Ricardo H R Castro

List of Publications by Citations

122 papers	2,388 citations	29 h-index	40 g-index
133 ext. papers	2,752 ext. citations	4.8 avg, IF	5.53 L-index

#	Paper	IF	Citations
122	Surface Segregation and Consequent SO2 Sensor Response in SnO2–NiO. *Chemistry of Materials*, **2005**, 17, 4149-4153	9.6	108
121	Surface Energy and Thermodynamic Stability of γ-Alumina: Effect of Dopants and Water. *Chemistry of Materials*, **2006**, 18, 1867-1872	9.6	84
120	Microstructure and structure of NiO–SnO2 and Fe2O3–SnO2 systems. *Applied Surface Science*, **2003**, 214, 172-177	6.7	80
119	Analysis of Anhydrous and Hydrated Surface Energies of gamma-Al2O3 by Water Adsorption Microcalorimetry. *Journal of Physical Chemistry C*, **2012**, 116, 24726-24733	3.8	67
118	On the thermodynamic stability of nanocrystalline ceramics. *Materials Letters*, **2013**, 96, 45-56	3.3	66
117	Calorimetric Measurement of Surface and Interface Enthalpies of Yttria-Stabilized Zirconia (YSZ). *Chemistry of Materials*, **2010**, 22, 2937-2945	9.6	59
116	Sintering and Nanostability: The Thermodynamic Perspective. *Journal of the American Ceramic Society*, **2016**, 99, 1105-1121	3.8	57
115	Radiation tolerance of nanocrystalline ceramics: insights from Yttria Stabilized Zirconia. *Scientific Reports*, **2015**, 5, 7746	4.9	56
114	Surface Segregation on Manganese Doped Ceria Nanoparticles and Relationship with Nanostability. *Journal of Physical Chemistry C*, **2014**, 118, 30187-30196	3.8	52
113	Colossal grain boundary strengthening in ultrafine nanocrystalline oxides. *Materials Letters*, **2017**, 186, 298-300	3.3	48
112	Surface Segregation in SnO2–Fe2O3 Nanopowders and Effects in Mössbauer Spectroscopy. *European Journal of Inorganic Chemistry*, **2005**, 2005, 2134-2138	2.3	48
111	Interface Energy Measurement of MgO and ZnO: Understanding the Thermodynamic Stability of Nanoparticles. *Chemistry of Materials*, **2010**, 22, 2502-2509	9.6	44
110	Densification and electrical conductivity of fast fired manganese-doped ceria ceramics. *Materials Letters*, **2005**, 59, 1195-1199	3.3	44
109	Surface segregation of additives on SnO2 based powders and their relationship with macroscopic properties. *Applied Surface Science*, **2002**, 195, 277-283	6.7	43
108	Synthesis and Sintering Behavior of Ultrafine (. *Journal of the American Ceramic Society*, **2013**, 96, 2077-2085	3.8	42
107	Phase Stability in Nanocrystals: A Predictive Diagram for Yttria–Zirconia. *Journal of the American Ceramic Society*, **2015**, 98, 1377-1384	3.8	41
106	The Hidden Effect of Interface Energies in the Polymorphic Stability of Nanocrystalline Titanium Dioxide. *Journal of the American Ceramic Society*, **2011**, 94, 918-924	3.8	41

105	Quantification of MgO surface excess on the SnO2 nanoparticles and relationship with nanostability and growth. *Applied Surface Science*, **2011**, 257, 4219-4226	6.7	41
104	Water Adsorption Microcalorimetry Model: Deciphering Surface Energies and Water Chemical Potentials of Nanocrystalline Oxides. *Journal of Physical Chemistry C*, **2014**, 118, 10131-10142	3.8	39
103	Structural and magnetic properties of pure and nickel doped SnO2 nanoparticles. *Journal of Physics Condensed Matter*, **2010**, 22, 496003	1.8	38
102	Surface modification of SnO2 nanoparticles containing Mg or Fe: Effects on sintering. *Applied Surface Science*, **2007**, 253, 4581-4585	6.7	35
101	Thermodynamic Stability of SnO2 Nanoparticles: The Role of Interface Energies and Dopants. *Journal of Physical Chemistry C*, **2015**, 119, 6389-6397	3.8	34
100	Interface Energies of Nanocrystalline Doped Ceria: Effects of Manganese Segregation. *Journal of Physical Chemistry C*, **2015**, 119, 27855-27864	3.8	32
99	Experimental Methodologies for Assessing the Surface Energy of Highly Hygroscopic Materials: The Case of Nanocrystalline Magnesia. *Journal of Physical Chemistry C*, **2011**, 115, 23929-23935	3.8	32
98	Surface enthalpy and enthalpy of water adsorption of nanocrystalline tin dioxide: Thermodynamic insight on the sensing activity. *Journal of Materials Research*, **2011**, 26, 848-853	2.5	32
97	Transparent Nanocrystalline Pure and Ca-Doped MgO by Spark Plasma Sintering of Anhydrous Nanoparticles. *Journal of the American Ceramic Society*, **2012**, 95, 1185-1188	3.8	30
96	Sintering: the role of interface energies. *Applied Surface Science*, **2003**, 217, 194-201	6.7	30
95	Photocatalytic Nb2O5-doped TiO2 nanoparticles for glazed ceramic tiles. *Ceramics International*, **2016**, 42, 5113-5122	5.1	29
94	Structure and segregation of dopant-defect complexes at grain boundaries in nanocrystalline doped ceria. *Physical Chemistry Chemical Physics*, **2015**, 17, 15375-85	3.6	29
93	Interface Excess and Polymorphic Stability of Nanosized Zirconia-Magnesia. *Chemistry of Materials*, **2008**, 20, 3505-3511	9.6	29
92	Grain growth resistant nanocrystalline zirconia by targeting zero grain boundary energies. *Journal of Materials Research*, **2015**, 30, 2991-3002	2.5	27
91	Surface energy effects on the stability of anatase and rutile nanocrystals: A predictive diagram for Nb2O5-doped-TiO2. *Applied Surface Science*, **2017**, 393, 103-109	6.7	27
90	Obtaining highly dense YSZ nanoceramics by pressureless, unassisted sintering. *International Materials Reviews*, **2015**, 60, 353-375	16.1	27
89	Direct measurement of grain boundary enthalpy of cubic yttria-stabilized zirconia by differential scanning calorimetry. *Journal of Applied Physics*, **2012**, 112, 083527	2.5	26
88	Thermodynamics versus kinetics of grain growth control in nanocrystalline zirconia. *Acta Materialia*, **2017**, 136, 224-234	8.4	25

87	Nanocrystalline yttria-doped zirconia sintered by fast firing. *Materials Letters*, **2016**, 166, 196-200	3.3	24
86	Experimental study of the structural, microscopy and magnetic properties of Ni-doped SnO2 nanoparticles. *Journal of Non-Crystalline Solids*, **2010**, 356, 2960-2964	3.9	23
85	Relationship between surface segregation and rapid propane electrical response in Cd-doped SnO2 nanomaterials. *Sensors and Actuators B: Chemical*, **2008**, 133, 263-269	8.5	23
84	Stabilization of MgAl2O4 spinel surfaces via doping. *Surface Science*, **2016**, 649, 138-145	1.8	23
83	Reduced grain boundary energies in rare-earth doped MgAl2O4 spinel and consequent grain growth inhibition. *Journal of the European Ceramic Society*, **2017**, 37, 4043-4050	6	22
82	Improving the Thermodynamic Stability of Aluminate Spinel Nanoparticles with Rare Earths. *Chemistry of Materials*, **2016**, 28, 5163-5171	9.6	22
81	Phase Stability in Calcia-Doped Zirconia Nanocrystals. *Journal of the American Ceramic Society*, **2016**, 99, 1778-1785	3.8	21
80	Direct measurements of quasi-zero grain boundary energies in ceramics. *Journal of Materials Research*, **2017**, 32, 166-173	2.5	20
79	Water adsorption and interface energetics of zinc aluminate spinel nanoparticles: Insights on humidity effects on nanopowder processing and catalysis. *Journal of Materials Research*, **2013**, 28, 2004-2011	2.5	20
78	Kinetics and thermodynamics of densification and grain growth: Insights from lanthanum doped zirconia. *Acta Materialia*, **2018**, 150, 394-402	8.4	19
77	Surface and grain boundary energies of tin dioxide at low and high temperatures and effects on densification behavior. *Journal of Materials Research*, **2014**, 29, 1034-1046	2.5	19
76	Irradiation-induced grain growth and defect evolution in nanocrystalline zirconia with doped grain boundaries. *Physical Chemistry Chemical Physics*, **2016**, 18, 16921-9	3.6	18
75	Energetic design of grain boundary networks for toughening of nanocrystalline oxides. *Journal of the European Ceramic Society*, **2018**, 38, 4260-4267	6	18
74	High temperature activation of hematite nanorods for sunlight driven water oxidation reaction. *Physical Chemistry Chemical Physics*, **2017**, 19, 25025-25032	3.6	18
73	Synthesis of stoichiometric nickel aluminate spinel nanoparticles. *American Mineralogist*, **2015**, 100, 652-657	2.5	17
72	Grain boundary energy, disordering energy and grain growth kinetics in nanocrystalline MgAl2O4 spinel. *Acta Materialia*, **2018**, 149, 302-311	8.4	17
71	Mechanical properties of individual MgAl2O4 agglomerates and their effects on densification. *Acta Materialia*, **2014**, 69, 187-195	8.4	17
70	Kinetic and thermodynamic effects of manganese as a densification aid in yttria-stabilized zirconia. *Journal of the European Ceramic Society*, **2018**, 38, 1750-1759	6	16

69	Aluminum enhances photochemical charge separation in strontium titanate nanocrystal photocatalysts for overall water splitting. *Journal of Materials Chemistry A*, **2018**, 6, 16170-16176	13	16
68	Influence of the acidBasic character of oxide surfaces in dispersants effectiveness. *Ceramics International*, **2004**, 30, 2215-2221	5.1	16
67	The influence of the Chitosan adsorption on the stability of SnO2 suspensions. *Journal of the European Ceramic Society*, **2003**, 23, 897-903	6	16
66	Energetics of Oriented Attachment of Mn-Doped SnO2 Nanoparticles. *Journal of Physical Chemistry C*, **2015**, 119, 20662-20672	3.8	15
65	Size-Induced Structural Disorder Enables Ultrahard Oxides. *Journal of Physical Chemistry C*, **2017**, 121, 13898-13905	3.8	14
64	TiO2Surface Engineering to Improve Nanostability: The Role of Interface Segregation. *Journal of Physical Chemistry C*, **2019**, 123, 4949-4960	3.8	14
63	Design of Desintering in Tin Dioxide Nanoparticles. *Chemistry of Materials*, **2013**, 25, 4262-4268	9.6	14
62	Direct measurement of interface energies of magnesium aluminate spinel and a brief sintering analysis. *Journal of the European Ceramic Society*, **2017**, 37, 4051-4058	6	13
61	Simultaneous segregation of lanthanum to surfaces and grain boundaries in MgAl2O4 nanocrystals. *Applied Surface Science*, **2020**, 529, 147145	6.7	13
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59	Effects of concurrent grain boundary and surface segregation on the final stage of sintering: the case of Lanthanum doped yttria-stabilized zirconia. *Journal of Materials Science and Technology*, **2017**, 33, 251-260	9.1	12
58	Calorimetric Measurements of Surface Energy of Amorphous HfO2 Nanoparticles Produced by Gas Phase Condensation. *Journal of Physical Chemistry C*, **2017**, 121, 10392-10397	3.8	11
57	Annealing control of hydrothermally grown hematite nanorods: Implication of structural changes and Cl concentration on weak ferromagnetism. *Journal of Alloys and Compounds*, **2019**, 799, 83-88	5.7	11
56	Response to Extreme Temperatures of Mesoporous Silica MCM-41: Porous Structure Transformation Simulation and Modification of Gas Adsorption Properties. *Langmuir*, **2016**, 32, 11422-11431	4	11
55	Synthesis of Ca-doped spinel by Ultrasonic Spray Pyrolysis. *Materials Letters*, **2016**, 171, 232-235	3.3	11
54	Surface Segregation in Chromium-Doped Nanocrystalline Tin Dioxide Pigments. *Journal of the American Ceramic Society*, **2012**, 95, 170-176	3.8	11
53	A model for direct and inverse Hall-Petch relation for nanocrystalline ceramics. *Materials Letters*, **2020**, 260, 126886	3.3	11
52	The Nanocrystalline SnO2TiO2 System-Part II: Surface Energies and Thermodynamic Stability. *Journal of the American Ceramic Society*, **2016**, 99, 638-644	3.8	11

51	Temperature Dependence Discontinuity in the Stability of Manganese-Doped Ceria Nanocrystals. *Crystal Growth and Design*, **2017**, 17, 446-453	3.5	10
50	Phase stability in scandia-zirconia nanocrystals. *Journal of the American Ceramic Society*, **2017**, 100, 2199-2208	3.8	10
49	Surface reactivity and electrophoretic deposition of ZrO2/MgO mechanical mixture. *Journal of Materials Science*, **2007**, 42, 6946-6950	4.3	10
48	The Nanocrystalline SnO2/TiO2 System: Part I: Structural Features. *Journal of the American Ceramic Society*, **2016**, 99, 631-637	3.8	10
47	Sintering of translucent and single-phase nanostructured scandia-stabilized zirconia. *Materials Letters*, **2019**, 253, 246-249	3.3	9
46	Grain boundary strengthening in nanocrystalline zinc aluminate. *Journal of the American Ceramic Society*, **2019**, 102, 6904-6912	3.8	9
45	Controlling sintering and grain growth of nanoceramics. *Ceramica*, **2019**, 65, 122-129	1	9
44	Gas adsorption properties of ZSM-5 zeolites heated to extreme temperatures. *Ceramics International*, **2016**, 42, 15423-15431	5.1	9
43	DC Electric Field-Enhanced Grain-Boundary Mobility in Magnesium Aluminate During Annealing. *Journal of the American Ceramic Society*, **2016**, 99, 1951-1959	3.8	9
42	In Situ Transmission Electron Microscopy for Ultrahigh Temperature Mechanical Testing of ZrO. *Nano Letters*, **2020**, 20, 1041-1046	11.5	9
41	Modeling the grain growth kinetics of doped nearly fully dense nanocrystalline ceramics. *Ceramics International*, **2017**, 43, 6677-6683	5.1	8
40	Site Inversion Induces Thermodynamic Stability against Coarsening in Zinc Aluminate Spinel. *Journal of Physical Chemistry C*, **2019**, 123, 8818-8826	3.8	8
39	Energetics of CO and HO adsorption on alkaline earth metal doped TiO. *Physical Chemistry Chemical Physics*, **2020**, 22, 15600-15607	3.6	8
38	Modeling the final sintering stage of doped ceramics: mutual interaction between grain growth and densification. *Journal of Materials Science*, **2018**, 53, 1680-1698	4.3	8
37	Enhanced electrical conduction in aluminum wires coated with carbon nanotubes. *Materials Letters*, **2011**, 65, 271-274	3.3	8
36	The rheological behavior and surface charging of gelcasting alumina suspensions. *Ceramics International*, **2008**, 34, 237-241	5.1	8
35	Engineering surface and electrophoretic deposition of SiC powder. *Materials Letters*, **2001**, 50, 115-119	3.3	8
34	Improving Thermodynamic Stability of nano-LiMn2O4 for Li-Ion Battery Cathode. *Chemistry of Materials*, **2021**, 33, 3915-3925	9.6	8

33	Stability of rare-earth-doped spherical yttria-stabilized zirconia synthesized by ultrasonic spray pyrolysis. *Journal of the American Ceramic Society*, **2017**, 100, 4425-4434	3.8	6
32	Atomistic modeling of La doping segregation effect on nanocrystalline yttria-stabilized zirconia. *Physical Chemistry Chemical Physics*, **2018**, 20, 13215-13223	3.6	6
31	Effect of ammonia on the agglomeration of zirconia nanoparticles during synthesis, and sintering by spark plasma sintering. *Materials Letters*, **2016**, 183, 143-146	3.3	6
30	Thermodynamics and kinetics of sintering of Y2O3. *Journal of the American Ceramic Society*, **2020**, 103, 4903-4912	3.8	5
29	Synthesis, size reduction, and delithiation of carbonate-free nanocrystalline lithium nickel oxide. *Journal of Materials Science*, **2013**, 48, 1740-1745	4.3	5
28	Electrophoretic deposition of ZrO2–Y2O3: a bi-component study concerning self-assemblies. *Journal of Materials Science*, **2009**, 44, 1851-1857	4.3	5
27	A Strategy to Mitigate Grain Boundary Blocking in Nanocrystalline Zirconia. *Journal of Physical Chemistry C*, **2018**, 122, 26344-26352	3.8	5
26	Enthalpies of formation in the scandia-zirconia system. *Journal of the American Ceramic Society*, **2017**, 100, 4270-4275	3.8	4
25	Synthesis of porous yttria-stabilized zirconia microspheres by ultrasonic spray pyrolysis. *Materials Letters*, **2017**, 188, 41-44	3.3	4
24	Effect of segregation on particle size stability and SPS sintering of Li2O-Doped magnesium aluminate spinel. *Journal of the European Ceramic Society*, **2019**, 39, 3213-3220	6	4
23	The effect of electric fields on grain growth in MgAl2O4 spinel. *Journal of the European Ceramic Society*, **2018**, 38, 5512-5518	6	4
22	Determination of Reliable Grain Boundary Orientation using Automated Crystallographic Orientation Mapping in the Transmission Electron Microscope. *Microscopy and Microanalysis*, **2015**, 21, 1663-1664	0.5	4
21	Local Current-Activated Growth of Individual Nanostructures with High Aspect Ratios. *Materials Research Letters*, **2014**, 2, 10-15	7.4	4
20	Microstructural effects of Sn addition to Fe2O3 thin films. *Journal of Nanoscience and Nanotechnology*, **2010**, 10, 1338-42	1.3	4
19	Thermodynamic Strengthening of Heterointerfaces in Nanoceramics. *Chemistry of Materials*, **2016**, 28, 2897-2901	9.6	4
18	Low-temperature sintering of magnesium aluminate spinel doped with manganese: Thermodynamic and kinetic aspects. *Journal of the American Ceramic Society*, **2020**, 103, 4167-4177	3.8	4
17	New ultrasonic assisted co-precipitation for high surface area oxide based nanostructured materials. *Reaction Chemistry and Engineering*, **2018**, 3, 244-250	4.9	3
16	Surface modification of bovine bone ash prepared by milling and acid washing process. *Ceramics International*, **2009**, 35, 3043-3049	5.1	3

15	Ultrahigh temperature in situ transmission electron microscopy based bicrystal coble creep in zirconia I: Nanowire growth and interfacial diffusivity. *Acta Materialia*, **2020**, 199, 530-541	8.4	3
14	Interfacial energies in nanocrystalline complex oxides. *Current Opinion in Solid State and Materials Science*, **2021**, 25, 100911	12	3
13	Ultrahigh temperature in situ transmission electron microscopy based bicrystal coble creep in Zirconia II: Interfacial thermodynamics and transport mechanisms. *Acta Materialia*, **2020**, 200, 1008-1021	8.4	2
12	Synthesis and surface enthalpy of MgGa2O4 spinel. *Thermochimica Acta*, **2017**, 655, 326-330	2.9	2
11	Size-induced grain boundary energy increase may cause softening of nanocrystalline yttria-stabilized zirconia. *Journal of the American Ceramic Society*, **2020**, 103, 2001-2011	3.8	2
10	The influence of dopants on the surface enthalpy of Yttrium aluminum garnet (YAG). *Thermochimica Acta*, **2020**, 683, 178471	2.9	2
9	Size-induced room temperature softening of nanocrystalline yttria stabilized zirconia. *Journal of the European Ceramic Society*, **2020**, 40, 2050-2055	6	1
8	Fast firing of bismuth doped yttria-stabilized zirconia for enhanced densification and ionic conductivity. *Journal of the Ceramic Society of Japan*, **2016**, 124, 370-374	1	1
7	Experimental phase diagram for beryllium-magnesium aluminate nanoparticles. *Ceramics International*, **2020**, 46, 2703-2708	5.1	0
6	Probing the Structure and Mechanical Properties of Individual MgAl2O4 Porous Agglomerates and Their Effects on Densification. *Microscopy and Microanalysis*, **2014**, 20, 1450-1451	0.5	
5	Nanodiffraction Characterization of Grain Boundary Structures in Nanocrystalline MgAl2O4 prepared by Electric Field Assisted Sintering. *Microscopy and Microanalysis*, **2014**, 20, 1936-1937	0.5	
4	Influence of Ti4+ on the Energetics and Microstructure of SnO2 Nanoparticles. *Ceramic Engineering and Science Proceedings*, **2015**, 145-152	0.1	
3	Deposition of Carbon Nanotubes on Silicon for Field Emission Application. *ECS Transactions*, **2009**, 23, 135-141	1	
2	A new method for obtaining adsorption isotherms on colloidal suspensions via electrokinetic sonic amplitude measurement. *Langmuir*, **2005**, 21, 11645-50	4	
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