	6
99	¹³ C NMR Parameters of Disordered Carbons: Atomistic Simulations, DFT Calculations, and Experimental Results. Journal of Physical Chemistry C, 2020, 124, 12784-12793.	3.1	6
100	The role of P 3s ² lone pair (E) in structure, properties and phase transitions of black phosphorus. Stereochemistry and ab initio topology analyses. Solid State Sciences, 2020, 100, 106068.	3.2	6
101	Thermal modelling of a carbon/carbon composite material fabrication process. European Physical Journal Special Topics, 2004, 120, 291-297.	0.2	6
102	ITERATIONS OF THE SAWTOOTH MAP AS A DYNAMICAL MODEL FOR CVD/CVI SiC POLYTYPE GROWTH. International Journal of Bifurcation and Chaos in Applied Sciences and Engineering, 1993, 03, 1177-1194.	1.7	5
103	Identification of Microscale Ablative Properties of C/C Composites Using Inverse Simulation. , 2006, , .		5
104	Methyldichloroborane Evidenced as an Intermediate in the Chemical Vapour Deposition Synthesis of Boron Carbide. Journal of Nanoscience and Nanotechnology, 2011, 11, 8323-8327.	0.9	5
105	5.4 Chemical Vapor Infiltration Processing of Ceramic Matrix Composites. , 2018, , 86-129.		5
106	Non-parametric synthesis of laminar volumetric textures from a 2D sample. , 2012, , .		5
107	Mechanisms of elastic softening in highly anisotropic carbons under in-plane compression/indentation. Carbon, 2022, 197, 425-434.	10.3	5
108	Rarefied Pure Gas Transport in Non-isothermal Porous Media: Validation and Tests of the Model. Transport in Porous Media, 2008, 75, 295-317.	2.6	4

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127	Integrative Chemistry toward Biosourced SiC Macrocellular Foams Bearing Unprecedented Heat Transport Properties. Materials Research Society Symposia Proceedings, 2014, 1621, 209-214.	0.1	0
128	Thermal properties measurements of a silica/pyrocarbon composite at the microscale. Journal of Applied Physics, 2016, 120, 245101.	2.5	0