

# Marianne Balat-Pichelin

## List of Publications by Year in descending order

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90  
papers

2,115  
citations

186265

28  
h-index

265206

42  
g-index

91  
all docs

91  
docs citations

91  
times ranked

1703  
citing authors

#	ARTICLE	IF	CITATIONS
1	Recombination coefficient of atomic oxygen on ceramic materials under earth re-entry conditions by optical emission spectroscopy. <i>Chemical Physics</i> , 2003, 291, 181-194.	1.9	113
2	Understanding coronal heating and solar wind acceleration: Case for in situ near-Sun measurements. <i>Reviews of Geophysics</i> , 2007, 45, .	23.0	85
3	High temperature oxidation of stainless steel AISI316L in air plasma. <i>Applied Surface Science</i> , 2008, 255, 1759-1765.	6.1	78
4	Emissivity and catalycity measurements on SiC-coated carbon fibre reinforced silicon carbide composite. <i>Journal of the European Ceramic Society</i> , 2009, 29, 2045-2051.	5.7	76
5	Structural modifications of carbon-carbon composites under high temperature and ion irradiation. <i>Applied Surface Science</i> , 2005, 243, 376-393.	6.1	64
6	Effect of the Machining Method on the Catalycity and Emissivity of ZrB <sub>2</sub> and ZrB <sub>2</sub> -HfB <sub>2</sub> -Based Ceramics. <i>Journal of the American Ceramic Society</i> , 2008, 91, 1461-1468.	3.8	62
7	Emissivity measurements on carbon-carbon composites at high temperature under high vacuum. <i>Applied Surface Science</i> , 2006, 253, 778-783.	6.1	61
8	Surface temperature jump beyond active oxidation of carbon/silicon carbide composites in extreme aerothermal conditions. <i>Carbon</i> , 2014, 71, 102-119.	10.3	60
9	Catalytic and Radiative Behaviors of ZrB <sub>2</sub> -SiC Ultrahigh Temperature Ceramic Composites. <i>Journal of Spacecraft and Rockets</i> , 2006, 43, 1004-1012.	1.9	59
10	High temperature oxidation of SiC under helium with low-pressure oxygen-Part 1: Sintered $\hat{\pm}$ -SiC. <i>Journal of the European Ceramic Society</i> , 2010, 30, 2653-2660.	5.7	58
11	Oxidation behavior of spark plasma sintered ZrC-SiC composites obtained from the polymer-derived ceramics route. <i>Ceramics International</i> , 2014, 40, 5025-5031.	4.8	58
12	Dissociation of CO <sub>2</sub> molecules in microwave plasma. <i>Chemical Physics</i> , 2011, 382, 127-131.	1.9	55
13	Atomic Oxygen Recombination on Quartz at High Temperature: Experiments and Molecular Dynamics Simulation. <i>Langmuir</i> , 2006, 22, 7208-7216.	3.5	53
14	Neutral oxygen atom density in the MESOX air plasma solar furnace facility. <i>Chemical Physics</i> , 2006, 327, 112-118.	1.9	52
15	High temperature oxidation of SiC under helium with low-pressure oxygen. Part 2: CVD $\hat{\pm}$ -SiC. <i>Journal of the European Ceramic Society</i> , 2010, 30, 2661-2670.	5.7	48
16	Physico-chemical behavior of carbon materials under high temperature and ion irradiation. <i>Applied Surface Science</i> , 2001, 180, 227-245.	6.1	46
17	High temperature oxidation of Zr- and Hf-carbides: Influence of matrix and sintering additive. <i>Journal of the European Ceramic Society</i> , 2013, 33, 2867-2878.	5.7	38
18	Oxygen atom density in microwave oxygen plasma. <i>Vacuum</i> , 2007, 81, 1088-1093.	3.5	37

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19	Microstructural characterization of ZrB <sub>2</sub> -SiC based UHTC tested in the MESOX plasma facility. Journal of the European Ceramic Society, 2010, 30, 2345-2355.	5.7	37
20	Chemical degradation of SiC/SiC composite for the cladding of gas-cooled fast reactor in case of severe accident scenarios. Corrosion Science, 2012, 59, 127-135.	6.6	35
21	Passive/active oxidation transition for CMC structural materials designed for the IXV vehicle re-entry phase. Journal of the European Ceramic Society, 2015, 35, 487-502.	5.7	34
22	Recombination of atomic oxygen on $\alpha$ -Al <sub>2</sub> O <sub>3</sub> at high temperature under air microwave-induced plasma. Chemical Physics, 2007, 340, 217-226.	1.9	33
23	Behavior of SiC at high temperature under helium with low oxygen partial pressure. Journal of the European Ceramic Society, 2008, 28, 2995-3004.	5.7	32
24	High temperature oxidation of ZrC-20%MoSi <sub>2</sub> in air for future solar receivers. Solar Energy Materials and Solar Cells, 2011, 95, 2228-2237.	6.2	31
25	Emissivity, catalycity and microstructural characterization of ZrB <sub>2</sub> -SiC fiber based UHTC at high temperature in a non-equilibrium air plasma flow. Ceramics International, 2014, 40, 9731-9742.	4.8	30
26	Influence of roughness and composition on the total emissivity of tungsten, rhenium and tungsten-25% rhenium alloy at high temperature. Journal of Alloys and Compounds, 2014, 585, 510-517.	5.5	30
27	Total hemispherical emissivity of sintered SiC up to 1850 K in high vacuum and in air at different pressures. Journal of the European Ceramic Society, 2018, 38, 3447-3456.	5.7	30
28	XPS and AES studies of UHTC ZrB <sub>2</sub> -SiC <sub>3</sub> N <sub>4</sub> treated with solar energy. Surface and Interface Analysis, 2014, 46, 817-822.	1.8	29
29	Efficiency and behavior of textured high emissivity metallic coatings at high temperature. Materials and Design, 2015, 83, 85-94.	7.0	29
30	High temperature oxidation of SiC under helium with low-pressure oxygen. Part 3: $\alpha$ -SiC/SiC/PyC/SiC. Journal of the European Ceramic Society, 2012, 32, 485-494.	5.7	28
31	Production of metallic nanopowders (Mg, Al) by solar carbothermal reduction of their oxides at low pressure. Journal of Magnesium and Alloys, 2016, 4, 140-150.	11.9	28
32	Etching of carbon-tungsten composite with oxygen plasma. Surface and Coatings Technology, 2010, 204, 1503-1508.	4.8	26
33	Oxidation of Inconel 625 superalloy upon treatment with oxygen or hydrogen plasma at high temperature. Applied Surface Science, 2014, 305, 674-682.	6.1	25
34	Hydrogen atom density in a solar plasma reactor. Vacuum, 2010, 84, 969-974.	3.5	23
35	Recombination of atomic oxygen on sintered zirconia at high temperature in non-equilibrium air plasma. Materials Chemistry and Physics, 2010, 123, 40-46.	4.0	23
36	Emissivity at high temperature of Ni-based superalloys for the design of solar receivers for future tower power plants. Solar Energy Materials and Solar Cells, 2021, 227, 111066.	6.2	23

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37	Zirconium carbide doped with tantalum silicide: Microstructure, mechanical properties and high temperature oxidation. <i>Materials Chemistry and Physics</i> , 2013, 143, 407-415.	4.0	21
38	Evolution of the emissivity of tungsten at high temperature with and without proton bombardment. <i>Acta Materialia</i> , 2015, 84, 305-316.	7.9	21
39	Sintering and oxidation behavior of HfB <sub>2</sub> -SiC composites from 0 to 30 vol% SiC between 1450 and 1800 K. <i>Ceramics International</i> , 2019, 45, 1846-1856.	4.8	21
40	Microstructural characterization of ZrC-MoSi <sub>2</sub> composites oxidized in air at high temperatures. <i>Applied Surface Science</i> , 2013, 283, 751-758.	6.1	19
41	Effect of high temperature oxidation on the radiative properties of HfC-based ceramics. <i>Corrosion Science</i> , 2017, 126, 255-264.	6.6	19
42	Oxidation and emissivity of Inconel 718 alloy as potential space debris during its atmospheric entry. <i>Materials Characterization</i> , 2017, 127, 379-390.	4.4	18
43	Atomic oxygen recombination on the ODS PM 1000 at high temperature under air plasma. <i>Applied Surface Science</i> , 2010, 256, 4906-4914.	6.1	17
44	Experimental study of carbon materials behavior under high temperature and VUV radiation: Application to Solar Probe+ heat shield. <i>Applied Surface Science</i> , 2011, 257, 3196-3204.	6.1	16
45	Thermal radiative properties of carbon materials under high temperature and vacuum ultra-violet (VUV) radiation for the heat shield of the Solar Probe Plus mission. <i>Applied Surface Science</i> , 2012, 258, 2829-2835.	6.1	16
46	Aerothermal response of ceramic matrix composites to nitrogen plasma at temperatures above 2000 K. <i>Aerospace Science and Technology</i> , 2014, 39, 1-5.	4.8	15
47	Numerical and experimental study of the thermal degradation process during the atmospheric re-entry of a $TiAl_6$ ceramic. <i>Acta Astronautica</i> , 2016, 122, 258-286.	4.8	15
48	High temperature properties of AlN coatings deposited by chemical vapor deposition for solar central receivers. <i>Surface and Coatings Technology</i> , 2019, 377, 124872.	4.8	15
49	Oxidation and emissivity of Invar 36 alloy in air plasma at high temperatures. <i>Journal of Alloys and Compounds</i> , 2019, 772, 1003-1016.	5.5	15
50	Metal fuels production for future long-distance transportation through the carbothermal reduction of MgO and Al <sub>2</sub> O <sub>3</sub> : A review of the solar processes. <i>Energy Conversion and Management</i> , 2022, 251, 114951.	9.2	15
51	Oxidation in Air at 1400 K and Optical Properties of Inconel 625, FeCrAlloy and Kanthal Super ER. <i>Oxidation of Metals</i> , 2020, 93, 355-370.	2.1	14
52	Concentrated Solar Energy to Study High Temperature Materials for Space and Energy. <i>Journal of Solar Energy Engineering, Transactions of the ASME</i> , 2011, 133, .	1.8	13
53	Reducing the temperature of a C/C composite heat shield for solar probe missions with an optically selective semi-transparent pyrolytic boron nitride (pBN) coating. <i>Carbon</i> , 2015, 82, 39-50.	10.3	13
54	Influence of alumina on the passive oxidation at low oxygen pressure of hot-pressed $\hat{\pm}$ -SiC. <i>Scripta Materialia</i> , 2009, 60, 481-484.	5.2	12

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55	Sequential oxidation and reduction of tungsten/tungsten oxide. <i>Thin Solid Films</i> , 2015, 591, 174-181.	1.8	11
56	Oxidation resistance of Zr- and Hf-diboride composites containing SiC in air plasma up to 2600ÅK for aerospace applications. <i>Ceramics International</i> , 2022, 48, 2177-2190.	4.8	11
57	Study of carbon erosion under ion bombardment at high temperature: Application to the thermal protection system of Solar Probe+. <i>Vacuum</i> , 2010, 85, 380-389.	3.5	10
58	Experimental carbothermal reduction of MgO at low pressure using concentrated solar energy. <i>Journal of Mining and Metallurgy, Section B: Metallurgy</i> , 2018, 54, 39-50.	0.8	10
59	Synthesis of iron-oxide nanowires using industrial-grade iron substrates. <i>Vacuum</i> , 2014, 100, 71-73.	3.5	9
60	Formation and reduction of thin oxide films on a stainless steel surface upon subsequent treatments with oxygen and hydrogen plasma. <i>Thin Solid Films</i> , 2015, 591, 186-193.	1.8	9
61	Emissivity of Elgiloy and pure niobium at high temperature for the Solar Orbiter mission. <i>Vacuum</i> , 2017, 142, 87-95.	3.5	8
62	Characterisation of EN 1.4136 stainless steel heat-treated in solar furnace. <i>International Journal of Advanced Manufacturing Technology</i> , 2019, 101, 2955-2964.	3.0	8
63	Behavior of TA6V Alloy at High Temperature in Air Plasma Conditions: Part 2â€”Thermal Diffusivity and Emissivity. <i>Journal of Materials Engineering and Performance</i> , 2020, 29, 4606-4616.	2.5	8
64	Improving the solar carbothermal reduction of magnesia for metallic fuels production through reactor designing, milling and binders. <i>Journal of Cleaner Production</i> , 2021, 315, 128142.	9.3	8
65	Preliminary tests of silicon carbide based concretes for hybrid rocket nozzles in a solar furnace. <i>Acta Astronautica</i> , 2014, 99, 242-251.	3.2	7
66	Hydrogen atom recombination on tungsten at high temperature: Experiment and Molecular Dynamics Simulation. <i>Surface Science</i> , 2014, 628, 66-75.	1.9	7
67	Reduction of a thin chromium oxide film on Inconel surface upon treatment with hydrogen plasma. <i>Applied Surface Science</i> , 2016, 387, 1140-1146.	6.1	7
68	Behavior and optical properties of Zerodur® at high temperatures. <i>Infrared Physics and Technology</i> , 2019, 101, 68-77.	2.9	7
69	Experimental Carbothermal Reduction of Al2O3 at Low Pressure Using Concentrated Solar Energy. <i>Journal of Sustainable Metallurgy</i> , 2020, 6, 161-173.	2.3	7
70	Emissivity of Boron Nitride and Metals for the Solar Probe Plus Mission. <i>Journal of Spacecraft and Rockets</i> , 2016, 53, 1119-1127.	1.9	6
71	Spectral directional and total hemispherical emissivity of virgin and oxidized 316L stainless steel from 1000 to 1650â€”K. <i>Infrared Physics and Technology</i> , 2022, 123, 104156.	2.9	6
72	Interaction of hydrogen plasma with carbonâ€”tungsten composite layer. <i>Nuclear Engineering and Design</i> , 2011, 241, 1255-1260.	1.7	5

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73	Experimental study of pyrolytic boron nitride at high temperature with and without proton and VUV irradiations. <i>Applied Surface Science</i> , 2014, 314, 415-425.	6.1	5
74	Solar metallurgy for the production of Al and Mg particles. <i>AIP Conference Proceedings</i> , 2018, , .	0.4	5
75	Tungsten behavior under proton flux and high temperature. <i>Nuclear Instruments &amp; Methods in Physics Research B</i> , 2009, 267, 1841-1848.	1.4	4
76	Influence of surface roughness and temperature on the oxidation behavior of ZrC/SiC samples. <i>Ceramics International</i> , 2016, 42, 10985-10991.	4.8	4
77	Optical indices and transport scattering coefficient of pyrolytic boron nitride: a natural thermal barrier coating for solar shields. <i>Journal of Materials Science</i> , 2016, 51, 4660-4669.	3.7	4
78	Metal fuel production through the solar carbothermal reduction of magnesia: effect of the reducing agent. <i>Sustainable Energy and Fuels</i> , 0, , .	4.9	4
79	Behavior of TA6V Alloy at High Temperature in Air Plasma Conditions: Part 1 "Oxidation. <i>Journal of Materials Engineering and Performance</i> , 2020, 29, 4597-4605.	2.5	3
80	Oxidation and high-temperature radiative properties of the Kanthal Super ER intermetallic alloy. <i>Corrosion Science</i> , 2021, 189, 109601.	6.6	3
81	Oxidation resistance and emissivity of diboride-based composites containing tantalum disilicide in air plasma up to 2600ÅK for space applications. <i>Ceramics International</i> , 2022, 48, 27878-27890.	4.8	3
82	Microwave Discharge as an Effective Tool for Surface Treatment of Small Samples. <i>IEEE Transactions on Plasma Science</i> , 2011, 39, 2064-2065.	1.3	2
83	Oxidation of SiC in low-pressure CO2 plasma: Formation of silica nano-needles. <i>Vacuum</i> , 2014, 100, 50-52.	3.5	2
84	Improving the Solar Carbothermal Reduction of Magnesia as a Production Process of Metal Fuels. <i>International Journal of Mining Materials and Metallurgical Engineering</i> , 0, , .	0.0	2
85	Interaction of highly dissociated low pressure hydrogen plasma with W-C thin film deposits. <i>Thin Solid Films</i> , 2012, 520, 2916-2921.	1.8	1
86	Multilayer multifunctional advanced coatings for receivers of concentrated solar power plants. <i>MRS Communications</i> , 2019, 9, 1193-1199.	1.8	1
87	Modeling multilayer coating systems in solar receivers. <i>Surface and Coatings Technology</i> , 2020, 399, 126102.	4.8	1
88	3D mesh displacement strategy to simulate the thermal degradation of materials under atmospheric reentry conditions. <i>Acta Astronautica</i> , 2022, 199, 293-312.	3.2	1
89	Behavior at High Temperature of Metallic Liners (Ta, Nb) Used in the Sandwich Cladding Material of the GFR. <i>Advances in Science and Technology</i> , 2014, 94, 17-22.	0.2	0
90	Physico-Chemical Behavior and Thermo-Optical and Mechanical Properties of Glassy Carbon Up to 2100 K Under Low-Energy Proton and Vacuum Ultraviolet Irradiations. <i>Journal of Materials Engineering and Performance</i> , 2021, 30, 8117-8130.	2.5	0