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LIST OF ABBREVIATIONS

Å	Angstrom
ASTM	American Society for Testing and Materials
ATR	Attenuated total reflectance
a.u.	Arbitrary units
bb1/day	Barrels per day
Bnl	Billion liters
bpd	Billions Barrels per day
BUR	Biennial Update Report
CIA	Central Intelligence Agency
cm ³ /sec	Cubic Centimeter per second
CO	Castor oil
CO ₂	Carbon dioxide
cP	Centipoise
cps	Counts per second
cSt	Centistoke
DSC	Differential scanning calorimetry
EDS	Energy dispersive X-ray spectroscopy
EIA	Energy Information Administration
eV	Electronvolt
FAME	Fatty Acid Methyl Ester
FFA	Free fatty acid

FT-IR	Fourier transform infrared
g	Gram
GC-MS	Gas chromatography-mass spectrometry
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GOI	Government of India
h	Hour
¹ H-NMR	Proton-1 nuclear magnetic resonance
IEA	International Energy Agency
JCPDS	Joint Committee on Powder Diffraction Standards
Kg	Kilogram
KJ/mol	Kilojoule per mole
kV	Kilovolt
L· ha ⁻¹	Liter per hectare
M	Molar
m ² /g	Meter square per gram
Mb/d	Million barrels per day
mg	Milligram
min	Minutes
MJ	Mega joule
mmol/g	Millimole per gram
Mtoe	Million tons of oil equivalents

Gtoe	Gallon tons of oil equivalents
N	Normal
NBM	National Biodiesel Mission
Nm	Nanometer
p.a.	Per annum
pH	Potential of hydrogen
pKa	Acid dissociation constant
rpm	Revolutions per minute
SEM	Scanning electron microscopy
TGA	Thermogravimetric analysis
v/v	Volume/volume
WRI	World Resources Institute
WCO	Waste Cooking Oil
wt %	Weight percent
XRD	X-ray diffraction
°C	Degree Celsius
λ	Lambda
μl	Microliter
μm	Micrometre
$\mu\text{mol}/\text{m}^2\text{s}^1$	Micromole per square per second
%	Percent
θ	Theta