

ABBREVIATIONS

TMA	Tetravalent Metal Acid
CP	Cerium (IV) Phosphate
TP	Thorium (IV) Phosphate
CP _M	Cerium (IV) Phosphate synthesized under microwave irradiation
TP _M	Thorium (IV) Phosphate synthesized under microwave irradiation
ZrP	Zirconium (IV) Phosphate
TiP	Titanium (IV) Phosphate
SnP	Tin (IV) Phosphate
DIW	Deionized Water
MW	Microwave
ICP-AES	Inductively Coupled Plasma - Atomic Emission Spectrometry
TGA	Thermogravimetric Analysis
DSC	Differential Scanning Calorimetry
XRD	X-ray Diffraction
SEM	Scanning Electron Microscope
FTIR	Fourier Transform Infra Red Spectroscopy
EDX	Energy Dispersive X-ray analysis
NH ₃ -TPD	Ammonia – Temperature Programmed Desorption
BET	Braunauer Emmett Tellers
CEC	Cation Exchange Capacity
BTC	Breakthrough Capacity
K_d	Distribution Coefficient
K'_c	Selectivity Coefficient
α	Separation Factor
% E	Percentage Elution
$U(t)$	Fractional Attainment of Equilibrium
K	Equilibrium constant
ΔG°	Standard Gibbs free energy change.
ΔH°	Standard Enthalpy Change
ΔS°	Standard Entropy Change

T	Temperature
°C	Degree Celsius
K	Kelvin
V_m	Maximum Adsorption Capacity
TON	Turn Over Number
EA	Ethyle Acetate
PA	Propyl Acetate
BA	Butyl Acetate
BzAc	Benzyl Acetate
AA	Acetic Anhydride
BzA	Benzyl Alcohol
PhA	Phthalic Anhydride
DEM	Diethyl Melonate
DES	Diethyl Succinate
DOP	Dioctyl Phthalate
DBP	Dibutyl Phthalate
PET	Pentaerythritol
PEM	Proton Exchange Membrane
PEMFC	Proton Exchange Membrane Fuel Cell
E_a	Activation Energy
σ	Specific Conductivity