Paula M Abdala

List of Publications by Year
in descending order

74 papers	3,622 citations	172457 29 h-index	133252 59 g-index
90 all docs	90 docs citations	90 times ranked	4393 citing authors

#	Article	IF	Citations
1	Cooperativity and Dynamics Increase the Performance of NiFe Dry Reforming Catalysts. Journal of the American Chemical Society, 2017, 139, 1937-1949.	13.7	322
2	Single Site Cobalt Substitution in 2D Molybdenum Carbide (MXene) Enhances Catalytic Activity in the Hydrogen Evolution Reaction. Journal of the American Chemical Society, 2019, 141, 17809-17816.	13.7	259
3	Tailoring Lattice Oxygen Binding in Ruthenium Pyrochlores to Enhance Oxygen Evolution Activity. Journal of the American Chemical Society, 2020, 142, 7883-7888.	13.7	210
4	Structural Evolution and Dynamics of an In₂O₃Catalyst for CO₂Hydrogenation to Methanol: An Operando XAS-XRD and In Situ TEM Study. Journal of the American Chemical Society, 2019, 141, 13497-13505.	13.7	204
5	Highly Active and Stable Iridium Pyrochlores for Oxygen Evolution Reaction. Chemistry of Materials, 2017, 29, 5182-5191.	6.7	172
6	Integrated CO₂ Capture and Conversion as an Efficient Process for Fuels from Greenhouse Gases. ACS Catalysis, 2018, 8, 2815-2823.	11.2	168
7	Engineering the Cu/Mo2CTx (MXene) interface to drive CO2 hydrogenation to methanol. Nature Catalysis, 2021, 4, 860-871.	34.4	138
8	Dry-reforming of methane over bimetallic Niâ€“M/La2O3 (M = Co, Fe): The effect of the rate of La2O2CO3 formation and phase stability on the catalytic activity and stability. Journal of Catalysis, 2016, 343, 208-214.	6.2	131
9	Modern X-ray spectroscopy: XAS and XES in the laboratory. Coordination Chemistry Reviews, 2020, 423, 213466.	18.8	112
10	Polyhedral CeO₂ Nanoparticles: Size-Dependent Geometrical and Electronic Structure. Journal of Physical Chemistry C, 2012, 116, 7312-7317.	3.1	108
11	Lattice Instability and Competing Spin Structures in the Double Perovskite Insulator<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>Sr</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:msub><mml:mi>FeOsO</mml:mi><m Physical Review Letters, 2013, 111, 167205.	7.8	100
12	In Situ XANES/XRD Study of the Structural Stability of Two-Dimensional Molybdenum Carbide Mo₂CT<i>_x</i>: Implications for the Catalytic Activity in the Waterâ€“Gas Shift Reaction. Chemistry of Materials, 2019, 31, 4505-4513.	6.7	100
13	Crystal Structure and Solution Species of Ce(III) and Ce(IV) Formates: From Mononuclear to Hexanuclear Complexes. Inorganic Chemistry, 2013, 52, 11734-11743.	4.0	79
14	CO₂ Uptake and Cyclic Stability of MgO-Based CO₂ Sorbents Promoted with Alkali Metal Nitrates and Their Eutectic Mixtures. ACS Applied Energy Materials, 2019, 2, 1295-1307.	5.1	79
15	Exploiting two-dimensional morphology of molybdenum oxycarbide to enable efficient catalytic dry reforming of methane. Nature Communications, 2020, 11, 4920.	12.8	78
16	Exsolution of Metallic Ru Nanoparticles from Defective, Fluorite-Type Solid Solutions Sm₂Ru<i>_x</i>Ce_{2â€“<i>x</i>}O₇ To Impart Stability on Dry Reforming Catalysts. ACS Catalysis, 2020, 10, 1923-1937.	11.2	70
17	Synthesis, Crystal Structure, and Physical Properties of Sr₂FeOsO₆. Inorganic Chemistry, 2013, 52, 6713-6719.	4.0	68
18	Puzzling Mechanism behind a Simple Synthesis of Cobalt and Cobalt Oxide Nanoparticles: In Situ Synchrotron X-ray Absorption and Diffraction Studies. Chemistry of Materials, 2014, 26, 2086-2094.	6.7	63

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19	Two-dimensional molybdenum carbide 2D-Mo2C as a superior catalyst for CO2 hydrogenation. Nature Communications, 2021, 12, 5510.	12.8	63
20	Single-Atom-Substituted Mo₂C<i>T</i>_{<i>x</i>}:Fe-Layered Carbide for Selective Oxygen Reduction to Hydrogen Peroxide: Tracking the Evolution of the MXene Phase. Journal of the American Chemical Society, 2021, 143, 5771-5778.	13.7	61
21	Scientific Opportunities for Heterogeneous Catalysis Research at the SuperXAS and SNBL Beam Lines. Chimia, 2012, 66, 699.	0.6	60
22	Development of MgAl₂O₄-stabilized, Cu-doped, Fe₂O₃-based oxygen carriers for thermochemical water-splitting. Journal of Materials Chemistry A, 2016, 4, 113-123.	10.3	57
23	Propane Dehydrogenation on Ga₂O₃-Based Catalysts: Contrasting Performance with Coordination Environment and Acidity of Surface Sites. ACS Catalysis, 2021, 11, 907-924.	11.2	55
24	<i>Operando</i>X-ray Absorption Spectroscopy Identifies a Monoclinic ZrO₂:In Solid Solution as the Active Phase for the Hydrogenation of CO₂to Methanol. ACS Catalysis, 2020, 10, 10060-10067.	11.2	54
25	Reversible Exsolution of Dopant Improves the Performance of Ca₂Fe₂O₅ for Chemical Looping Hydrogen Production. ACS Applied Materials & Interfaces, 2019, 11, 18276-18284.	8.0	50
26	Mechanistic Understanding of CaOâ€Based Sorbents for Highâ€Temperature CO₂ Capture: Advanced Characterization and Prospects. ChemSusChem, 2020, 13, 6259-6272.	6.8	38
27	Electronic and Geometric Structure of Ce³⁺ Forming Under Reducing Conditions in Shaped Ceria Nanoparticles Promoted by Platinum. Journal of Physical Chemistry C, 2014, 118, 1974-1982.	3.1	34
28	Bifunctional core-shell architecture allows stable H2 production utilizing CH4 and CO2 in a catalytic chemical looping process. Applied Catalysis B: Environmental, 2019, 258, 117946.	20.2	34
29	CuO promoted Mn₂O₃-based materials for solid fuel combustion with inherent CO₂ capture. Journal of Materials Chemistry A, 2015, 3, 10545-10550.	10.3	33
30	Ultrathin Single Crystalline MgO(111) Nanosheets**. Angewandte Chemie - International Edition, 2021, 60, 3254-3260.	13.8	29
31	A large-area CMOS detector for high-energy synchrotron powder diffraction and total scattering experiments. Journal of Applied Crystallography, 2014, 47, 449-457.	4.5	28
32	Peering into buried interfaces with X-rays and electrons to unveil MgCO ₃ formation during CO ₂ capture in molten salt-promoted MgO. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	26
33	Aliovalent Ni in MoO₂ Latticeâ€" Probing the Structure and Valence of Ni and Its Implication on the Electrochemical Performance. Chemistry of Materials, 2014, 26, 4505-4513.	6.7	25
34	Bi-functional Ru/Ca3Al2O6â€"CaO catalyst-CO2 sorbent for the production of high purity hydrogen via sorption-enhanced steam methane reforming. Catalysis Science and Technology, 2019, 9, 5745-5756.	4.1	25
35	Synthesis, Crystal Structure, and Properties of the Ordered Double Perovskite Sr₂CoOsO₆. Zeitschrift Fur Anorganische Und Allgemeine Chemie, 2013, 639, 2421-2425.	1.2	24
36	Atomic-Scale Insight into the Structure of Metastable Î³-Ga₂O₃ Nanocrystals and their Thermally-Driven Transformation to Î²-Ga₂O₃. Journal of Physical Chemistry C, 2020, 124, 20578-20588.	3.1	24

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37	Enhanced ionic transport in fine-grained scandia-stabilized zirconia ceramics. Journal of Power Sources, 2010, 195, 3402-3406.	7.8	22
38	Na₂CO₃-modified CaO-based CO₂ sorbents: the effects of structure and morphology on CO₂ uptake. Physical Chemistry Chemical Physics, 2020, 22, 24697-24703.	2.8	22
39	Reducibility and Dispersion Influence the Activity in Silica-Supported Vanadium-Based Catalysts for the Oxidative Dehydrogenation of Propane: The Case of Sodium Decavanadate. ACS Catalysis, 2020, 10, 2314-2321.	11.2	22
40	Understanding the anomalous behavior of Vegard's law in Ce_{1â^’x}M_xO₂ (M = Sn and Ti; 0 < x â‰ 0.5) solid solutions. Physical Chemistry Chemical Physics, 2016, 18, 13974-13983.	2.8	21
41	ZrO₂-Supported Fe₂O₃ for Chemical-Looping-Based Hydrogen Production: Effect of pH on Its Structure and Performance As Probed by X-ray Absorption Spectroscopy and Electrical Conductivity Measurements. Journal of Physical Chemistry C, 2016, 120, 18977-18985.	3.1	21
42	Molybdenum carbide and oxycarbide from carbon-supported MoO₃ nanosheets: phase evolution and DRM catalytic activity assessed by TEM and <i>in situ</i> XANES/XRD methods. Nanoscale, 2020, 12, 13086-13094.	5.6	21
43	Crystallite size-dependent phases in nanocrystalline ZrO2â€"Sc2O3. Physical Chemistry Chemical Physics, 2010, 12, 2822.	2.8	18
44	The effect of copper on the redox behaviour of iron oxide for chemical-looping hydrogen production probed by <i>in situ</i> X-ray absorption spectroscopy. Physical Chemistry Chemical Physics, 2018, 20, 12736-12745.	2.8	18
45	Deciphering the Nature of Ru Sites in Reductively Exsolved Oxides with Electronic and Geometric Metalâ€"Support Interactions. Journal of Physical Chemistry C, 2020, 124, 25299-25307.	3.1	18
46	Bulk and surface transformations of Ga2O3 nanoparticle catalysts for propane dehydrogenation induced by a H2 treatment. Journal of Catalysis, 2022, 408, 155-164.	6.2	18
47	Na⁺ doping induced changes in the reduction and charge transport characteristics of Al₂O₃-stabilized, CuO-based materials for CO₂ capture. Physical Chemistry Chemical Physics, 2016, 18, 12278-12288.	2.8	16
48	Effect of molten sodium nitrate on the decomposition pathways of hydrated magnesium hydroxycarbonate to magnesium oxide probed by<i>in situ</i>total scattering. Nanoscale, 2020, 12, 16462-16473.	5.6	16
49	Metastable Phase Diagram of Nanocrystalline ZrO₂â^’Sc₂O₃ Solid Solutions. Journal of Physical Chemistry C, 2009, 113, 18661-18666.	3.1	15
50	Cerium Valence Change in the Solid Solutions Ce(Rh_{1-x}Rux)Sn. Zeitschrift Fur Naturforschung - Section B Journal of Chemical Sciences, 2013, 68, 960-970.	0.7	15
51	Synthesis and Theoretical Investigations of the Solid Solution CeRu1â€"xNixAl (x= 0.1â€"0.95) Showing Cerium Valence Fluctuations. Inorganic Chemistry, 2014, 53, 2471-2480.	4.0	15
52	Correlating the Structural Evolution of ZnO/Al₂O₃ to Spinel Zinc Aluminate with its Catalytic Performance in Propane Dehydrogenation. Journal of Physical Chemistry C, 2021, 125, 14065-14074.	3.1	14
53	[illegible] disordering by hole doping in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi mathvariant="normal">P</mml:mi><mml:msub><mml:mi mathvariant="normal">r</mml:mi><mml:mrow><mml:mn>1</mml:mn><mml:mo>â^’</mml:mo><mml:mi>x</mml:mi></mml:mrow> mathvariant="normal">C</mml:mi><mml:msub><mml:mi mathvariant="normal">a</mml:mi><mml:mi>x</mml:mi></mml:msub><mml:mi mathvariant="normal">V	3.2	13
54	Retention at room temperature of the tetragonal tâ€³-form in Sc2O3-doped ZrO2 nanopowders. Journal of Alloys and Compounds, 2010, 495, 561-564.	5.5	12

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55	The solid solutions CeRu1â€“xPdxSn and CeRh1â€“xPdxSn â€“ Applicability of the ICF model to determine intermediate cerium valencies by comparison with XANES data. Zeitschrift Fur Naturforschung - Section B Journal of Chemical Sciences, 2015, 70, 253-264.	0.7	11
56	New quaternary arsenide oxides with square planar coordination of gold(<scp>i</scp>) â€“ structure,¹⁹⁷Au MÃ¶ssbauer spectroscopic, XANES and XPS characterization of Nd₁₀Au₃As₈O₁₀and Sm₁₀Au₃As₈O₁₀. Dalton Transactions, 2015, 44, 5854-5866.	3.3	11
57	Hydrogen dissociation sites on indium-based ZrO2-supported catalysts for hydrogenation of CO2 to methanol. Catalysis Today, 2022, 387, 38-46.	4.4	11
58	Size-dependent phase transitions in nanostructured zirconiaâ€“scandia solid solutions. RSC Advances, 2012, 2, 5205.	3.6	10
59	Three structure types and intermediate cerium valence in the solid solution CeRu1â€“xNixSn. Solid State Sciences, 2015, 40, 36-43.	3.2	10
60	Structural insight into an atomic layer deposition (ALD) grown Al₂O₃ layer on Ni/SiO₂: impact on catalytic activity and stability in dry reforming of methane. Catalysis Science and Technology, 2021, 11, 7563-7577.	4.1	10
61	Uncovering selective and active Ga surface sites in galliaâ€“alumina mixed-oxide propane dehydrogenation catalysts by dynamic nuclear polarization surface enhanced NMR spectroscopy. Chemical Science, 2021, 12, 15273-15283.	7.4	10
62	Surface Intermediates in In-Based ZrO₂-Supported Catalysts for Hydrogenation of CO₂ to Methanol. Journal of Physical Chemistry C, 2022, 126, 1793-1799.	3.1	10
63	Na-Î²-Al₂O₃ stabilized Fe₂O₃ oxygen carriers for chemical looping water splitting: correlating structure with redox stability. Journal of Materials Chemistry A, 2022, 10, 10692-10700.	10.3	10
64	Atomic Layer Deposition of a Film of Al₂O₃ on Electrodeposited Copper Foams To Yield Highly Effective Oxygen Carriers for Chemical Looping Combustion-Based CO₂ Capture. ACS Applied Materials & Interfaces, 2018, 10, 37994-38005.	8.0	7
65	Atomic-scale changes of silica-supported catalysts with nanocrystalline or amorphous gallia phases: implications of hydrogen pretreatment on their selectivity for propane dehydrogenation. Catalysis Science and Technology, 2022, 12, 3957-3968.	4.1	7
66	Hidden Charge Order in an Iron Oxide Square-Lattice Compound. Physical Review Letters, 2021, 127, 097203.	7.8	6
67	Dynamics of phase transitions in Na₂TiO₃ and its possible utilization as a CO₂ sorbent: a critical analysis. Reaction Chemistry and Engineering, 2021, 6, 1974-1982.	3.7	4
68	The Solid Solutions (Ce1-xLax)RuSn. Zeitschrift Fur Naturforschung - Section B Journal of Chemical Sciences, 2013, 68, 1279-1287.	0.7	3
69	Oxidative dehydrogenation of propane on silica-supported vanadyl sites promoted with sodium metavanadate. Catalysis Science and Technology, 2020, 10, 7186-7193.	4.1	2
70	Synchrotron X-ray powder diffraction study of the tetragonal-cubic phase transition in nanostructured ZrO2-Sc2O3 solid solutions. Powder Diffraction, 2008, 23, S87-S90.	0.2	1
71	Ultrathin Single Crystalline MgO(111) Nanosheets**. Angewandte Chemie, 2021, 133, 3291-3297.	2.0	1
72	Synthesis of ZrO2-Sc2O3 Nanopowders by Gel-Combustion Routes. ECS Transactions, 2007, 7, 2197-2205.	0.5	0

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73	Anin situsynchrotron X-ray powder diffraction study of size dependent phase transitions in nanostructured ZrO2-Sc2O3solid solutions. Acta Crystallographica Section A: Foundations and Advances, 2011, 67, C493-C494.	0.3	0
74	Crystal structure, local atomic order and metastable phases of zirconia-based nanoceramics for solid-oxide fuel cells. Acta Crystallographica Section A: Foundations and Advances, 2011, 67, C489-C489.	0.3	0