SYMBOLS USED

α	Coefficient of growth associated product formation
β	Coefficient of non- growth associated product formation
η	Viscosity
γ	Shear rate
k	Consistency index
K_c	Casson viscosity
$k_L a$	Volumetric oxygen transfer coefficient
K_p	Bingham viscosity
L	Effective length of the spindle
M	Input torque
m_s	Specific maintenance coefficient
μ_{max}	Maximum specific cell growth rate
n	Flow behavior Index
P	Product Concentration
q_p	Specific product formation rate
r.f.	Retention factor
R^2	Coefficient of Regression
R_b	Radius of the spindle
R_c	Radius of the container
S	Substrate Concentration

τ	Shear stress
τ_c	Casson yield
τ_o	Bingham Yield stress
ω	Angular velocity of the sample
x	Biomass concentration
x_{max}	Maximum biomass concentration
$Y_{p/s}$	Yield of product per unit mass of substrate
$Y_{p/x}$	Yield of product per unit mass of dry cell
$Y_{x/s}$	Yield of dry cell mass per unit mass of substrate

ABBREVIATIONS USED

ALR	Air Lift Reactor
ANN	Artificial Neural Network
ANOVA	Analysis of Variance
CCD	Central Composite Design
CIFC	Central Instrument Facility Centre
CNIs	Calcineurin inhibitors
DNS	DiNitroSalicylic acid
DO	Dissolved Oxygen
EBP	Error- Back-Propagation
FFNN	Feed Forward Neural Network
FTIR	Fourier Transform Infra Red Spectroscopy
GA	Genetic Algorithm
H/D	Height to Diameter
HPLC	High Performance Liquid Chromatography
HPTLC	High Performance Thin Layer Chromatography
IL-2	Interleukins-2
MGYP	Malt Extract Glucose Yeast Extract Peptone
mTOR	mammalian Target of Rapamycin
PUF	Polyurethane Foam
SEM	Scanning Electron Microscope
STR	Stirred Tank Reactor
TMA	Tri-Methyl Amine
US-FDA	United States Food and Drug Administration
VOCs	Volatile Organic Compounds
vvm	volume of air per volume of media per minute
YEPD	Yeast Extract Peptone Dextrose