LIST OF ABBREVIATIONS

ACF	activated carbon fibers
ACH	activated carbon honeycomb
AFS	Atomic Fluorescence Spectroscopy
BET	Brunauer-Emmett-Teller method
CFB	circulating fluidized bed
CNT	carbon nanotube
De-SO_2	Desulphurization
De-NO	De-nitrification
EDX	Energy-dispersive X-ray spectroscopy
ESP	electrostatic precipitator
FGD	flue gas desulfurization
FT-IR	Fourier transform Infrared radiation
MEO	mediated electrochemical oxidation
MFC	Mass flow controller
NDIR	non-dispersive infrared sensor
ORP	oxidation-reduction potential
PCVD	Plasma chemical vapour deposition

PMMA	Poly methyl methacrylate
PSAC	palm shell activated carbon
SCR	selective catalytic reduction
SEM	scanning electron microscope
SNCR	selective non-catalytic reduction
TEM	transmission electron microscope
TPD	temperature programmed desorption
UV–vis	Ultraviolet–visible spectroscopy
XPS	X-ray photoelectron spectroscopy
XRD	X-ray diffraction

LIST OF SYMBOLS

a	Constant
b	Saturated quantity of no_x (or SO_2) adsorbed on powdery silica
a_g	Gas-liquid specific interfacial area, (m^{-1})
C_{NO_l}	Concentration of NO in bulk of the liquid phase, ($kmol/m^3$)
C_{NO_i}	Concentration of NO in liquid at gas-liquid interface, ($kmol/m^3$)
C_{NaClO}	Concentration of naclo, (M)
C_p	Specific heat at pressure
C_{p_i}	Specific heat at pressure for component i
D	Diffusion coefficient
D_{NO_l}	Diffusion constant of NO in liquid
E	Enhancement factor
$Ef_{(NO)}$	Removal efficiency of NO
$Ef_{(SO2)}$	Removal efficiency of SO_2
ΔG	Change in Gibbs free energy for the process
ΔG_i	Individual Gibbs free energy change of the component
H	Henry's law constant, ($Pa.m^3/kmol$)
Ha	Hatta coefficient
H_1	Henry's law coefficients at 298.15 K
H_2	Henry's law coefficients at 313 K
ΔH	Desired enthalpy change of the process at constant pressure
K	Equilibrium constant for the process at any temperature
I_{NaClO}	Ionic strength of naclo
K_{NaClO}	Salting out parameter for naclo

K_{NO_g}	Overall mass transfer coefficient based on the gas phase
k_{NO_g}	Gas phase mass transfer coefficient, (kmol/m^{2}s.Pa)
k_{NO_l}	Liquid phase mass transfer coefficient, (m/s)
$k_{r\ NO}$	Pseudo mth order rate constant
m	Reaction order
M_{SO_2}	Molecular weight of SO_2 (kg/kmol)
M_{NO}	Molecular weight of NO (kg/kmol)
N_{NO}	Molar absorption flux of NO, (kmol/m^2.s)
N_{SO_2}	Molar absorption flux of SO_2, (kmol/m^2.s)
ɳ	Removal efficiency
p	No_x or SO_2 concentration in gas phase at equilibrium
p_{p_i}	Equilibrium partial pressures of the product
p_{R_i}	Equilibrium partial pressures of the reactant
p_{in}	Inlet concentration of the gas, (ppm)
p_{out}	Outlet concentration of the gas, (ppm)
$p_{SO_{2b}}$	Partial pressure of SO_2, (Pa)
$p_{SO_{2g}}$	Partial pressure of SO_2 in the bulk of the gas phase, (Pa)
p_{NO_b}	Partial pressure of NO in the bulk of the gas phase, (Pa)
p_{NO_i}	Partial pressure of NO in gas at gas-liquid interface, (Pa)
$p_{NO\ (f)}$	Final concentration of NO
$p_{NO\ (i)}$	Initial concentration of NO
$p_{SO_2\ (f)}$	Final concentration of SO_2
$C_{SO_2\ (i)}$	Initial concentration of SO_2

ρ_{SO_2}	Density in SO_2, (kg/m^3)
ρ_{NO}	Density of NO, (kg/m^3)
q	Amount of no_x or SO_2 adsorbed on powdery silica
Q_g	Gas flow rate, (m^3/s)
r	Reaction rate
R^2	Regression coefficient
S	Entropy
T	Temperature, (K)
V_l	Volume of absorbent, (m^3)
v_i	Molar volume of component i
X_{S_1}	Concentration of anions in the liquid
X_{S_2}	Concentration of cations in the liquid
X_{S_3}	Concentration of dissolved gas in the liquid
γ_p	Stoichiometric coefficients of product
γ_R	Stoichiometric coefficients of reactant