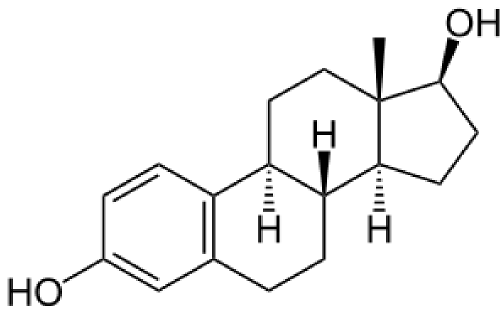
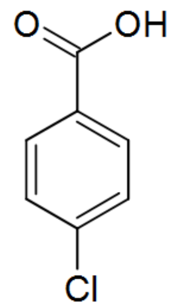
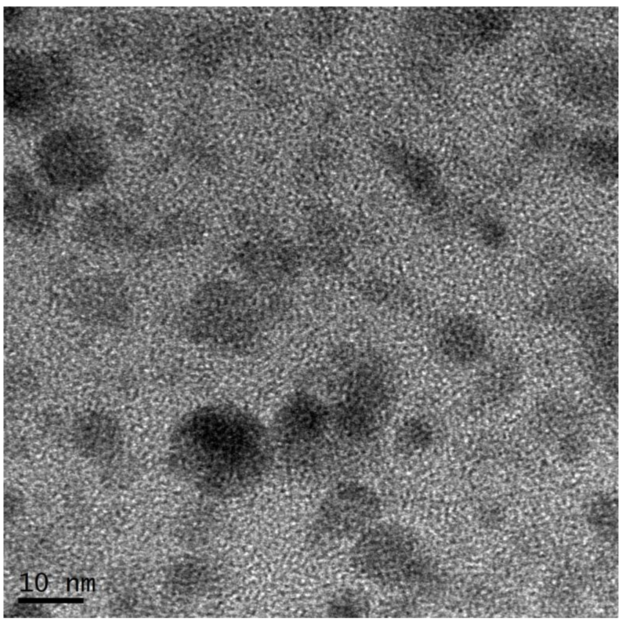
## Supplementary data



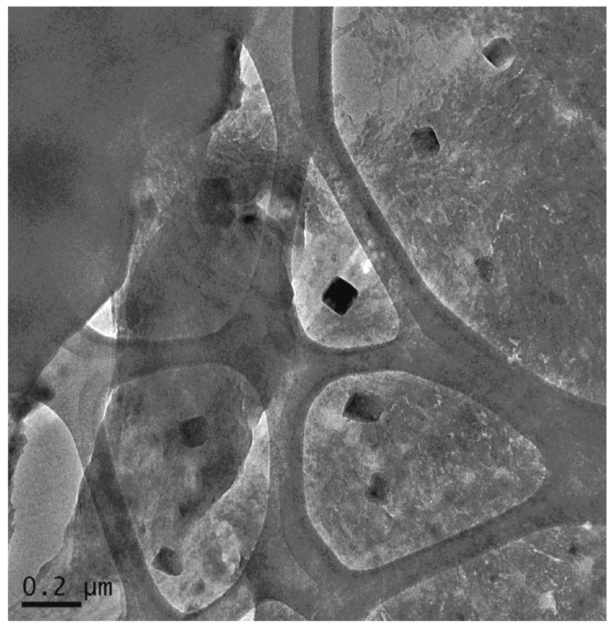

a




b




c




d

**Fig. S1** Molecular structure of organics: (a) E2, (b) pCBA; TEM images of ENMs (c) *fn*-Ag, (d) aq-$nC_{60}$.

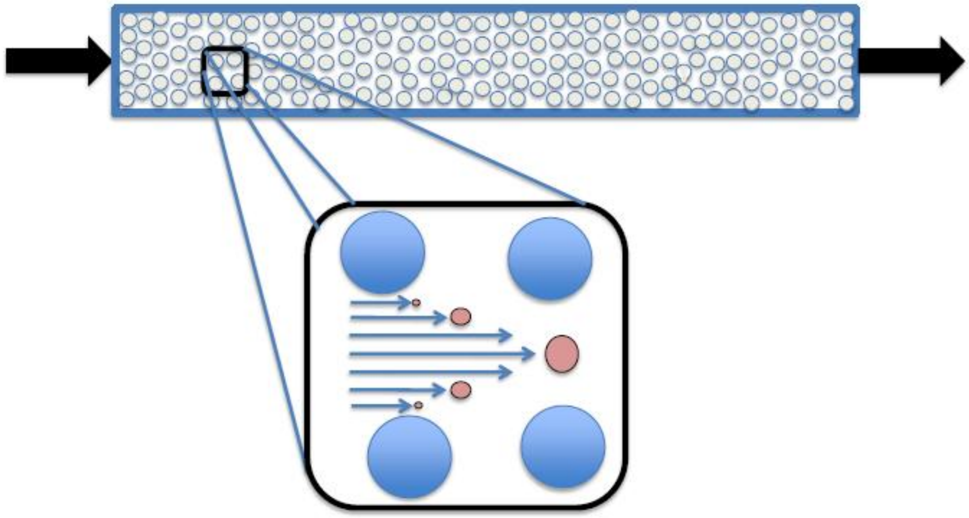


**Fig. S2** Schematic view of hydrodynamic chromatography (HDC). In the nonsorbing column packing a velocity gradient establishes (indicated by arrows of different lengths). Since smaller particles can get closer to the inert column packing where transport is slower, passage of particles of different sizes results in a separation process in which larger particles exit first and smaller ones thereafter, ideally, in order of diminishing effective size.

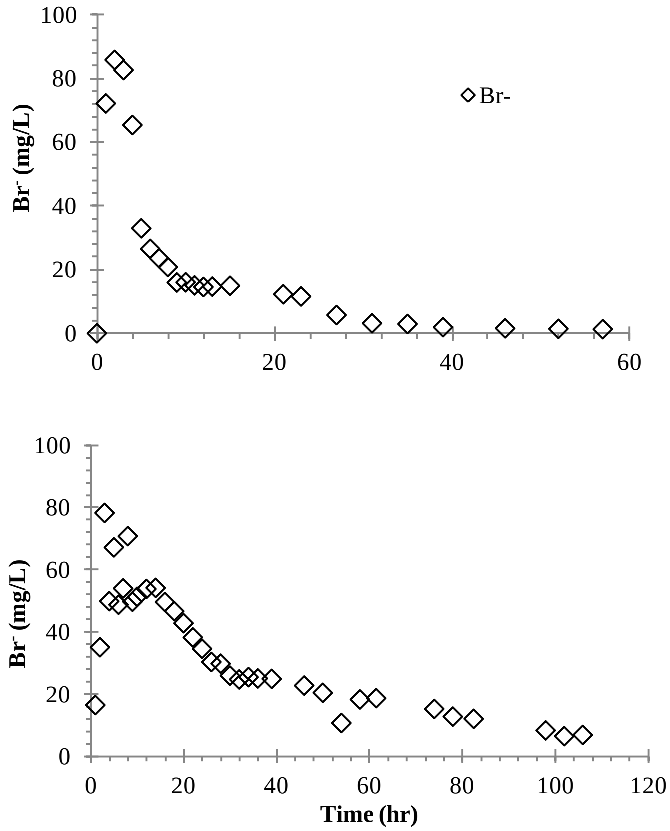



**Fig. S3** a(top), b (bottom). Tracer response in preliminary trials of the microcosm studies.

In order to get a preliminary idea about the hydraulics of the microcosms, tracer study was conducted. Fig S3 a and b represents tracer response in microcosms operated at 1d and 3.5d. Significant dispersion was observed in these microcosms and $\bar{t}$ was less than 50% of $\tau$. Short circuiting was considered to be the major problem encountered with the current configuration and the baffles used were made longer to overcome this. Another important observation from these experiments was that significant turbulence was created due to sudden change in volume during the injection of contaminant solution into the microcosms. Thus the next step for improving the microcosm hydraulics was to spike the compounds in such a way that minimizes such change or turbulence. A syringe pump was used for spiking the solution into the reactor while withdrawing the same volume out of the microcosm simultaneously. This procedure of introducing the target contaminants and tracer was found successful and used as the final method for conducting the microcosm experiments.

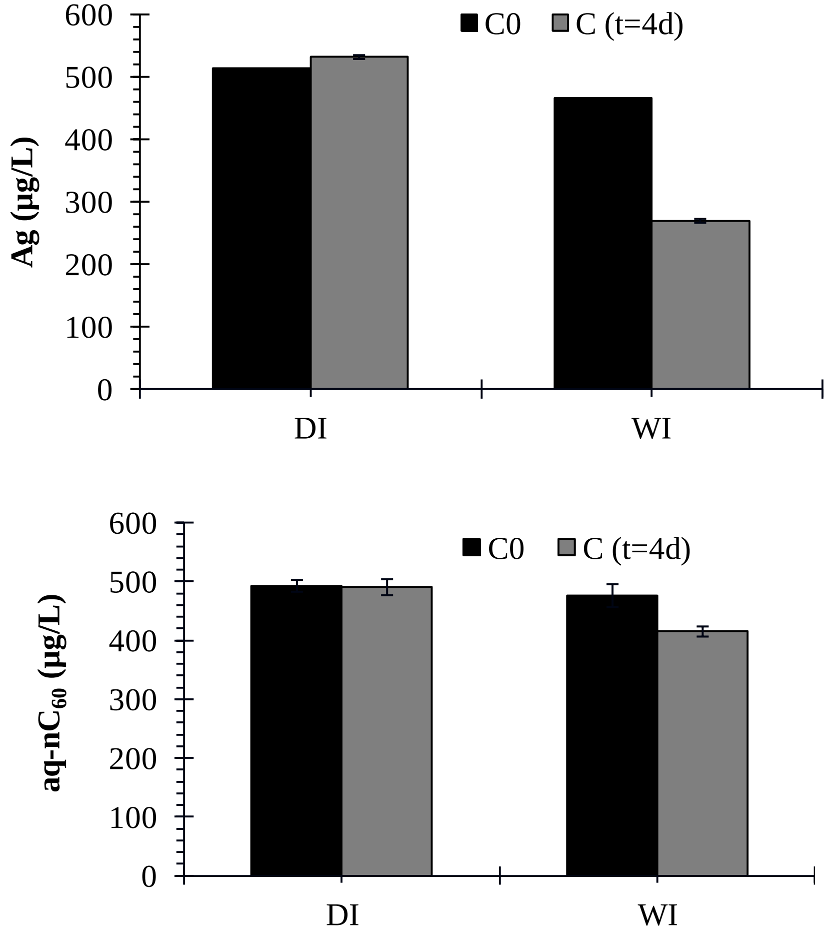



**Fig. S4** ENM loss in batch control. DI = Distilled water and WI= wetland influent; a. Ag b.aq-n$C_{60}$.