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## **List of Abbreviations:**

AWE	Agro Waste Extract
AWEH	Ash Water Extract of Water Hyacinth
BINAP	2,2'-Bis(diphenylphosphino)-1,1'-binaphthyl)
BET	Brunauer-Emmett-Teller
BHM	Biodegradable Heterogeneous Material
CAM	Conventional Acid-treated Method
Су	Cyclohexyl
Cy-pip-phos	4-(Dicyclohexylphospino)-N,N-dimethylpiperidinium chloride
DABCO	1,4-Diazabicyclo[2,2,0]octane
DAPCy	trans-Bis(Dicyclohexylamine)palladiumdiacetate
DCPES	Dicyclohexylphosphinoethanesulfonate sodium salt
DMF	Dimethylforamide
Dfpp	1,1'-Bis[Di(5-methyl-2-furyl)phosphino]ferrocene
Dppf	1,2-Bis(Diphenylphosphino)ferrocene
DIOP	O-Isopropylidene-2,3-dihydroxy-1,4-bis(diphenylphosphino)butane
EDX	Energy Dispersive X-Ray
Et	Ethyl
FP	Flame Photometry
FTIR	Fourier Transform Infrared Spectroscopy
ICP-OES	Inductively Coupled Plasma Atomic Emission Spectroscopy
IC	Ion Chromatography
<i>i</i> Pr	Isopropyl
J	Coupling constant
JCPDS	Joint Committee on Powder Diffraction Standards
MAM	Microwave Assisted Method
mg	Milligram
Me	Methyl
mmol	Millimole
mL	Milliliter
NFC	Nanofibrillar cellulose
NCC	Nanocrystalline cellulose