LIST OF ABBREVIATIONS

AM 1	=	Austin Model 1
B3LYP	=	Beck's three parameter hybrid functional using the LYP correlation Functional
CH2	=	Methylene
CH3COOH	=	Acetic Acid
CH3CooNa	=	Sodium Acetate
DDA	=	Degree of Deacyrtylation
DSC	=	Differential Scanning Calorimeter
EO	=	Ethylene Oxide
e-	=	Electron
GaussianW	=	Gaussian software for Windows
GDE	=	Gas Diffusion Electrode
HF	=	Hartree-Fock theory
HOMO	=	Highest Occupied Molecular Orbital
H+	=	Proton
$H_2C_2S_2Se_2$	=	1,2-dithio-3,4-diselenosquaric Acid
H_2O	=	Water
IR	=	Infrared
LUMO	=	Lowest Unoccupied Molecular Orbital
M	=	Molar
MEA	=	Membrane Electrode Assembly
MNDO	=	Modified Neglect at Diatomic Overlap
MP2	=	Moller-Plesset theory truncated at 2nd order
MW	=	Molecylar Weight
mA	=	Milli-Ampare
NH2	=	Amine Group
NMR	=	Nuclear Magnetic Resonance
OH	=	Hydroxyl Group

LIST OF ABBREVIATIONS (Cont'd)

O_2	=	Oxygen
PEM	=	Proton Exchange Membrane
PEO	=	Poly (Ethylene Oxide)
PM3	=	MNDO parameter Method number 3
PNPC	=	Polymer Nano-Particle Composite
TGA	=	Thermogravimetric Analyzer
UV	=	Ultravilolet
Zn^{2+}	=	Zinc (II) ion
ΔG_0	=	Free Energy of Deprotonation
$\Delta \rho$	=	Density change
Φ	=	Tortion Angle