Calvin Mukarakate

List of Publications by Year
in descending order

68 papers	2,408 citations	185998 28 h-index	214527 47 g-index
73 all docs	73 docs citations	73 times ranked	2371 citing authors

#	Article	IF	Citations
1	Current technologies for analysis of biomass thermochemical processing: A review. Analytica Chimica Acta, 2009, 651, 117-138.	2.6	252
2	Real-time monitoring of the deactivation of HZSM-5 during upgrading of pine pyrolysis vapors. Green Chemistry, 2014, 16, 1444-1461.	4.6	112
3	Effect of ZSM-5 acidity on aromatic product selectivity during upgrading of pine pyrolysis vapors. Catalysis Today, 2016, 269, 175-181.	2.2	105
4	Biomass Catalytic Pyrolysis on Ni/ZSM-5: Effects of Nickel Pretreatment and Loading. Energy & Fuels, 2016, 30, 5259-5268.	2.5	103
5	Radical Chemistry in the Thermal Decomposition of Anisole and Deuterated Anisoles: An Investigation of Aromatic Growth. Journal of Physical Chemistry A, 2010, 114, 9043-9056.	1.1	96
6	Driving towards cost-competitive biofuels through catalytic fast pyrolysis by rethinking catalyst selection and reactor configuration. Energy and Environmental Science, 2018, 11, 2904-2918.	15.6	95
7	Upgrading biomass pyrolysis vapors over Î²-zeolites: role of silica-to-alumina ratio. Green Chemistry, 2014, 16, 4891-4905.	4.6	91
8	Thermal Decomposition Mechanisms of the Methoxyphenols: Formation of Phenol, Cyclopentadienone, Vinylacetylene, and Acetylene. Journal of Physical Chemistry A, 2011, 115, 13381-13389.	1.1	80
9	Supported molybdenum oxides as effective catalysts for the catalytic fast pyrolysis of lignocellulosic biomass. Green Chemistry, 2016, 18, 5548-5557.	4.6	76
10	Catalytic upgrading of biomass pyrolysis vapors and model compounds using niobia supported Pd catalyst. Applied Catalysis B: Environmental, 2018, 238, 38-50.	10.8	76
11	Catalytic fast pyrolysis of biomass: the reactions of water and aromatic intermediates produces phenols. Green Chemistry, 2015, 17, 4217-4227.	4.6	71
12	Influence of Crystal Allomorph and Crystallinity on the Products and Behavior of Cellulose during Fast Pyrolysis. ACS Sustainable Chemistry and Engineering, 2016, 4, 4662-4674.	3.2	69
13	Unimolecular thermal decomposition of phenol and d5-phenol: Direct observation of cyclopentadiene formation via cyclohexadienone. Journal of Chemical Physics, 2012, 136, 044309.	1.2	64
14	Biomass pyrolysis: Thermal decomposition mechanisms of furfural and benzaldehyde. Journal of Chemical Physics, 2013, 139, 104310.	1.2	63
15	Role of Biopolymers in the Deactivation of ZSM-5 during Catalytic Fast Pyrolysis of Biomass. ACS Sustainable Chemistry and Engineering, 2018, 6, 10030-10038.	3.2	62
16	Theoretical and Experimental Spectroscopy of the S₂ State of CHF and CDF: Dynamically Weighted Multireference Configuration Interaction Calculations for High-Lying Electronic States. Journal of Physical Chemistry Letters, 2010, 1, 641-646.	2.1	57
17	Improving biomass pyrolysis economics by integrating vapor and liquid phase upgrading. Green Chemistry, 2018, 20, 567-582.	4.6	55
18	Molybdenum incorporated mesoporous silica catalyst for production of biofuels and value-added chemicals via catalytic fast pyrolysis. Green Chemistry, 2015, 17, 3035-3046.	4.6	45

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19	Deactivation of Multilayered MFI Nanosheet Zeolite during Upgrading of Biomass Pyrolysis Vapors. ACS Sustainable Chemistry and Engineering, 2017, 5, 5477-5484.	3.2	44
20	Reforming Biomass Derived Pyrolysis Bio-oil Aqueous Phase to Fuels. Energy & Fuels, 2017, 31, 1600-1607.	2.5	38
21	Laser ablation with resonance-enhanced multiphoton ionization time-of-flight mass spectrometry for determining aromatic lignin volatilization products from biomass. Review of Scientific Instruments, 2011, 82, 033104.	0.6	37
22	Fluorescence excitation and emission spectroscopy of the AÌƒAâ€³1â†XÌƒAâ€²1 system of CHBr. Journal of Chemical Physics, 2006, 124, 134302.	1.2	34
23	Fluorescence excitation and single vibronic level emission spectroscopy of the AÌƒAâ€³1â†XÌƒAâ€²1 system of CHCl. Journal of Chemical Physics, 2006, 124, 224314.	1.2	32
24	Catalytic Pyrolysis of Pine Over HZSM-5 with Different Binders. Topics in Catalysis, 2016, 59, 94-108.	1.3	32
25	Valorization of aqueous waste streams from thermochemical biorefineries. Green Chemistry, 2019, 21, 4217-4230.	4.6	31
26	Unimolecular thermal decomposition of dimethoxybenzenes. Journal of Chemical Physics, 2014, 140, 234302.	1.2	30
27	Advancing catalytic fast pyrolysis through integrated multiscale modeling and experimentation: Challenges, progress, and perspectives. Wiley Interdisciplinary Reviews: Energy and Environment, 2018, 7, e297.	1.9	30
28	Characterization and Catalytic Upgrading of Aqueous Stream Carbon from Catalytic Fast Pyrolysis of Biomass. ACS Sustainable Chemistry and Engineering, 2017, 5, 11761-11769.	3.2	28
29	Ga/ZSM-5 catalyst improves hydrocarbon yields and increases alkene selectivity during catalytic fast pyrolysis of biomass with co-fed hydrogen. Green Chemistry, 2020, 22, 2403-2418.	4.6	26
30	High resolution probe of spin-orbit coupling and the singlet-triplet gap in chlorocarbene. Journal of Chemical Physics, 2008, 128, 171101.	1.2	23
31	A perspective on biomass-derived biofuels: From catalyst design principles to fuel properties. Journal of Hazardous Materials, 2020, 400, 123198.	6.5	23
32	Dispersed fluorescence spectroscopy of jet-cooled HCF and DCF: Vibrational structure of the XÌƒAâ€²1 state. Journal of Chemical Physics, 2005, 123, 014314.	1.2	21
33	Catalytic Upgrading of Biomass-Derived Compounds via Câ€“C Coupling Reactions: Computational and Experimental Studies of Acetaldehyde and Furan Reactions in HZSM-5. Journal of Physical Chemistry C, 2015, 119, 24025-24035.	1.5	19
34	Furan Production from Glycoaldehyde over HZSM-5. ACS Sustainable Chemistry and Engineering, 2016, 4, 2615-2623.	3.2	19
35	Elucidating Zeolite Deactivation Mechanisms During Biomass Catalytic Fast Pyrolysis from Model Reactions and Zeolite Syntheses. Topics in Catalysis, 2016, 59, 73-85.	1.3	19
36	Integrated Biorefining: Coproduction of Renewable Resol Biopolymer for Aqueous Stream Valorization. ACS Sustainable Chemistry and Engineering, 2017, 5, 6615-6625.	3.2	19

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37	Electronic spectroscopy of the Ãƒ1Aâ€³â†•XÌƒ1Aâ€² system of CDF. Physical Chemistry Chemical Physics, 2006, 8, 707.	1.3	17
38	High resolution study of spin-orbit mixing and the singlet-triplet gap in chlorocarbene: Stimulated emission pumping spectroscopy of CH35Cl and CD35Cl. Journal of Chemical Physics, 2008, 129, 104309.	1.2	17
39	Detailed Oil Compositional Analysis Enables Evaluation of Impact of Temperature and Biomass-to-Catalyst Ratio on ex Situ Catalytic Fast Pyrolysis of Pine Vapors over ZSM-5. ACS Sustainable Chemistry and Engineering, 2020, 8, 1762-1773.	3.2	17
40	Stimulated Emission Pumping Spectroscopyof the [XÌƒ]Aâ€˜ State of CHF. Journal of Physical Chemistry A, 2008, 112, 466-471.	1.1	16
41	Vapor-Phase Stabilization of Biomass Pyrolysis Vapors Using Mixed-Metal Oxide Catalysts. ACS Sustainable Chemistry and Engineering, 2019, 7, 7386-7394.	3.2	15
42	Single vibronic level emission spectroscopy of the system of dibromocarbene. Journal of Molecular Spectroscopy, 2007, 241, 136-142.	0.4	14
43	Isotopic Studies for Tracking Biogenic Carbon during Co-processing of Biomass and Vacuum Gas Oil. ACS Sustainable Chemistry and Engineering, 2020, 8, 2652-2664.	3.2	14
44	Unraveling the Ãƒ¹B₁ â†•XÌƒ¹A₁ Spectrum of CCl₂: The Rennerâ^'Teller Effect, Barrier to Linearity, and Vibrational Analysis Using an Effective Polyad Hamiltonian. Journal of Physical Chemistry A, 2008, 112, 11355-11362.	1.1	13
45	Online Biogenic Carbon Analysis Enables Refineries to Reduce Carbon Footprint during Coprocessing Biomass- and Petroleum-Derived Liquids. Analytical Chemistry, 2021, 93, 4351-4360.	3.2	12
46	Probing spinâ€“orbit mixing and the singletâ€“triplet gap in dichloromethylene viaÂKa-sorted emission spectra. Physical Chemistry Chemical Physics, 2006, 8, 4320-4326.	1.3	11
47	Single vibronic level emission spectroscopy and fluorescence lifetime of the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si7.gif" display="inline" overflow="scroll"><mml:mrow><mml:msup><mml:mrow><mml:mover accent="true"><mml:mrow><mml:mtext>B</mml:mtext></mml:mrow><mml:mrow><mml:mo stretchy="true">â^¼</mml:mo></mml:mrow></mml:mover></mml:mrow><mml:mrow><mml:mn>1</mml:mn></mml:mrow></mml:ms Chemical Physics Letters, 2007, 449, 282-285.	1.2	11
48	Spectroscopy and dynamics of the predissociated, quasi-linear S2 state of chlorocarbene. Journal of Chemical Physics, 2012, 137, 104307.	1.2	11
49	<i>Ex situ</i> upgrading of pyrolysis vapors over PtTiO₂: extraction of apparent kinetics <i>via</i> hierarchical transport modeling. Reaction Chemistry and Engineering, 2021, 6, 125-137.	1.9	11
50	Electronic spectroscopy, lifetimes, and barrier to linearity in the system of dibromocarbene. Journal of Molecular Spectroscopy, 2007, 241, 180-185.	0.4	10
51	Optical-optical double resonance spectroscopy of the quasi-linear S2 state of CHF and CDF. II. Predissociation and mode-specific dynamics. Journal of Chemical Physics, 2011, 135, 104316.	1.2	10
52	Hierarchically Structured CeO2 Catalyst Particles From Nanocellulose/Alginate Templates for Upgrading of Fast Pyrolysis Vapors. Frontiers in Chemistry, 2019, 7, 730.	1.8	10
53	Optimizing Process Conditions during Catalytic Fast Pyrolysis of Pine with Pt/TiO₂â€"Improving the Viability of a Multiple-Fixed-Bed Configuration. ACS Sustainable Chemistry and Engineering, 2021, 9, 1235-1245.	3.2	10
54	Laser Spectroscopy of a Halocarbocation in the Gas Phase:Â CH2I+. Journal of the American Chemical Society, 2006, 128, 9320-9321.	6.6	9

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55	Electronic Spectroscopy of an Isolated Halocarbocation:â€‰ The Iodomethyl Cation CH₂I⁺ and Its Deuterated Isotopomers. Journal of Physical Chemistry A, 2007, 111, 10562-10566.	1.1	9
56	Electronic spectroscopy of the system of CDCl. Journal of Molecular Spectroscopy, 2007, 241, 143-150.	0.4	9
57	Optical-optical double resonance spectroscopy of the quasi-linear S2 state of CHF and CDF. I. Spectroscopic analysis. Journal of Chemical Physics, 2011, 135, 104315.	1.2	9
58	Estimating the Temperature Experienced by Biomass Particles during Fast Pyrolysis Using Microscopic Analysis of Biochars. Energy & Fuels, 2017, 31, 8193-8201.	2.5	9
59	Fast Pyrolysis of <i>Opuntia ficus-indica</i> (Prickly Pear) and <i>Grindelia squarrosa</i> (Gumweed). Energy & Fuels, 2018, 32, 3510-3518.	2.5	8
60	Reassignment of the electronic origin in the system of dibromocarbene. Journal of Molecular Spectroscopy, 2006, 240, 139-140.	0.4	6
61	Electronic spectroscopy of the AÌƒAâ€³1â†”XÌƒAâ€²1 system of CDBr. Journal of Chemical Physics, 2006, 125, 094305.	1.2	6
62	Optimization of Biomass Pyrolysis Vapor Upgrading Using a Laminar Entrained-Flow Reactor System. Energy & Fuels, 2020, 34, 6030-6040.	2.5	6
63	Single vibronic level emission spectroscopy of the system of bromochlorocarbene. Journal of Molecular Spectroscopy, 2007, 246, 113-117.	0.4	5
64	Accelerating catalyst development for biofuel production through multiscale catalytic fast pyrolysis of biomass over Mo2C. Chem Catalysis, 2022, 2, 1819-1831.	2.9	5
65	Predicting thermal excursions during <i>in situ</i> oxidative regeneration of packed bed catalytic fast pyrolysis catalyst. Reaction Chemistry and Engineering, 2021, 6, 888-904.	1.9	4
66	Advanced spectrometric methods for characterizing bio-oils to enable refineries to reduce fuel carbon intensity during co-processing. Applied Spectroscopy Reviews, 2022, 57, 77-87.	3.4	3
67	Multi-scale Characterization Study Enabling Deactivation Mechanism in Formed Zeolite Catalyst. Microscopy and Microanalysis, 2020, 26, 1270-1271.	0.2	0
68	Multiscale Catalytic Fast Pyrolysis of Grindelia Reveals Opportunities for Generating Low Oxygen Content Bio-Oils from Drought Tolerant Biomass. Energy & Fuels, 0, , .	2.5	0