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	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
2	Novel processes for lean acid gas utilization for sulfur production with high efficiency. Chemical Engineering Science, 2022, 248, 117194.	1.9	14
3	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
4	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
5	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
6	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
7	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
8	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
9	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
10	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
11	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
12	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
13	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
14	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
15	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
16	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
17	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
18	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

#	Article	IF	Citations
19	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
20	Effects of Oxygen Enrichment on Natural Gas Consumption and Emissions of Toxic Gases (CO,) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 70 Research, 2019, 58, 16489-16501.	1.8	13
21	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
22	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
23	Structural effects on the growth of large polycyclic aromatic hydrocarbons by C2H2. Combustion and Flame, 2019, 204, 331-340.	2.8	24
24	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
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	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
27	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
28	Impact of dicyclopentadiene addition to diesel on cetane number, sooting propensity, and soot characteristics. Fuel, 2018, 216, 110-120.	3.4	29
29	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
30	Multi-objective optimization of sulfur recovery units for enhanced sulfur recovery and reduced natural gas consumption. , 2018, , .		0
31	Multi-Objective Optimization to Predict Minimum Temperature for Efficient BTEX Destruction to Minimize Fuel Gas Consumption in Sulfur Recovery Units. , 2018, , .		1
32	A Kinetic Simulation Study to Decrease Carbon Monoxide CO Emission from Sulfur Recovery Units SRU. , 2018, , .		1
33	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
34	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
35	Asphaltene-Derived Activated Carbon and Carbon Nanotube Membranes for CO₂ Separation. Energy & Fuels, 2018, 32, 11718-11730.	2.5	42
36	Simulation of double Claus furnace to increase sulfur recovery and reduce the number of catalytic units in sulfur recovery units. , 2018, , .		0

#	Article	IF	Citations
37	Physicochemical properties of soot generated from toluene diffusion flames: Effects of fuel flow rate. Combustion and Flame, 2017, 178, 286-296.	2.8	53
38	CFD simulation of reactor furnace of sulfur recovery units by considering kinetics of acid gas (H 2 S) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	3.0	26
39	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
40	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
41	Growth of polycyclic aromatic hydrocarbons (PAHs) by methyl radicals: Pyrene formation from phenanthrene. Combustion and Flame, 2017, 185, 129-141.	2.8	35
42	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
43	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
44	Effects of fuel gas addition to Claus furnace on the formation of soot precursors. Combustion and Flame, 2016, 168, 240-254.	2.8	15
45	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
46	Oxidative destruction of monocyclic and polycyclic aromatic hydrocarbon (PAH) contaminants in sulfur recovery units. Chemical Engineering Science, 2016, 155, 348-365.	1.9	41
47	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
48	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
49	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
50	Polycyclic aromatic hydrocarbon (PAH) formation from benzyl radicals: a reaction kinetics study. Physical Chemistry Chemical Physics, 2016, 18, 8120-8131.	1.3	58
51	H2S adsorption on graphene in the presence of sulfur: A density functional theory study. Computational Materials Science, 2016, 117, 110-119.	1.4	65
52	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
53	Soot modeling of counterflow diffusion flames of ethylene-based binary mixture fuels. Combustion and Flame, 2015, 162, 586-596.	2.8	117
54	Reaction Mechanism for the Oxidation of Aromatic Contaminants Present in Feed Gas to Claus Process. Energy Procedia, 2015, 66, 61-64.	1.8	1

#	Article	IF	Citations
55	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
56	Formation of polycyclic aromatic hydrocarbons in Claus process from contaminants in H2S feed gas. Chemical Engineering Science, 2015, 137, 91-105.	1.9	31
57	Effects of 2,5-dimethylfuran addition to diesel on soot nanostructures and reactivity. Fuel, 2015, 159, 766-775.	3.4	91
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	Thermal fragmentation and deactivation of combustion-generated soot particles. Combustion and Flame, 2014, 161, 2446-2457.	2.8	51
60	Toluene Destruction in the Claus Process by Sulfur Dioxide: A Reaction Kinetics Study. Industrial & Engineering Chemistry Research, 2014, 53, 16293-16308.	1.8	22
61	Benzene Destruction in Claus Process by Sulfur Dioxide: A Reaction Kinetics Study. Industrial & Engineering Chemistry Research, 2014, 53, 10608-10617.	1.8	17
62	PAH Growth Initiated by Propargyl Addition: Mechanism Development and Computational Kinetics. Journal of Physical Chemistry A, 2014, 118, 2865-2885.	1.1	69
63	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
64	A PAH growth mechanism and synergistic effect on PAH formation in counterflow diffusion flames. Combustion and Flame, 2013, 160, 1667-1676.	2.8	254
65	Structural effects on the oxidation of soot particles by O2: Experimental and theoretical study. Combustion and Flame, 2013, 160, 1812-1826.	2.8	106
66	Reaction mechanism for the free-edge oxidation of soot by O2. Combustion and Flame, 2012, 159, 3423-3436.	2.8	93
67	A reaction mechanism for gasoline surrogate fuels for large polycyclic aromatic hydrocarbons. Combustion and Flame, 2012, 159, 500-515.	2.8	182
68	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
69	A mechanistic study on the simultaneous elimination of soot and nitric oxide from engine exhaust. Carbon, 2011, 49, 1516-1531.	5.4	52
70	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
71	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
72	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

#	Article	IF	Citations
73	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
74	Towards a detailed soot model for internal combustion engines. Combustion and Flame, 2009, 156, 1156-1165.	2.8	137
75	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
76	A statistical approach to develop a detailed soot growth model using PAH characteristics. Combustion and Flame, 2009, 156, 896-913.	2.8	117
77	The simultaneous reduction of nitric oxide and soot in emissions from diesel engines. Carbon, 2009, 47, 866-875.	5.4	61
78	Towards a Detailed Soot Model for Internal Combustion Engines. ATZ Autotechnology, 2009, 9, 54-57.	0.1	0
79	Aromatic site description of soot particles. Combustion and Flame, 2008, 155, 161-180.	2.8	73
80	PAH growth assisted by five-membered ring: pyrene formation from acenaphthylene. Combustion Theory and Modelling, 0, , 1-19.	1.0	2