Nicolas Clavier

List of Publications by Year
in descending order

118 papers	3,689 citations	117453 34 h-index	161609 54 g-index
126 all docs	126 docs citations	126 times ranked	2123 citing authors

#	Article	IF	Citations
1	Crystal chemistry of the monazite structure. Journal of the European Ceramic Society, 2011, 31, 941-976.	2.8	318
2	Versatile Monazite: Resolving geological records and solving challenges in materials science: Monazite as a promising long-term radioactive waste matrix: Benefits of high-structural flexibility and chemical durability. American Mineralogist, 2013, 98, 833-847.	0.9	151
3	Preparation and characterization of lanthanumâ€“gadolinium monazites as ceramics for radioactive waste storage. New Journal of Chemistry, 2003, 27, 957-967.	1.4	142
4	Stability and Structural Evolution of Ce^{IV}_{1â€“<i>x</i>}Ln^{III}_{<i>x</i>}O_{2â€“<i>x</i>/2} Solid Solutions: A Coupled Î¼-Raman/XRD Approach. Inorganic Chemistry, 2011, 50, 7150-7161.	1.9	109
5	Immobilisation of actinides in phosphate matrices. Comptes Rendus Chimie, 2004, 7, 1141-1152.	0.2	107
6	Occurence of an Octanuclear Motif of Uranyl Isophthalate with Cationâ€“Cation Interactions through Edge-Sharing Connection Mode. Inorganic Chemistry, 2011, 50, 6243-6249.	1.9	89
7	Actinide solubility-controlling phases during the dissolution of phosphate ceramics. Journal of Nuclear Materials, 2007, 362, 451-458.	1.3	80
8	Synthesis, Characterization, Sintering, and Leaching of Î²-TUPD/Monazite Radwaste Matrices. Inorganic Chemistry, 2006, 45, 220-229.	1.9	75
9	Thermodynamics of formation of coffinite, USiO ₄. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 6551-6555.	3.3	72
10	Multiparametric Dissolution of Thoriumâ€“Cerium Dioxide Solid Solutions. Inorganic Chemistry, 2011, 50, 11702-11714.	1.9	65
11	Monoclinic Form of the Rhabdophane Compounds: REEPO₄Â·0.667H₂O. Crystal Growth and Design, 2014, 14, 5090-5098.	1.4	61
12	X-Ray Diffraction and Î¼-Raman Investigation of the Monoclinic-Orthorhombic Phase Transition in Th_{1âˆ’<i>x</i>}U_{<i>x</i>}(C₂O₄)₂Â·2H₂O Solid Solutions. Inorganic Chemistry, 2010, 49, 1921-1931.	1.9	60
13	Influence of Crystallization State and Microstructure on the Chemical Durability of Ceriumâ€“Neodymium Mixed Oxides. Inorganic Chemistry, 2011, 50, 9059-9072.	1.9	60
14	Comparative Behavior of Britholites and Monazite/Brabantite Solid Solutions during Leaching Tests: A Combined Experimental and DFT Approach. Inorganic Chemistry, 2008, 47, 10971-10979.	1.9	56
15	Preparation, sintering and leaching of optimized uranium thorium dioxides. Journal of Nuclear Materials, 2009, 385, 400-406.	1.3	55
16	Preparation of morphology controlled Th1âˆ’xUxO2 sintered pellets from low-temperature precursors. Powder Technology, 2011, 208, 454-460.	2.1	54
17	Behavior of thoriumâ€“uranium (IV) phosphateâ€“diphosphate sintered samples during leaching tests. Part I â€“ Kinetic study. Journal of Nuclear Materials, 2006, 349, 291-303.	1.3	52
18	Environmental SEM monitoring of Ce_{1âˆ’x}Ln_xO_{2âˆ’x/2}mixed-oxide microstructural evolution during dissolution. Journal of Materials Chemistry A, 2014, 2, 5193-5203.	5.2	52

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19	Synthesis and characterization of Th1â˘'xLnxO2â˘'x/2 mixed-oxides. Materials Research Bulletin, 2012, 47, 4017-4025.	2.7	51
20	Behavior of thoriumâ€"uranium (IV) phosphateâ€"diphosphate sintered samples during leaching tests. Part II. Saturation processes. Journal of Nuclear Materials, 2006, 349, 304-316.	1.3	50
21	Preparation of Optimized Uranium and Thorium Bearing Brabantite or Monazite/Brabantite Solid Solutions. Journal of the American Ceramic Society, 2008, 91, 3673-3682.	1.9	50
22	Monazite, rhabdophane, xenotime & churchite: Vibrational spectroscopy of gadolinium phosphate polymorphs. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 2018, 205, 85-94.	2.0	49
23	Determination of the Solubility of Rhabdophanes LnPO₄Â·0.667H₂O (Ln = La to) Tj ETQq1 1 0.784314 rgBT /	1.0	47
24	Synthesis and characterization of coffinite. Journal of Nuclear Materials, 2009, 393, 449-458.	1.3	46
25	Dissolution of Cerium(IV)â€"Lanthanide(III) Oxides: Comparative Effect of Chemical Composition, Temperature, and Acidity. Inorganic Chemistry, 2012, 51, 3868-3878.	1.9	44
26	Characterization of the thorium phosphate-hydrogenphosphate hydrate (TPHPH) and study of its transformation into the thorium phosphate-diphosphate (Î²-TPD). Materials Research Bulletin, 2005, 40, 2225-2242.	2.7	43
27	Uranium removal from mining water using Cu substituted hydroxyapatite. Journal of Hazardous Materials, 2020, 392, 122501.	6.5	43
28	In pursuit of the rhabdophane crystal structure: from the hydrated monoclinic LnPO 4 .0.667H 2 O to the hexagonal LnPO 4 (Ln = Nd, Sm, Gd, Eu and Dy). Journal of Solid State Chemistry, 2017, 249, 221-227.	1.4	42
29	Crystal structures of Th(OH)PO4, U(OH)PO4 and Th2O(PO4)2. Condensation mechanism of MIV(OH)PO4 (M=Th, U) into M2O(PO4)2. Solid State Sciences, 2007, 9, 619-627.	1.5	41
30	Synthesis and characterization of uranium (IV) phosphate-hydrogenphosphate hydrate and cerium (IV) phosphate-hydrogenphosphate hydrate. Journal of Solid State Chemistry, 2005, 178, 1054-1063.	1.4	39
31	Coffinite, USiO₄, Is Abundant in Nature: So Why Is It So Difficult To Synthesize?. Inorganic Chemistry, 2015, 54, 6687-6696.	1.9	38
32	Kinetics of dissolution of thorium and uranium doped britholite ceramics. Journal of Nuclear Materials, 2010, 404, 33-43.	1.3	37
33	Calcined resin microsphere pelletization (CRMP): A novel process for sintered metallic oxide pellets. Journal of the European Ceramic Society, 2012, 32, 3199-3209.	2.8	37
34	Dissolution of Th1â˘'U O2: Effects of chemical composition and microstructure. Journal of Nuclear Materials, 2015, 457, 304-316.	1.3	35
35	First experimental determination of the solubility constant of coffinite. Geochimica Et Cosmochimica Acta, 2016, 181, 36-53.	1.6	35
36	How To Explain the Difficulties in the Coffinite Synthesis from the Study of Uranothorite?. Inorganic Chemistry, 2011, 50, 11117-11126.	1.9	33

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37	From Uranothorites to Coffinite: A Solid Solution Route to the Thermodynamic Properties of USiO₄. Inorganic Chemistry, 2013, 52, 6957-6968.	1.9	33
38	Combining in situ HT-ESEM observations and dilatometry: An original and fast way to the sintering map of ThO2. Materials Chemistry and Physics, 2013, 137, 742-749.	2.0	32
39	Sintering of Î²-Thoriumâˆ’Uranium(IV) Phosphateâˆ’Diphosphate Solid Solutions from Low-Temperature Precursors. Chemistry of Materials, 2004, 16, 3357-3366.	3.2	31
40	Energetics of a Uranothorite (Th_{1â€“<i>x</i>}U_{<i>x</i>}SiO₄) Solid Solution. Chemistry of Materials, 2016, 28, 7117-7124.	3.2	31
41	Preparation and characterisation of uranium oxides with spherical shapes and hierarchical structures. CrystEngComm, 2014, 16, 6944-6954.	1.3	30
42	Catalytic dissolution of ceria under mild conditions. Journal of Materials Chemistry, 2012, 22, 14734.	6.7	29
43	From thorite to coffinite: A spectroscopic study of Th1âˆ’xUxSiO4 solid solutions. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 2014, 118, 302-307.	2.0	29
44	Working with the ESEM at high temperature. Materials Characterization, 2019, 151, 15-26.	1.9	29
45	Triclinicâ€“Cubic Phase Transition and Negative Expansion in the Actinide IV (Th, U, Np, Pu) Diphosphates. Inorganic Chemistry, 2012, 51, 4314-4322.	1.9	27
46	Preparation and characterization of synthetic Th0.5U0.5SiO4 uranothorite. Progress in Nuclear Energy, 2012, 57, 155-160.	1.3	27
47	From in Situ HT-ESEM Observations to Simulation: How Does Polycrystallinity Affects the Sintering of CeO₂ Microspheres?. Journal of Physical Chemistry C, 2016, 120, 386-395.	1.5	27
48	Thermodynamics and Stability of Rhabdophanes, Hydrated Rare Earth Phosphates REPO4 Â· n H2O. Frontiers in Chemistry, 2018, 6, 604.	1.8	27
49	Dynamic aspects of cerium dioxide sintering: HT-ESEM study of grain growth and pore elimination. Journal of the European Ceramic Society, 2012, 32, 353-362.	2.8	26
50	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
51	Synthesis, Raman and Rietveld analysis of thorium diphosphate. Journal of Solid State Chemistry, 2008, 181, 3352-3356.	1.4	25
52	An original precipitation route toward the preparation and the sintering of highly reactive uranium cerium dioxide powders. Journal of Nuclear Materials, 2015, 462, 173-181.	1.3	25
53	From uranium(IV) oxalate to sintered UO 2 : Consequences of the powders' thermal history on the microstructure. Journal of the European Ceramic Society, 2015, 35, 4535-4546.	2.8	25
54	High-temperature electron microscopy study of ThO 2 microspheres sintering. Journal of the European Ceramic Society, 2017, 37, 727-738.	2.8	25

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55	Dissolution kinetics of monazite LnPO4 (Ln = La to Gd): A multiparametric study. Applied Geochemistry, 2018, 93, 81-93.	1.4	25
56	Effect of powder morphology on sintering kinetics, microstructure and mechanical properties of monazite ceramics. Journal of the European Ceramic Society, 2018, 38, 227-234.	2.8	25
57	Tetrameric entity resulting from two distinct dinuclear uranyl-centered motifs bridged through Î¼2-OH and pyridazine-3,6-dicarboxylate. Inorganic Chemistry Communication, 2011, 14, 429-432.	1.8	24
58	<i>In Situ </i><scp>HT</scp>â€‹<scp>ESEM</scp> Observation of <scp><scp>CeO</scp></scp>₂ Grain Growth During Sintering. Journal of the American Ceramic Society, 2012, 95, 3683-3690.	1.9	24
59	Hydrothermal Conversion of Uranium(IV) Oxalate into Oxides: A Comprehensive Study. Inorganic Chemistry, 2020, 59, 3260-3273.	1.9	24
60	Solubility properties of synthetic and natural meta-torbernite. Journal of Nuclear Materials, 2013, 442, 195-207.	1.3	23
61	Improvement of the preparation of sintered pellets of thorium phosphate-diphosphate and associated solid solutions from crystallized precursors. Journal of Nuclear Materials, 2006, 352, 209-216.	1.3	22
62	Multiparametric study of Th1â^'xLnxO2â^'x/2 mixed oxides dissolution in nitric acid media. Journal of Nuclear Materials, 2012, 429, 237-244.	1.3	22
63	High-temperature behavior of dicesium molybdate Cs2MoO4: Implications for fast neutron reactors. Journal of Solid State Chemistry, 2014, 215, 225-230.	1.4	22
64	Synthesis and characterization of low-temperature precursors of thoriumâ€“uranium (IV) phosphateâ€“diphosphate solid solutions. Journal of Nuclear Materials, 2004, 335, 397-409.	1.3	21
65	Vibrational spectroscopy of synthetic analogues of ankoleite, chernikovite and intermediate solid solution. Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy, 2016, 156, 143-150.	2.0	21
66	Synthesis of size-controlled UO2 microspheres from the hydrothermal conversion of U(iv) aspartate. CrystEngComm, 2018, 20, 7749-7760.	1.3	21
67	Charge compensation mechanisms in Nd-doped UO2 samples for stoichiometric and hypo-stoichiometric conditions: Lack of miscibility gap. Journal of Nuclear Materials, 2020, 539, 152276.	1.3	21
68	Structural and thermodynamic study of dicesium molybdate Cs2Mo2O7: Implications for fast neutron reactors. Journal of Solid State Chemistry, 2017, 253, 89-102.	1.4	20
69	Synthesis, Crystal Structure, and Enthalpies of Formation of Churchite-type REPO₄Â·2H₂O (RE = Gd to Lu) Materials. Crystal Growth and Design, 2019, 19, 4641-4649.	1.4	20
70	Preparation, characterization and sintering of yttrium-doped ThO2 for oxygen sensors applications. Journal of Alloys and Compounds, 2016, 689, 374-382.	2.8	19
71	Thorium aspartate tetrahydrate precursor to ThO 2 : Comparison of hydrothermal and thermal conversions. Journal of Nuclear Materials, 2017, 487, 331-342.	1.3	19
72	Dilatometric study of U1â^'xAmxO2Â±Î´ and U1â^'xCexO2Â±Î´ reactive sintering. Journal of Nuclear Materials, 2013, 441, 40-46.	1.3	18

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73	In situ HT-ESEM study of crystallites growth within CeO2 microspheres. Ceramics International, 2015, 41, 14703-14711.	2.3	18
74	Incorporation of Thorium in the Zircon Structure Type through the Th_{1â€“<i>x</i>}Er_{<i>x</i>}(SiO₄)_{1â€“<i>x</i>}(PO₄)<sub><i>x</i></sub Thoriteâ€“Xenotime Solid Solution. Inorganic Chemistry, 2016, 55, 11273-11282.	1.9	18
75	The Role of Water and Hydroxyl Groups in the Structures of Stetindite and Coffinite, MSiO₄ (M = Ce, U). Inorganic Chemistry, 2021, 60, 718-735.	1.9	18
76	From thorium phosphate hydrogenphosphate hydrate to Î²-thorium phosphate diphosphate: Structural evolution to a radwaste storage ceramic. Journal of Solid State Chemistry, 2006, 179, 3007-3016.	1.4	17
77	Purification of uranothorite solid solutions from polyphase systems. Journal of Nuclear Materials, 2013, 441, 73-83.	1.3	17
78	The effect of the synthesis route of monazite precursors on the microstructure of sintered pellets. Progress in Nuclear Energy, 2016, 92, 298-305.	1.3	17
79	Kinetics of Structural and Microstructural Changes at the Solid/Solution Interface during Dissolution of Cerium(IV)â€“Neodymium(III) Oxides. Journal of Physical Chemistry C, 2012, 116, 12027-12037.	1.5	16
80	Dissolution of uranium mixed oxides: The role of oxygen vacancies vs the redox reactions. Progress in Nuclear Energy, 2014, 72, 101-106.	1.3	16
81	Hydrothermal Method of Preparation of Actinide(IV) Phosphate Hydrogenphosphate Hydrates and Study of Their Conversion into Actinide(IV) Phosphate Diphosphate Solid Solutions. Inorganic Chemistry, 2007, 46, 10390-10399.	1.9	15
82	Negative thermal expansion in Th2O(PO4)2. Materials Research Bulletin, 2011, 46, 1777-1780.	2.7	14
83	Densification behavior and microstructure evolution of yttrium-doped ThO 2 ceramics. Journal of the European Ceramic Society, 2017, 37, 3381-3391.	2.8	14
84	Incorporation of thorium in the rhabdophane structure: Synthesis and characterization of Pr 1-2x Ca x Th x PO 4 Â·nH 2 O solid solutions. Journal of Nuclear Materials, 2017, 492, 88-96.	1.3	14
85	Oxidation as an Early Stage in the Multistep Thermal Decomposition of Uranium(IV) Oxalate into U3O8. Inorganic Chemistry, 2020, 59, 8589-8602.	1.9	14
86	Hydrothermal Conversion of Thorium Oxalate into ThO₂Â·<i>n</i>H₂O Oxide. Inorganic Chemistry, 2020, 59, 14954-14966.	1.9	13
87	Direct synthesis of pure brannerite UTi2O6. Journal of Nuclear Materials, 2019, 515, 401-406.	1.3	12
88	Reaction sintering of rhabdophane into monazite-cheralite Nd1-2xThxCaxPO4 (x = 0 â€“ 0.1) ceramics. Journal of the European Ceramic Society, 2020, 40, 911-922.	2.8	11
89	Catalytic dissolution of ceriaâ€“lanthanide mixed oxides provides environmentally friendly partitioning of lanthanides and platinum. Hydrometallurgy, 2015, 151, 107-115.	1.8	10
90	The Flexible Ba₇UM₂S_{12.5}O_{0.5} (M = V, Fe) Compounds: Syntheses, Structures and Spectroscopic, Resistivity, and Electronic Properties. Inorganic Chemistry, 2013, 52, 12057-12063.	1.9	9

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91	Novel approaches for the <i>in situ</i> study of the sintering of nuclear oxide fuel materials and their surrogates. Radiochimica Acta, 2017, 105, 879-892.	0.5	9
92	From Th-Rhabdophane to Monazite-Cheralite Solid Solutions: Thermal Behavior of Nd_{1â€“2<i>x</i>}Th_{<i>x</i>}Ca_{<i>x</i>}PO₄Â·<i>n</i>H₂O (<i>x</i> = 0â€“0.15). Crystal Growth and Design, 2019, 19, 2794-2801.	1.4	9
93	Determination of the isotopic composition of single subâ€micrometerâ€sized uranium particles by laser ablation coupled with multiâ€collector inductively coupled plasma mass spectrometry. Rapid Communications in Mass Spectrometry, 2019, 33, 419-428.	0.7	9
94	Effect of hydration and thermal treatment on ceria surface using non-intrusive techniques. Journal of Nuclear Materials, 2014, 444, 359-367.	1.3	8
95	Chemical and mineralogical modifications of simplified radioactive waste calcine during heat treatment. Journal of Nuclear Materials, 2014, 448, 8-19.	1.3	8
96	Solubility product of the thorium phosphate hydrogen-phosphate hydrate (Th 2 (PO 4) 2 (HPO 4)Â·H 2) Tj ETQq0 0 0 rgBT /Overlock 10	1.0	7
97	Sintering of a UO2-PuO2 freeze-granulated powder under reducing conditions. Journal of the European Ceramic Society, 2020, 40, 5900-5908.	2.8	6
98	A multiscale <i>in situ</i> high temperature high resolution transmission electron microscopy study of ThO₂ sintering. Nanoscale, 2021, 13, 7362-7374.	2.8	6
99	SEraMic: A semi-automatic method for the segmentation of grain boundaries. Journal of the European Ceramic Society, 2021, 41, 5349-5358.	2.8	6
100	Investigation in thorium phosphate by NMR II-phosphorus dipolar networks. Solid State Nuclear Magnetic Resonance, 2006, 29, 294-304.	1.5	5
101	Impact of the cationic homogeneity on Th0.5U0.5O2 densification and chemical durability. Journal of Nuclear Materials, 2019, 514, 368-379.	1.3	5
102	Early stages of UO2+x sintering by in situ high-temperature environmental scanning electron microscopy. Journal of the European Ceramic Society, 2020, 40, 5891-5899.	2.8	5
103	Structural and thermodynamic study of Cs3Na(MoO4)2: Margin to the safe operation of sodium cooled fast reactors. Journal of Solid State Chemistry, 2019, 269, 1-8.	1.4	4
104	Impact of liquid sodium corrosion on microstructure and electrical properties of yttrium-doped thoria prepared by co-precipitation. Corrosion Science, 2020, 171, 108721.	3.0	4
105	Synthesis and Direct Sintering of Nanosized (M^{IV},M^{III})O_{2â€‹<i>x</i>} Hydrated Oxides as Electrolyte Ceramics. ChemPhysChem, 2017, 18, 2666-2674.	1.0	3
106	Influence of the PuO2 content on the sintering behaviour of UO2-PuO2 freeze-granulated powders under reducing conditions. Journal of the European Ceramic Society, 2021, 41, 6778-6783.	2.8	3
107	Direct sintering of UO2+x oxides prepared under hydrothermal conditions. Journal of the European Ceramic Society, 2021, 41, 6697-6707.	2.8	3
108	Study of Actinides Incorporation in Thorium Phosphate-Diphosphate/Monazite Based Ceramics. Materials Research Society Symposia Proceedings, 2003, 802, 111.	0.1	2

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109	Hydrothermal Methods as a New Way of Actinide Phosphate Preparation. Materials Research Society Symposia Proceedings, 2006, 985, 1.	0.1	2
110	Structural changes of Nd- and Ce-doped ammonium diuranate microspheres during the conversion to U1âˆ'LnO2Â±. Journal of Nuclear Materials, 2020, 542, 152454.	1.3	2
111	Effect of Annealing on Structural and Thermodynamic Properties of ThSiO₄-ErPO₄ Xenotime Solid Solution. Inorganic Chemistry, 2021, 60, 12020-12028.	1.9	2
112	Impact of impurities on the fabrication and performances of yttrium-doped thoria electrolyte ceramics. Journal of Nuclear Materials, 2022, 560, 153499.	1.3	2
113	Structural and Thermodynamic Investigation of the Perovskite Ba₂NaMoO_{5.5}. Inorganic Chemistry, 2020, 59, 6120-6130.	1.9	1
114	Investigation in hydrated thorium phosphates by NMR I-relation proton phosphorus. Solid State Nuclear Magnetic Resonance, 2006, 30, 29-44.	1.5	0
115	Kinetic and Thermodynamic Study of the Chemistry of Neoformed Phases during the Dissolution of Phosphate Based Ceramics. Materials Research Society Symposia Proceedings, 2006, 985, 1.	0.1	0
116	Separation of uranium(VI) from tri- and tetravalent elements in phosphoric acid solutions. Radiochimica Acta, 2006, 94, .	0.5	0
117	In Situ Study of CeO2 Microspheres Sintering Using HT-ESEM. Microscopy and Microanalysis, 2016, 22, 62-63.	0.2	0
118	First Stage of Sintering of ThO2 Microspheres: a HT-ESEM and HT-HRTEM Study. Microscopy and Microanalysis, 2019, 25, 49-50.	0.2	0