Electronic Supplementary Material (ESI) for Nanoscale.

Elucidating the assembly of Nanoparticle Organic Hybrid Materials (NOHMs) near the electrode interface with varying potential using Neutron Reflectivity

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Supporting Information:

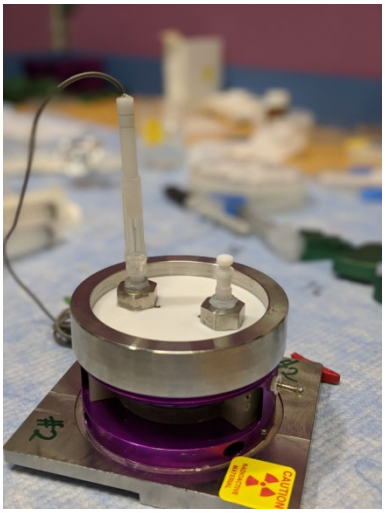

Figure S1 A picture of the cell used for neutron reflectivity experiments.

Component	SLD (10^{-6} Å^{-2})	Additional Relevant Parameters
Si	2.07	
Au	4.63	
Cr	3.03	
SiO	2.89	
HPE polymer	0.52	MW = 2,000 g/mol, Rg ~ 15 Å
SiO_2 Nanoparticle	4.20	Diameter = 45 Å
D_2O	6.35	
K	0.49	
Zn	3.73	

Table S1. SLD of the components calculated using neutron activation calculator.

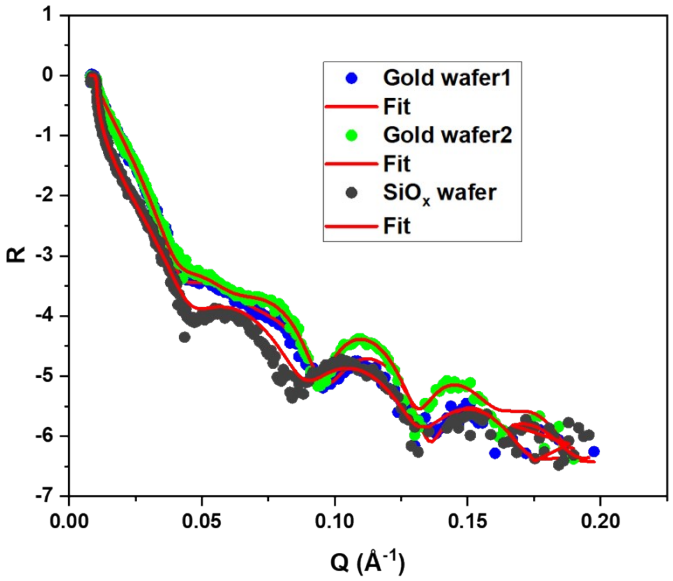

Figure S2 Neutron reflectivity profiles of Au (green and blue circles) and SiO_x wafers (black circles) with fit (red line)

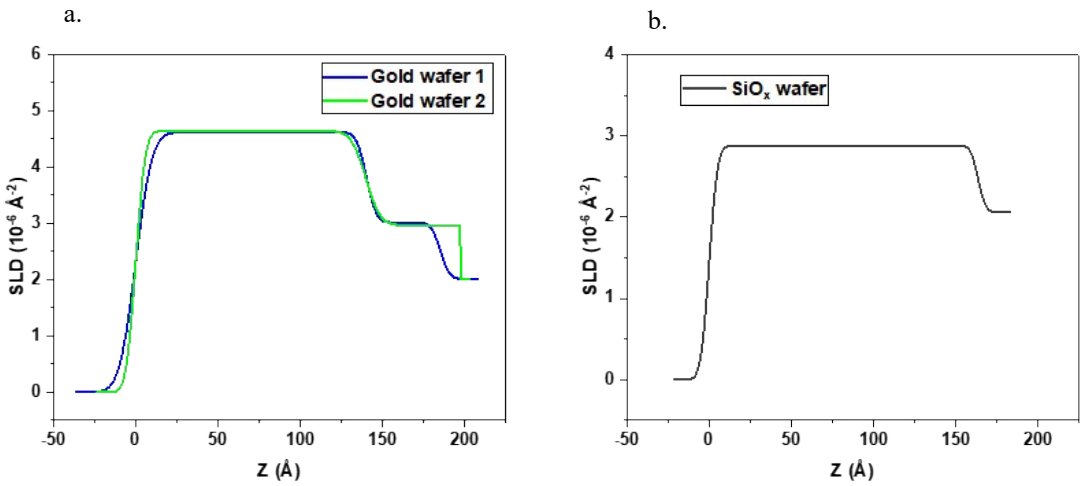

Figure S3 SLD profile of Au (a) and SiO_x (b) wafers obtained from reflectivity fit of the Au and SiO_x wafers.

Table S2 Density profile parameters of Au and SiO_x wafers obtained from the reflectivity fit of the Au and SiO_x wafers.

Sample	Parameters	Si	SiO_x	Cr	Au
	SLD (10^{-6} Å^{-2}) ± error	2.07	2.89		
SiO_x Wafer in air	Z (Å) ± error	-	143 ± 0.50		
	R(Å) ± error	1.5	4.88 ± 0.20		
	SLD (10^{-6} Å^{-2}) ± error	2.07	-	3.03	4.63
Au Wafer in air	Z (Å) ± error	-	-	46.4 ± 0.12	140 ± 1
	R(Å) ± error	4.0 ± 0.1	-	7.96 ± 0.01	4.94± 0.07
	SLD (10^{-6} Å^{-2}) ± error	2.07	-	3.03	4.63
Au Wafer in air	Z (Å) ± error	-	-	56.6 ± 0.18	140 ± 1
	R(Å) ± error	1.00 ± 0.01	-	5.36 ± 0.30	7.24 0.38

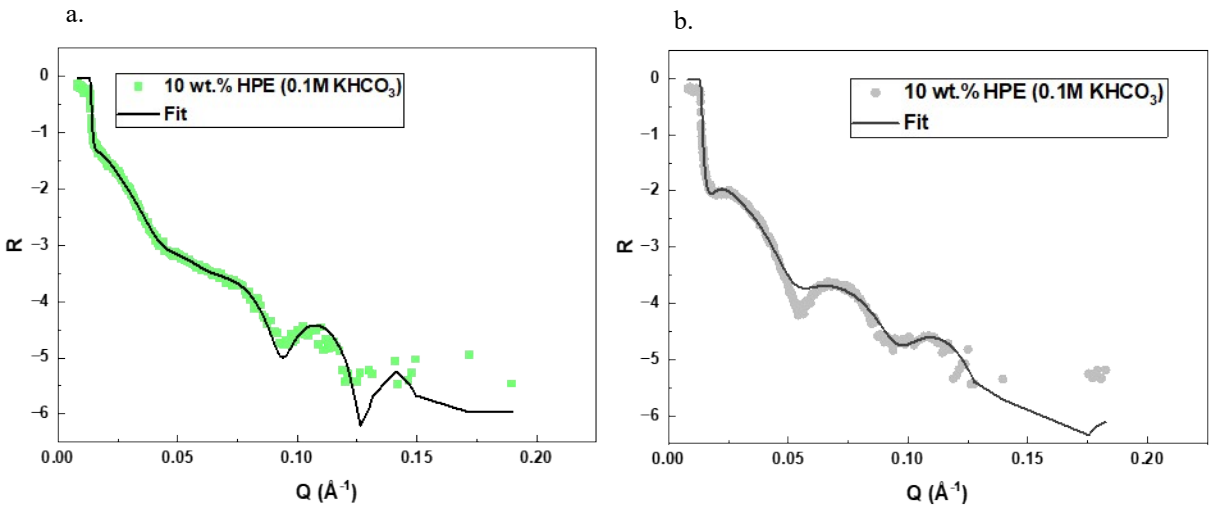

Figure S4 Neutron reflectivity profiles (circles) and fit (line) of 10 wt.% HPE in D_2O in presence of 0.1 M $KHCO_3$ salt near Au surface (a) and SiO_x surface (b).

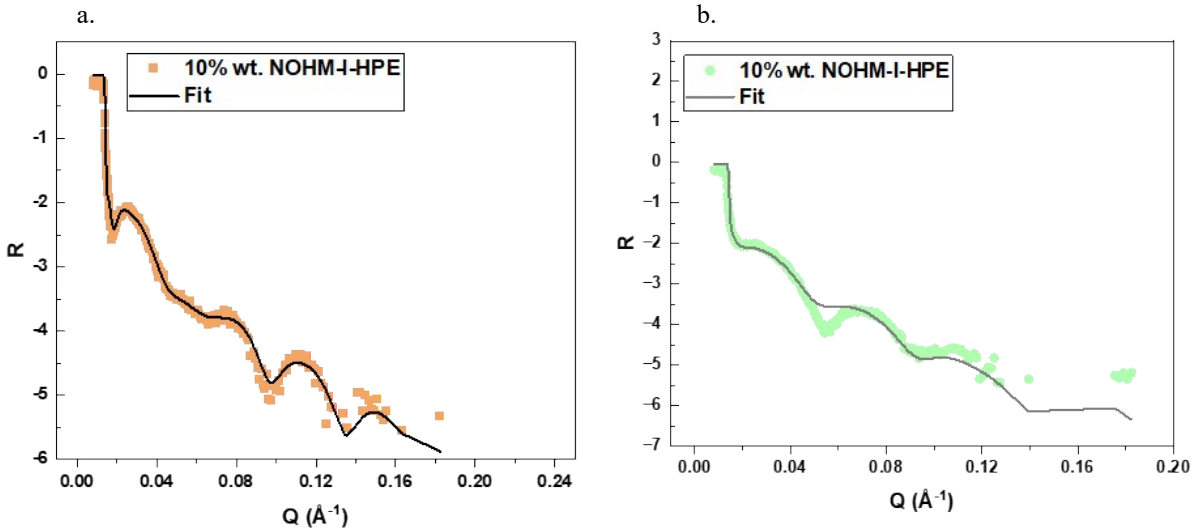

Figure S5. Neutron reflectivity profiles (circles) and fit (black line) of 10 wt.% NOHM-I-HPE in D_2O near Au surface (a) and SiO_x surface (b).

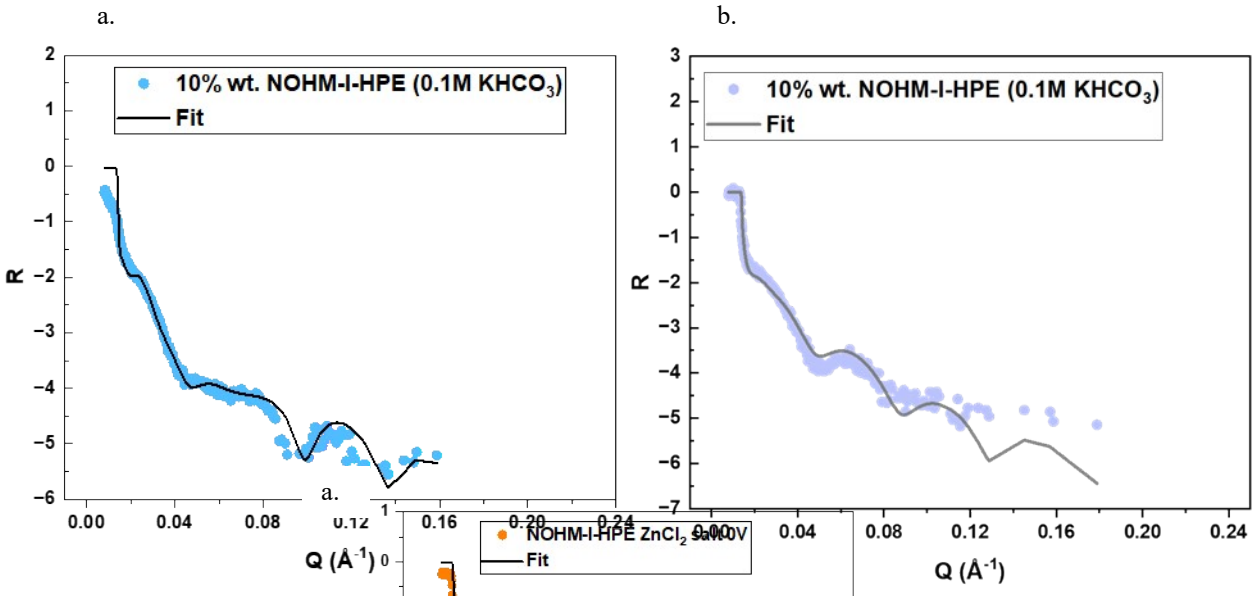

Figure S6 Neutron reflectivity profiles (circles) and fit (lines) of 10 wt.% NOHM-I-HPE in D_2O in presence of 0.1M $KHCO_3$ salt near Au surface (a) and SiO_x surface (b).

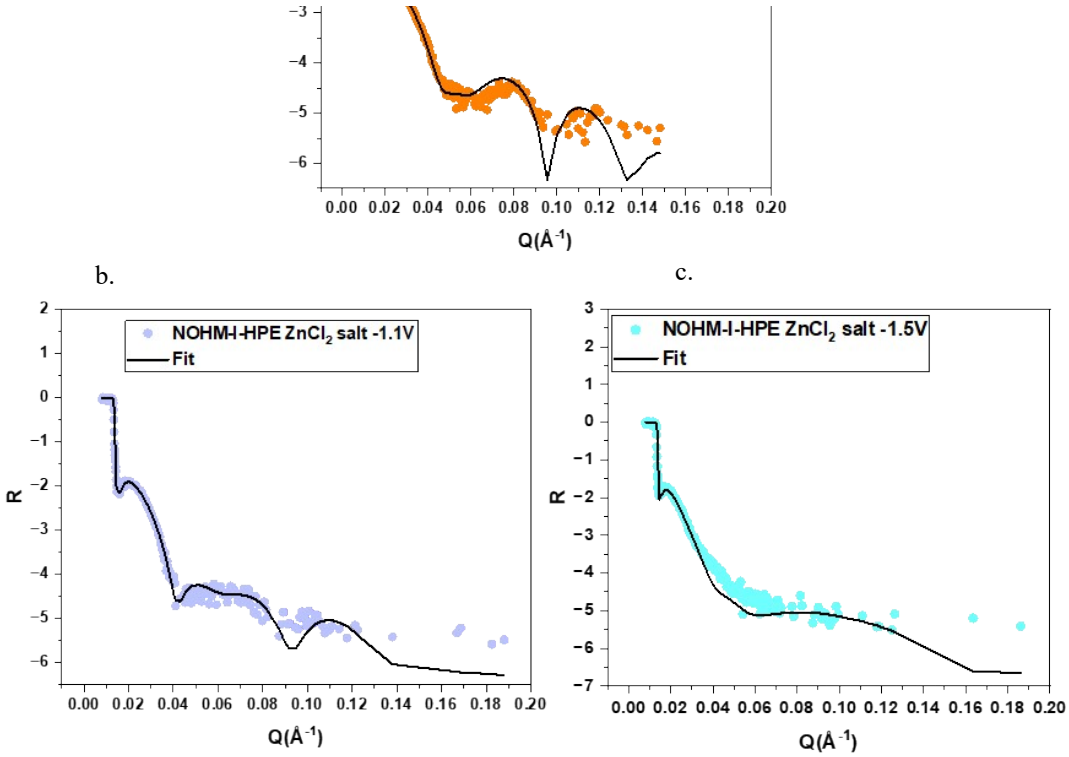

Figure S7 Neutron reflectivity profile (circle) and fit (line) of 10 wt.% NOHM-I-HPE in D_2O in presence of $ZnCl_2$ salt near Au surface at different potentials; 0V (a) -1.1V (b), -1.5V (c).