Lionel Desgranges

List of Publications by Year
in descending order

108	2,302	218381	233125
papers	citations	26 h-index	45 g-index

111	111	111	1575
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Annealing of the Raman defect peaks in He-implanted UO2. Journal of Nuclear Materials, 2022, 559, 153405.	1.3	7
2	MERARG Experimental Loop: A Forward Fitting Method for Fission Gas Release Analysis. IEEE Transactions on Nuclear Science, 2022, 69, 786-791.	1.2	0
3	In-situ high resolution photoelectron spectroscopy study on interaction of sodium with UO2+x film (0 â‰ x â‰ 1). Journal of Nuclear Materials, 2021, 545, 152646.	1.3	8
4	Atomic scale Monte-Carlo simulations of neutron diffraction experiments on stoichiometric uranium dioxide up to 1664 K. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2021, 1002, 165251.	0.7	3
5	Gas detection in sodium cooled fast reactors: determination of a transfer function. EPJ Web of Conferences, 2021, 253, 05002.	0.1	1
6	On the origins and the evolution of the fuel-cladding bonding phenomenon in PWR fuel rods. Journal of Nuclear Materials, 2019, 520, 110-120.	1.3	11
7	Characterization of an UO2 ceramic via Raman imaging and electron back-scattering diffraction. Materials Characterization, 2019, 147, 280-285.	1.9	12
8	Quantification of irradiation-induced defects in UO2 using Raman and positron annihilation spectroscopies. Acta Materialia, 2019, 164, 512-519.	3.8	23
9	Thermochemical effect of fission products on sodium â€“ MOX fuel reaction: The case of niobium. Journal of Nuclear Materials, 2018, 500, 361-365.	1.3	0
10	Understanding Local Structure versus Longâ€Range Structure: Theâ€‰Case of UO₂. Chemistry - A European Journal, 2018, 24, 2085-2088.	1.7	3
11	Evaluation of T2g band intensity distribution across a surface of an UO2 ceramic. AIP Conference Proceedings, 2018, , .	0.3	1
12	New insight in the uranium valence state determination in U Nd1â˜’O2Â±. Journal of Nuclear Materials, 2018, 507, 145-150.	1.3	18
13	Investigating the role of irradiation defects during UO2 oxidative dissolution. Journal of Nuclear Materials, 2018, 509, 305-312.	1.3	6
14	A new methodology for studying neutron absorber materials: First results with boron carbide. Nuclear Instruments & Methods in Physics Research B, 2018, 432, 42-47.	0.6	5
15	Characterization of Oxygen Defect Clusters in UO_{2+x} Using Neutron Scattering and PDF Analysis. Inorganic Chemistry, 2018, 57, 7064-7076.	1.9	11
16	Raman imaging and principal component analysis-based data processing on uranium oxide ceramics. Materials Characterization, 2017, 129, 260-269.	1.9	40
17	What Is the Actual Local Crystalline Structure of Uranium Dioxide, UO₂? A New Perspective for the Most Used Nuclear Fuel. Inorganic Chemistry, 2017, 56, 321-326.	1.9	45
18	Fission products behaviour during a power transient: Their inventory in an intragranular bubble. Journal of Nuclear Materials, 2017, 493, 225-229.	1.3	3

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19	High Burn-up Structure in Nuclear Fuel: Impact on Fuel Behavior. EPJ Web of Conferences, 2016, 115, 04005.	0.1	5
20	Thin film samples: a new methodology for investigating the mechanisms of fission gas releases from nuclear fuel during a LOCA. MRS Advances, 2016, 1, 2439-2445.	0.5	0
21	Irradiation Defects in UO2 Leached in Oxidizing Water: An in-situ Raman Study. Procedia Chemistry, 2016, 21, 326-333.	0.7	4
22	Storage of Defective Fuel Pins in SFR Core. Procedia Chemistry, 2016, 21, 378-385.	0.7	3
23	Experimental evidence of oxygen thermo-migration in PWR UO2 fuels during power ramps using in-situ oxido-reduction indicators. Journal of Nuclear Materials, 2016, 480, 32-39.	1.3	10
24	In situ Raman estimation of irradiation-induced heating of UO2. Journal of Nuclear Materials, 2016, 478, 172-175.	1.3	3
25	Structural Changes in the Local Environment of Uranium Atoms in the Three Phases of U4O9. Inorganic Chemistry, 2016, 55, 7485-7491.	1.9	19
26	Charged defects during alpha-irradiation of actinide oxides as revealed by Raman and luminescence spectroscopy. Nuclear Instruments & Methods in Physics Research B, 2016, 374, 67-70.	0.6	26
27	Evolution of extended defects in polycrystalline UO2 under heavy ion irradiation: combined TEM, XRD and Raman study. Nuclear Instruments & Methods in Physics Research B, 2016, 374, 51-57.	0.6	32
28	High temperature Raman study of UO₂: A possible tool forin situestimation of irradiation-induced heating. Journal of Raman Spectroscopy, 2015, 46, 418-420.	1.2	24
29	Characterization of radiation damage in ceramics: Old challenge new issues?. Journal of Materials Research, 2015, 30, 1495-1515.	1.2	21
30	Raman micro-spectroscopy of UOX and MOX spent nuclear fuel characterization and oxidation resistance of the high burn-up structure. Journal of Nuclear Materials, 2015, 458, 343-349.	1.3	28
31	Characterising the Uâ€“Ndâ€“O miscibility gap by an experimental and a theoretical approach. Journal of Nuclear Materials, 2015, 458, 394-405.	1.3	7
32	Evidence of a new crystalline phase in Uâ€“Gdâ€“O phase diagram. Journal of Nuclear Materials, 2015, 461, 186-192.	1.3	2
33	Experimental evidence of the formation of a new chemical phase in a power ramped UO2 nuclear fuel. Journal of Nuclear Materials, 2015, 457, 246-251.	1.3	3
34	3D thermo-chemicalâ€“mechanical simulation of power ramps with ALCYONE fuel code. Journal of Nuclear Materials, 2014, 452, 578-594.	1.3	41
35	What Can We Learn From Raman Spectroscopy on Irradiation-Induced Defects in UO2?. Jom, 2014, 66, 2546-2552.	0.9	13
36	Application of the CALPHAD method to the thermodynamic modeling of a miscibility gap in the U-Nd-O phase diagram. Materials Research Society Symposia Proceedings, 2014, 1645, 1.	0.1	1

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37	A statistical approach of the thermodynamic properties of UO2 at high temperature. Nuclear Instruments & Methods in Physics Research B, 2014, 327, 68-73.	0.6	4
38	Characterization of Nuclear Materials in Extreme Conditions: Raman Spectroscopy Approach. IEEE Transactions on Nuclear Science, 2014, 61, 2045-2051.	1.2	19
39	Existence of a miscibility gap in uranium neodymium oxide materials used as nuclear fuels simulants. Progress in Nuclear Energy, 2014, 72, 22-26.	1.3	5
40	Annealing of the defects observed by Raman spectroscopy in UO2 irradiated by 25MeV He2+ ions. Nuclear Instruments & Methods in Physics Research B, 2014, 327, 74-77.	0.6	22
41	Measurement of energy spectra on irradiated polycrystalline UO2 samples using secondary ion mass spectrometry. Surface and Interface Analysis, 2013, 45, 427-429.	0.8	0
42	Changes in uranium energy spectra measured by SIMS on slightly hyperâ€stoichiometric UO₂. Surface and Interface Analysis, 2013, 45, 420-422.	0.8	0
43	A possible new mechanism for defect formation in irradiated UO2. Nuclear Instruments & Methods in Physics Research B, 2013, 315, 169-172.	0.6	27
44	Evidence of tellurium iodide compounds in a power-ramped irradiated UO2 fuel rod. Journal of Nuclear Materials, 2013, 437, 409-414.	1.3	14
45	Density Functional Theory Calculations of UO₂ Oxidation: Evolution of UO_{2+x}, U₄O_{9â€“y}, U₃O₇, and U₃O₈. Inorganic Chemistry, 2013, 52, 2769-2778.	1.9	96
46	Characterization of nuclear materials in extreme conditions: The raman spectroscopy approach. , 2013, , .		0
47	Reduction of Gd6UO12 for the Synthesis of Gd6UO11. Materials Research Society Symposia Proceedings, 2013, 1514, 151-156.	0.1	0
48	In situ Raman monitoring of He2+ irradiation induced damage in a UO2 ceramic. Applied Physics Letters, 2013, 103, 041904.	1.5	33
49	Structural features in fluorite compounds relevant for nuclear applications. Materials Research Society Symposia Proceedings, 2012, 1383, 35.	0.1	1
50	Determination of in-depth damaged profile by Raman line scan in a pre-cut He2+ irradiated UO2. Applied Physics Letters, 2012, 100, .	1.5	80
51	Miscibility Gap in the Uâ€“Ndâ€“O Phase Diagram: a New Approach of Nuclear Oxides in the Environment?. Inorganic Chemistry, 2012, 51, 9147-9149.	1.9	44
52	Raman spectrum of U₄O₉: a new interpretation of damage lines in UO₂. Journal of Raman Spectroscopy, 2012, 43, 455-458.	1.2	127
53	Is UO2 irradiation resistance due to its unusual high temperature behaviour?. Journal of Nuclear Materials, 2012, 420, 334-337.	1.3	8
54	How polarons can enhance UO2 irradiation resistance?. Nuclear Instruments & Methods in Physics Research B, 2012, 277, 109-111.	0.6	5

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55	Refinement of the Î±-U₄O₉ Crystalline Structure: New Insight into the U₄O₉ â†' U₃O₈ Transformation. Inorganic Chemistry, 2011, 50, 6146-6151.	1.9	52
56	First experimental evidence by SIMS of different surface binding energies for uranium according to its oxidation state. Applied Surface Science, 2011, 257, 6208-6211.	3.1	7
57	Raman spectroscopy characterization of actinide oxides (U1âˆ'yPuy)O2: Resistance to oxidation by the laser beam and examination of defects. Journal of Nuclear Materials, 2010, 405, 235-243.	1.3	75
58	Influence of the U3O7 domain structure on cracking during the oxidation of UO2. Journal of Nuclear Materials, 2010, 402, 167-172.	1.3	20
59	Internal Interface Strains Effects on UO₂/U₃O₇ Oxidation Behaviour. Defect and Diffusion Forum, 2010, 297-301, 519-524.	0.4	6
60	In situ Characterization of UO2 Microstructure Changes During an Annealing Test in an Environmental Scanning Electron Microscope. Materials Research Society Symposia Proceedings, 2009, 1215, 1.	0.1	0
61	Deuterium inventory in Tore Supra: reconciling particle balance and post-mortem analysis. Nuclear Fusion, 2009, 49, 075011.	1.6	53
62	Neutron Diffraction Study of the Structural Changes Occurring During the Low Temperature Oxidation of UO2. Materials Research Society Symposia Proceedings, 2009, 1215, 1.	0.1	3
63	Modelling of the spent fuel oxidation: Toward the operational model. Journal of Nuclear Materials, 2009, 395, 89-98.	1.3	1
64	Synthesis and characterization of nanometric powders of UO2+x, (Th,U)O2+x and (La,U)O2+x. Journal of Solid State Chemistry, 2009, 182, 2591-2597.	1.4	29
65	On the origin of the sigmoid shape in the UO2 oxidation weight gain curves. Journal of the European Ceramic Society, 2009, 29, 2791-2798.	2.8	29
66	SIMS characterisation of actinide isotopes in irradiated nuclear fuel. Journal of Nuclear Materials, 2009, 385, 99-102.	1.3	16
67	ADAGIO technique: From UO2 fuels to MOX fuels. Journal of Nuclear Materials, 2009, 385, 137-141.	1.3	3
68	Neutron Diffraction Study of the in Situ Oxidation of UO₂. Inorganic Chemistry, 2009, 48, 7585-7592.	1.9	146
69	HIGH BURNUP CHANGES IN UO₂FUELS IRRADIATED UP TO 83 GWD/T IN M5^(R)CLADDINGS. Nuclear Engineering and Technology, 2009, 41, 155-162.	1.1	32
70	Detailed characterisations of high burn-up structures in oxide fuels. Journal of Nuclear Materials, 2008, 372, 318-339.	1.3	140
71	A method for the quantification of total xenon concentration in irradiated nuclear fuel with SIMS and EPMA. Nuclear Instruments & Methods in Physics Research B, 2008, 266, 147-154.	0.6	18
72	Study of structural material resulting from the nuclear fuel cycle using SEM-WDX, EPMA and SIMS techniques. Mikrochimica Acta, 2008, 161, 355-362.	2.5	5

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73	Evidence of two gas release kinetics during the oxidation of an irradiated PWR UO2 fuel. Journal of Nuclear Materials, 2008, 378, 1-8.	1.3	16
74	Assessment of the Nd/U ratio for the quantification of neodymium in UO2. Applied Surface Science, 2008, 255, 863-865.	3.1	3
75	Interpretation of the molybdenum behaviour in irradiated UO2 using a point defect approach. Nuclear Instruments & Methods in Physics Research B, 2008, 266, 3018-3022.	0.6	5
76	Oxygen Lattice Distortions and U Oxidation State in UO2+x Fluorite Structures. Materials Research Society Symposia Proceedings, 2008, 1124, 1.	0.1	1
77	A New Criterion for the Degradation of a Defective Spent Fuel Rod under Dry Storage Conditions Based on Nuclear Ceramic Cracking. Materials Research Society Symposia Proceedings, 2008, 1124, 1.	0.1	2
78	Behavior of a Defective Nuclear Fuel Rod in Dry Storage Conditions Studied with a New Experimental Setup. Nuclear Technology, 2008, 163, 252-260.	0.7	5
79	An improved model to evaluate the oxidation kinetics of uranium dioxide during dry storage. Journal of Nuclear Materials, 2007, 362, 402-410.	1.3	20
80	Characterisation of irradiated nuclear fuel with SIMS. Applied Surface Science, 2006, 252, 7048-7050.	3.1	14
81	Specific outcomes of the research on the spent fuel long-term evolution in interim dry storage and deep geological disposal. Journal of Nuclear Materials, 2006, 352, 246-253.	1.3	52
82	A detailed study of UO2 to U3O8 oxidation phases and the associated rate-limiting steps. Journal of Nuclear Materials, 2006, 355, 10-20.	1.3	94
83	Fission Gas Bubbles Characterisation in Irradiated UO2 Fuel by SEM, EPMA and SIMS. Mikrochimica Acta, 2006, 155, 183-187.	2.5	25
84	Modeling of Spent Fuel Oxidation at Low Temperature. Materials Research Society Symposia Proceedings, 2006, 985, 1.	0.1	1
85	Oxidation kinetics of high burn-up UOX and MOX fuel : the influence of the grain boundaries. Materials Research Society Symposia Proceedings, 2006, 932, 1.	0.1	2
86	A New Apparatus for Determination of the Free Volume of a Fuel Rod Using the Double Expansion Method. Nuclear Technology, 2005, 149, 14-21.	0.7	3
87	Electrical Conductivity and Thermoelectric Power of Uranium Dioxide. Journal of the American Ceramic Society, 2005, 88, 604-611.	1.9	54
88	Characterisation of uranium vacancies in hyper stoichiometric uranium dioxide. Journal of the European Ceramic Society, 2005, 25, 2683-2686.	2.8	8
89	Heat capacity anomaly in UO2 in the vicinity of 1300K: an improved description based on high resolution X-ray and neutron powder diffraction studies. Journal of Physics and Chemistry of Solids, 2005, 66, 823-831.	1.9	42
90	Contribution of the synchrotron diffraction study of the oxidation of uranium dioxide at 250‹sup›â—‹‹/sup›C. European Physical Journal Special Topics, 2004, 118, 127-134.	0.2	5

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91	Influence of Defect Interactions on Diffusion Processes in UO2+x: a Key Issue for Understanding the Behaviour of Spent Nuclear Fuel.. Materials Research Society Symposia Proceedings, 2004, 824, 507.	0.1	3
92	Measurement of xenon in uranium dioxide (UO2) with SIMS. Nuclear Instruments & Methods in Physics Research B, 2004, 215, 545-551.	0.6	37
93	Detection of Gas Bubble by SIMS in Irradiated Nuclear Fuel. Mikrochimica Acta, 2004, 145, 91-94.	2.5	20
94	Chemical diffusion in uranium dioxide â€“ influence of defect interactions. Journal of Nuclear Materials, 2004, 325, 202-209.	1.3	35
95	Thermal variation of the optical absorption of UO2: determination of the small polaron self-energy. Journal of Nuclear Materials, 2004, 328, 46-54.	1.3	47
96	A new shielded SIMS instrument for analysis of highly radioactive materials. Applied Surface Science, 2003, 203-204, 673-678.	3.1	23
97	Post-irradiation examinations of THERMHET composite fuels for transmutation. Journal of Nuclear Materials, 2003, 320, 117-125.	1.3	13
98	Behaviour of fission gases in an irradiated nuclear fuel under Î± external irradiation. Journal of Nuclear Materials, 2003, 321, 324-330.	1.3	3
99	A New Modelling of the Kinetics of Uranium Dioxide Oxidation in Air. Materials Research Society Symposia Proceedings, 2003, 807, 134.	0.1	1
100	Synchrotron Diffraction Study of the Isothermal Oxidation of Uranium Dioxide at 250Â°C. Materials Research Society Symposia Proceedings, 2003, 802, 3.	0.1	2
101	High magnification SEM observations for two types of granularity in a high burnup PWR fuel rim. Journal of Nuclear Materials, 1998, 257, 78-87.	1.3	45
102	Inelastic neutron scattering study of proton dynamics in Ca(OH)2 at 20 K. Chemical Physics, 1995, 197, 81-90.	0.9	14
103	Structural and thermodynamic evidence of a change in thermal motion of hydrogen atoms in Ca(OH)2 at low temperature. Journal of Physics and Chemistry of Solids, 1994, 55, 161-166.	1.9	10
104	Hydrogen thermal motion in calcium hydroxide: Ca(OH)2. Acta Crystallographica Section B: Structural Science, 1993, 49, 812-817.	1.8	115
105	Structural transformations preparing the dehydration of Ca(OH)2. Phase Transitions, 1991, 31, 283-286.	0.6	3
106	A Thermodynamic Approach of the Mechano-Chemical Coupling during the Oxidation of Uranium Dioxide. Defect and Diffusion Forum, 0, 289-292, 447-454.	0.4	9
107	Evidence of a Biphasic Domain in the UO₂-Nd₂O₃Diagram at Room Temperature: a Proof for a Miscibility Gap in UO₂-Nd₂O₃ Phase Diagram ?. Solid State Phenomena, 0, 172-174, 624-629.	0.3	7
108	Specific Aspects of Internal Corrosion of Nuclear Clad Made of Zircaloy. Defect and Diffusion Forum, 0, 323-325, 227-232.	0.4	4