Table of contents:

	Wavenumber (cm^{-1})					Peak Assignment
	Poly 3-AMTa	**Poly-3-AMTa/ZnO**	**Poly-3-AMTa/CeO_2**	**Poly-3-AMTa/SiO_2**	**Poly-3-AMTa/TiO_2**	
1	3438	3439	3437	3437	3435	N-H Stretching Vibration
2	2920	2921	2923	2920	2922	Aromatic C-H Stretching Vibration
3	1634	1636	1633	1635	1636	N-H Stretching Vibration
4	2612	-	-	-	-	S-H Stretching
5	-	482	-	-	-	Zn-O Stretching
6	-	-	513	-	-	Ce-O Stretching
7	-	-	-	1092	-	Si-O-Si Stretching
8	-	-	-	-	1635	Ti-O Stretching

Table: S1. FT-IR spectral value of different metal oxides doped poly-3-AMTa

S. No.	Poly 3-AMTa	Poly 3-AMTa/CeO_2	Poly 3-AMTa/SiO_2	Poly 3-AMTa/ZnO	Poly 3-AMTa/TiO_2
1	23.38	23.44	23.25	23.44	23.25
2	27.03	27.30	27.18	26.81	27.09
3	38.68	38.74	38.52	38.59	38.56
4	45.64	46.10	45.91	45.82	45.61
5	47.60	47.91	47.91	47.91	47.85
6	55.76	55.73	56.00	55.76	55.73
7	63.27	63.45	61.19	63.21	63.03
8	69.99	69.99	63.00	69.99	70.05
JCPDS Card No.		**340394**	**897499**	**891397**	**896975**

Table: S2. XRD Pattern 2θ values of poly-3-AMTa with different metal oxides

Impedance Parameters	Bare Cu-Ni	Poly-3-AMTa	Poly-3- AMTa /SiO_2	Poly-3- AMTa /CeO_2	Poly-3-AMTa /ZnO	Poly-3- AMTa /TiO_2
R_s (Ω cm^2)	16.0	14.6	14.4	12.1	10.5	10.2
Q_{dl} ($S\ s^n/cm^2$)	2.4×10^{-4}	1.3×10^{-4}	9.7×10^{-5}	4.9×10^{-5}	3.61×10^{-5}	4.3×10^{-5}
Q_n	0.8	0.8	0.8	0.7	0.7	0.8
R_{ct} (Ω cm^2)	1134	2243	1.09×10^4	2.30×10^4	3.66×10^4	2.39×10^6
Q_f ($S\ s^n/cm^2$)	-	1.2×10^{-5}	6.2×10^{-5}	5.4×10^{-5}	2.0×10^{-5}	2.0×10^{-5}
Q_n	-	0.9	0.9	0.8	0.8	0.8
R_f (Ω cm^2)	-	2.98×10^{-5}	12.77	140.4	198.9	1018
η (%)	-	61.3	92.1	96.2	97.6	99.9

Table: S3. Impedance parameters for poly-3-AMTa with different metal oxides

Electrodes	i_{corr} (µA cm^{-2})	$-E_{corr}$ (V) vs SCE	IE (%)
Bare Cu-Ni	3.85	0.29	-
Poly-3-AMTa	1.03	0.28	73.2
Poly-3-AMTa/SiO_2	0.75	0.29	80.6
Poly-3-AMTa/CeO_2	0.41	0.28	89.3
Poly-3-AMTa/ZnO	0.26	0.28	93.2
Poly-3-AMTa/TiO_2	0.12	0.25	96.8

Table: S4. Potentiodynamic polarization values of poly-3-AMTa with different metal oxides

Impedance Parameters	Bare Cu-Ni	Poly-3-AMTa/SiO_2	Poly-3-AMTa/CeO_2	Poly-3-AMTa/ZnO	Poly-3-AMTa/TiO_2
R_s (Ω cm^2)	1.866	2.17	3.053	3.078	3.097
Q_f (S Sn / cm^2)	0.0125	0.0322	0.033	0.075	0.299
Q_n	0.8	0.8	0.8	0.7279	0.765
R_f (Ω cm^2)	7.637	6.631	64.52	9.06	8.968
Q_{d1} (S Sn / cm^2)	2.18×10^{-06}	2.24×10^{-06}	3.28×10^{-06}	1.20×10^{-06}	1.25×10^{-06}
Q_n	0.8	0.8	0.8	1	1
R_{ct} (Ω cm^2)	13.00	14.80	15.98	21.22	25.75
η (%)	-	14	23	63	98

Table: S5. Impedance parameters for poly-3-AMTa with different metal oxides in immersion of NaCl medium (3.5%) at 72 hours