Electronic Supplementary Material (ESI) for RSC Advances.

Molecularly imprinted star polymer modified superparamagnetic iron oxide nanoparticle for the trace level sensing and separation of mancozeb

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Table S1: Optimization of composition of star polymer.

Type of Polymer	Amount of CTAB (g)	Amount of Silane@SPIONs (g)	Itaconic Acid (mmol)	EGDMA (mmol)	Template (mmol)	*Current (μA)
Polymer 1	0.005	0.5	3.7	0.5	1.0	32
Polymer 2	0.005	0.5	3.7	1.0	1.0	37
Polymer 3	0.005	0.5	3.7	**1.5**	1.0	48
Polymer 4	0.005	0.5	3.5	1.5	1.0	37
Polymer 5	0.005	0.5	4.0	1.5	1.0	39
Polymer 6	0.005	0.5	3.2	1.5	1.0	20
Polymer 7	0.005	0.3	3.7	1.5	1.0	14
Polymer 8	0.005	0.4	3.7	1.5	1.0	37
Polymer 9	0.005	0.6	3.7	1.5	1.0	15
Polymer 10	0.005	0.5	3.7	1.5	0.5	32
Polymer 11	0.005	0.5	3.7	1.5	1.5	51
Polymer 12	0.005	0.5	3.7	1.5	2.0	25
Polymer 13	**0.01**	**0.5**	**3.7**	**1.5**	**1.0**	**60**
Polymer 14	0.02	0.5	3.7	1.5	1.0	33

*Synthesized polymer used to fabricate electrodes, which later on used to measure SWSV current for 110.0 μg L^{-1} of mancozeb.

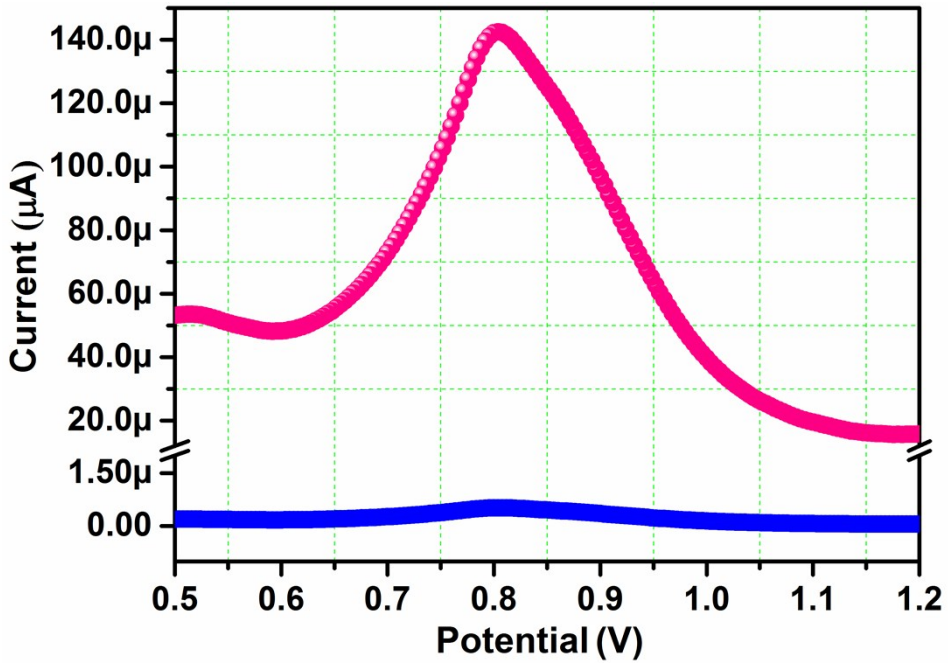

Figure S1: SWSV runs of (A) adduct star polymer and (B) MISP-modified PGEs.

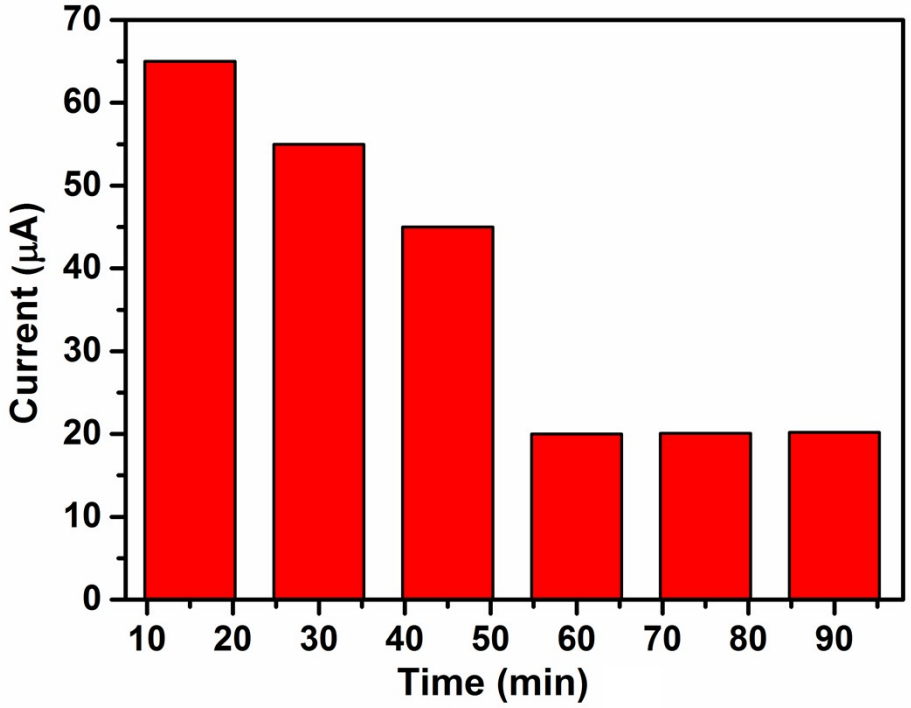

Figure S2: Optimization of incubation time between polymer and analyte.

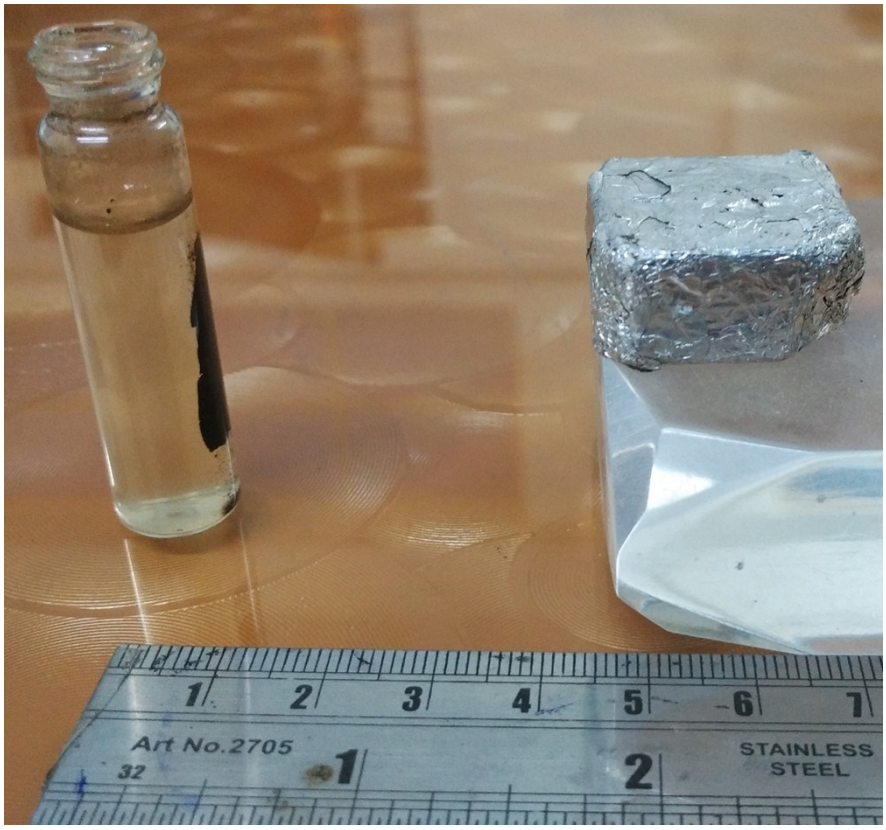

Figure S3: Separation of MISP using extrenal magnet placed 5cm away from the sample.

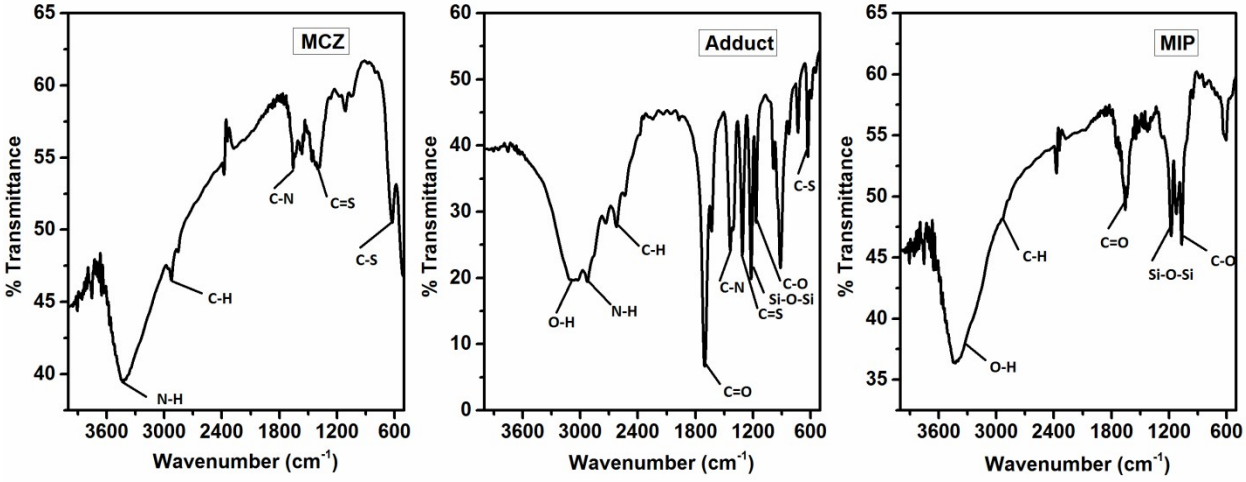

Figure S4: FT-IR spectrum of template, adduct, and MISP.

Table S2: DLS study of various nanomaterials and polymers.

S. N.	Material	Hydrodynamic diameter (nm)
1.	SPIONs	80.0 ± 2.0
2.	SPIONs@silane	102.3 ± 1.5
3.	MISP	145.7 ± 1.6
4.	NISP	120.1 ± 1.6
5.	LIP	108.9 ± 1.1