Abhijeet Raj

List of Publications by Year
in descending order

80 papers	3,166 citations	136885 32 h-index	161767 54 g-index
80 all docs	80 docs citations	80 times ranked	1798 citing authors

#	Article	IF	Citations
1	A PAH growth mechanism and synergistic effect on PAH formation in counterflow diffusion flames. Combustion and Flame, 2013, 160, 1667-1676.	2.8	254
2	A reaction mechanism for gasoline surrogate fuels for large polycyclic aromatic hydrocarbons. Combustion and Flame, 2012, 159, 500-515.	2.8	182
3	Towards a detailed soot model for internal combustion engines. Combustion and Flame, 2009, 156, 1156-1165.	2.8	137
4	A study on the coagulation of polycyclic aromatic hydrocarbon clusters to determine their collision efficiency. Combustion and Flame, 2010, 157, 523-534.	2.8	124
5	A statistical approach to develop a detailed soot growth model using PAH characteristics. Combustion and Flame, 2009, 156, 896-913.	2.8	117
6	Soot modeling of counterflow diffusion flames of ethylene-based binary mixture fuels. Combustion and Flame, 2015, 162, 586-596.	2.8	117
7	Structural effects on the oxidation of soot particles by O2: Experimental and theoretical study. Combustion and Flame, 2013, 160, 1812-1826.	2.8	106
8	Modelling soot formation in a premixed flame using an aromatic-site soot model and an improved oxidation rate. Proceedings of the Combustion Institute, 2009, 32, 639-646.	2.4	103
9	Reaction mechanism for the free-edge oxidation of soot by O2. Combustion and Flame, 2012, 159, 3423-3436.	2.8	93
10	Developing the PAH-PP soot particle model using process informatics and uncertainty propagation. Proceedings of the Combustion Institute, 2011, 33, 675-683.	2.4	91
11	Effects of 2,5-dimethylfuran addition to diesel on soot nanostructures and reactivity. Fuel, 2015, 159, 766-775.	3.4	91
12	Effects of methyl group on aromatic hydrocarbons on the nanostructures and oxidative reactivity of combustion-generated soot. Combustion and Flame, 2016, 172, 1-12.	2.8	74
13	Aromatic site description of soot particles. Combustion and Flame, 2008, 155, 161-180.	2.8	73
14	PAH Growth Initiated by Propargyl Addition: Mechanism Development and Computational Kinetics. Journal of Physical Chemistry A, 2014, 118, 2865-2885.	1.1	69
15	H2S adsorption on graphene in the presence of sulfur: A density functional theory study. Computational Materials Science, 2016, 117, 110-119.	1.4	65
16	New polycyclic aromatic hydrocarbon (PAH) surface processes to improve the model prediction of the composition of combustion-generated PAHs and soot. Carbon, 2010, 48, 319-332.	5.4	64
17	The simultaneous reduction of nitric oxide and soot in emissions from diesel engines. Carbon, 2009, 47, 866-875.	5.4	61
18	Polycyclic aromatic hydrocarbon (PAH) formation from benzyl radicals: a reaction kinetics study. Physical Chemistry Chemical Physics, 2016, 18, 8120-8131.	1.3	58

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19	A detailed reaction mechanism for hydrogen production via hydrogen sulphide (H2S) thermolysis and oxidation. International Journal of Hydrogen Energy, 2016, 41, 6662-6675.	3.8	56
20	On the role of resonantly stabilized radicals in polycyclic aromatic hydrocarbon (PAH) formation: pyrene and fluoranthene formation from benzylâ€“indenyl addition. Physical Chemistry Chemical Physics, 2017, 19, 19262-19278.	1.3	55
21	Super porous TiO2 photocatalyst: Tailoring the agglomerate porosity into robust structural mesoporosity with enhanced surface area for efficient remediation of azo dye polluted waste water. Journal of Environmental Management, 2020, 258, 110029.	3.8	54
22	Physicochemical properties of soot generated from toluene diffusion flames: Effects of fuel flow rate. Combustion and Flame, 2017, 178, 286-296.	2.8	53
23	A mechanistic study on the simultaneous elimination of soot and nitric oxide from engine exhaust. Carbon, 2011, 49, 1516-1531.	5.4	52
24	Thermal fragmentation and deactivation of combustion-generated soot particles. Combustion and Flame, 2014, 161, 2446-2457.	2.8	51
25	On the characteristics and reactivity of soot particles from ethanol-gasoline and 2,5-dimethylfuran-gasoline blends. Fuel, 2018, 222, 42-55.	3.4	51
26	Sooting limit in counterflow diffusion flames of ethylene/propane fuels and implication to threshold soot index. Proceedings of the Combustion Institute, 2013, 34, 1803-1809.	2.4	47
27	Asphaltene-Derived Activated Carbon and Carbon Nanotube Membranes for CO₂ Separation. Energy & Fuels, 2018, 32, 11718-11730.	2.5	42
28	Oxidative destruction of monocyclic and polycyclic aromatic hydrocarbon (PAH) contaminants in sulfur recovery units. Chemical Engineering Science, 2016, 155, 348-365.	1.9	41
29	Kinetic Simulation of Acid Gas (H₂S and CO₂) Destruction for Simultaneous Syngas and Sulfur Recovery. Industrial & Engineering Chemistry Research, 2016, 55, 6743-6752.	1.8	40
30	Combustion kinetics of H2S and other sulfurous species with relevance to industrial processes. Progress in Energy and Combustion Science, 2020, 80, 100848.	15.8	39
31	Growth of polycyclic aromatic hydrocarbons (PAHs) by methyl radicals: Pyrene formation from phenanthrene. Combustion and Flame, 2017, 185, 129-141.	2.8	35
32	Effects of H₂O in the Feed of Sulfur Recovery Unit on Sulfur Production and Aromatics Emission from Claus Furnace. Industrial & Engineering Chemistry Research, 2017, 56, 11713-11725.	1.8	34
33	Formation of polycyclic aromatic hydrocarbons in Claus process from contaminants in H2S feed gas. Chemical Engineering Science, 2015, 137, 91-105.	1.9	31
34	Roles of hydrogen sulfide concentration and fuel gas injection on aromatics emission from Claus furnace. Chemical Engineering Science, 2017, 172, 513-527.	1.9	31
35	Reaction mechanism for the oxidation of zigzag site on polycyclic aromatic hydrocarbons in soot by O2. Combustion and Flame, 2016, 165, 21-33.	2.8	29
36	Impact of dicyclopentadiene addition to diesel on cetane number, sooting propensity, and soot characteristics. Fuel, 2018, 216, 110-120.	3.4	29

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37	CFD simulation of reactor furnace of sulfur recovery units by considering kinetics of acid gas (H 2 S) Tj ETQq1 1 0.784314 rgBT /Overloc	3.0	26
38	An evaluation of kinetic models for the simulation of Claus reaction furnaces in sulfur recovery units under different feed conditions. Journal of Natural Gas Science and Engineering, 2020, 74, 103106.	2.1	26
39	Transmission of trace metals from fuels to soot particles: An ICP-MS and soot nanostructural disorder study using diesel and diesel/Karanja biodiesel blend. Fuel, 2020, 280, 118631.	3.4	26
40	Kinetic Simulations of H₂ Production from H₂S Pyrolysis in Sulfur Recovery Units Using a Detailed Reaction Mechanism. Energy & Fuels, 2016, 30, 10823-10834.	2.5	25
41	Affinity purification of viral protein having heterogeneous quaternary structure: Modeling the impact of soluble aggregates on chromatographic performance. Journal of Chromatography A, 2009, 1216, 5696-5708.	1.8	24
42	Structural effects on the growth of large polycyclic aromatic hydrocarbons by C2H2. Combustion and Flame, 2019, 204, 331-340.	2.8	24
43	Multi-objective optimization of sulfur recovery units using a detailed reaction mechanism to reduce energy consumption and destruct feed contaminants. Computers and Chemical Engineering, 2019, 128, 21-34.	2.0	23
44	Toluene Destruction in the Claus Process by Sulfur Dioxide: A Reaction Kinetics Study. Industrial & Engineering Chemistry Research, 2014, 53, 16293-16308.	1.8	22
45	Dual-stage acid gas combustion to increase sulfur recovery and decrease the number of catalytic units in sulfur recovery units. Applied Thermal Engineering, 2019, 156, 576-586.	3.0	22
46	Effects of Camphor Oil Addition to Diesel on the Nanostructures and Oxidative Reactivity of Combustion-Generated Soot. Energy & Fuels, 2019, 33, 12852-12864.	2.5	22
47	Reduction in Natural Gas Consumption in Sulfur Recovery Units through Kinetic Simulation Using a Detailed Reaction Mechanism. Industrial & Engineering Chemistry Research, 2018, 57, 1417-1428.	1.8	20
48	Effect of 5-membered bicyclic hydrocarbon additives on nanostructural disorder and oxidative reactivity of diffusion flame-generated diesel soot. Fuel, 2020, 275, 117918.	3.4	19
49	Effects of Neem Oil-Derived Biodiesel Addition to Diesel on the Reactivity and Characteristics of Combustion-Generated Soot. Energy & Fuels, 2017, 31, 10822-10832.	2.5	18
50	Benzene Destruction in Claus Process by Sulfur Dioxide: A Reaction Kinetics Study. Industrial & Engineering Chemistry Research, 2014, 53, 10608-10617.	1.8	17
51	Nanostructural Disorder and Reactivity Comparison of Flame Soot and Engine Soot Using Diesel and Jatropha Biodiesel/Diesel Blend as Fuels. Energy & Fuels, 2020, 34, 12960-12971.	2.5	17
52	Effect of fuel flow rate on the characteristics of soot generated from unsubstituted and disubstituted aromatic hydrocarbon flames: Experimental and numerical study. Combustion and Flame, 2018, 190, 224-239.	2.8	16
53	Effects of fuel gas addition to Claus furnace on the formation of soot precursors. Combustion and Flame, 2016, 168, 240-254.	2.8	15
54	Effects of fuel-bound methyl groups and fuel flow rate in the diffusion flames of aromatic fuels on the formation of volatile PAHs. Combustion and Flame, 2018, 198, 412-427.	2.8	14

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55	Novel processes for lean acid gas utilization for sulfur production with high efficiency. Chemical Engineering Science, 2022, 248, 117194.	1.9	14
56	Comment on â€œLow Fractal Dimension Cluster-Dilute Soot Aggregates from a Premixed Flameâ€. Physical Review Letters, 2010, 104, 119601; author reply 119602.	2.9	13
57	Reaction Mechanism for the Formation of Nitrogen Oxides (NO_x) During Coke Oxidation in Fluidized Catalytic Cracking Units. Combustion Science and Technology, 2015, 187, 1683-1704.	1.2	13
58	Reaction Mechanism form-Xylene Oxidation in the Claus Process by Sulfur Dioxide. Journal of Physical Chemistry A, 2015, 119, 9889-9900.	1.1	13
59	Effects of Oxygen Enrichment on Natural Gas Consumption and Emissions of Toxic Gases (CO,) Tj ETQq1 1 0.784314 rgBT /Overlock 10 Research, 2019, 58, 16489-16501.	1.8	13
60	A split-flow sulfur recovery process for the destruction of aromatic hydrocarbon contaminants in acid gas. Journal of Natural Gas Science and Engineering, 2022, 97, 104378.	2.1	11
61	A reaction kinetics study and model development to predict the formation and destruction of organosulfur species (carbonyl sulfide and mercaptans) in Claus furnace. International Journal of Chemical Kinetics, 2018, 50, 880-896.	1.0	10
62	Aromatics oxidation in the furnace of sulfur recovery units: Model development and optimization. Journal of Natural Gas Science and Engineering, 2020, 83, 103581.	2.1	9
63	A new acid gas destruction kinetic model for reaction furnace of an industrial sulfur recovery unit: A CFD study. Chemical Engineering Science, 2022, 256, 117692.	1.9	7
64	Heat Integration in Straightâ€Through Sulfur Recovery Units to Increase Net Highâ€Pressure Steam Production. Chemical Engineering and Technology, 2021, 44, 164-173.	0.9	6
65	Fuel oxygenation as a novel method to reduce sooting propensity of fuels: An investigation with gasoline surrogate fuels. Fuel, 2022, 324, 124562.	3.4	6
66	Reaction mechanism and modeling study for the oxidation by SO₂ of <i>o</i>â€xylene and <i>p</i>â€xylene in Claus process. International Journal of Quantum Chemistry, 2018, 118, e25583.	1.0	5
67	Variation in sooting characteristics and cetane number of diesel with the addition of a monoterpene biofuel, Î±-pinene. Fuel, 2022, 314, 123082.	3.4	5
68	Detailed Reaction Mechanism To Predict Ammonia Destruction in the Thermal Section of Sulfur Recovery Units. Industrial & Engineering Chemistry Research, 2020, 59, 4912-4923.	1.8	3
69	Process integration of sulfur combustion with clausÂSRU for enhanced hydrogen production fromÂacid gas. International Journal of Hydrogen Energy, 2022, 47, 12456-12468.	3.8	3
70	Hydrogen production from thermal decomposition of ammonia-contaminated acid gas using a detailed reaction mechanism. International Journal of Hydrogen Energy, 2021, 46, 1828-1841.	3.8	2
71	A detailed reaction mechanism for elemental sulphur combustion in the furnace of sulphuric acid plants. Canadian Journal of Chemical Engineering, 2021, 99, 2441-2451.	0.9	2
72	PAH growth assisted by five-membered ring: pyrene formation from acenaphthylene. Combustion Theory and Modelling, 0, , 1-19.	1.0	2

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73	Reaction Mechanism for the Oxidation of Aromatic Contaminants Present in Feed Gas to Claus Process. Energy Procedia, 2015, 66, 61-64.	1.8	1
74	Multi-Objective Optimization to Predict Minimum Temperature for Efficient BTEX Destruction to Minimize Fuel Gas Consumption in Sulfur Recovery Units. , 2018, , .		1
75	A Kinetic Simulation Study to Decrease Carbon Monoxide CO Emission from Sulfur Recovery Units SRU. , 2018, , .		1
76	Growth of Polycyclic Aromatic Hydrocarbons by C₂H₂ Mediated by Five-membered Rings: Acenaphthylene Conversion to Phenanthrene. Combustion Science and Technology, 2023, 195, 619-645.	1.2	1
77	Towards a Detailed Soot Model for Internal Combustion Engines. ATZ Autotechnology, 2009, 9, 54-57.	0.1	0
78	Multi-objective optimization of sulfur recovery units for enhanced sulfur recovery and reduced natural gas consumption. , 2018, , .		0
79	Simulation of double Claus furnace to increase sulfur recovery and reduce the number of catalytic units in sulfur recovery units. , 2018, , .		0
80	Effects of the addition of a high energy density fuel, adamantane to diesel on its cetane number, sooting propensity, and soot nanostructural properties. , 2022, 2, 100008.		0