

List of Notations and Abbreviations

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A_{CO_2}	Area of chromatogram of carbon dioxide
d	Mean crystallite diameter
P	Gas pressure
P_o	Saturation vapour pressure of the gas
V_m	Volume of the gas required to form a monolayer on a unit gram of sample
λ	X-ray wavelength
β	Full width half maximum
θ	Bragg's angle
W	Work done
ΔU	Change in internal energy
C_v	Heat capacity
n_m	Calculated number of moles adsorbed
a_m	Area occupied by a molecule
L	Avogadro's number
V_1	Molar volume of the analysis gas
E_k	Kinetic energy
E_b	Electron binding energy
E_w	Work function of the spectrometer
FID	Flame ionization detector
TCD	Thermal conductivity detector
GC	Gas chromatography
RT	Retention time
X	Fractional conversion of soot
M_o	Weight of initial soot
M	Weight of soot at a typical temperature

CV	Calorific value
k	Kinetic rate constant
A	Frequency factor
E	Activation energy
R	Gas constant

List of Abbreviations

PM	Particulate matter
SOF	Soluble organic fraction
DPF	Diesel particulate filter
PGM	Platinum group metals
NO _x	Nitrogen oxides
PAH	Polycyclic aromatic hydrocarbons
ABC	Atmospheric brown cloud
SO _x	Oxides of sulphur
LDV	Light duty vehicles
HDV	Heavy duty vehicles
BS	Bharat stage
SCR	Selective catalytic reduction
DOC	Diesel oxidation catalyst
HC	Hydrocarbons
FTF	Flow through filter
CRT	Continuously regenerating trap
HT	Hydrotalcite
HTlcs	Hydrotalcite-like compounds
TGA	Thermo gravimetric analysis
T _p	Peak temperature
HP	Hindustan petroleum
Co-ppt	Co-precipitation

SG	Sol-gel
SCS	Solution combustion synthesis
RG	Reactive grinding
RC	Reactive calcination
VM	Volatile matter
XRD	X ray diffraction
FTIR	Fourier transform infrared spectroscopy
XPS	X-ray photoelectron spectroscopy
SEM	Scanning electron microscopy
EDX	Energy-dispersive X-ray spectroscopy
BET	Brunauer, Emmett, and Teller
SSA	Specific surface area
LOT	Light off temperatures
ARAI	Automotive research association of India
BJH	Barett-Joyner-Halenda
GHSV	Gas hour space velocity
h	Hour
T _i	Initial temperature of soot ignition
T ₅₀	Temperature at which 50% soot is converted
T _f	Total soot oxidation temperature