

Supporting Information for

Formation of Aqueous Suspensions of C₆₀, C₇₀, and PCBM

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Figure S1. Structure and molecular formula of PCBM

Figure S2. Variation of C₇₀ particle size, ζ potential, and mass over time

Figure S3. Representative TEM and AFM images of fullerene aggregates.

Figure S4. Colors of all the fullerene suspensions at the end of the experiment.

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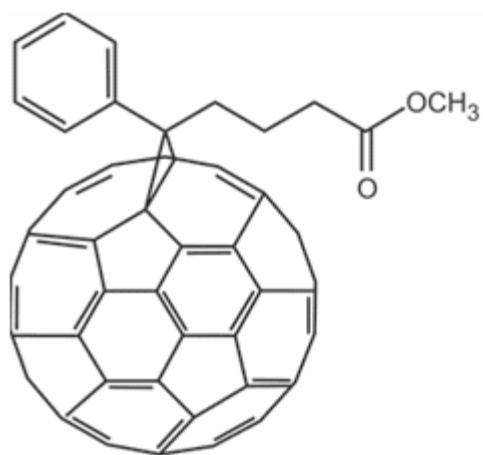


Figure S1. The structure of [6,6]-Phenyl C₆₁ butyric acid methyl ester (PCBM). Molecular formula: C₇₂H₁₄O₂.

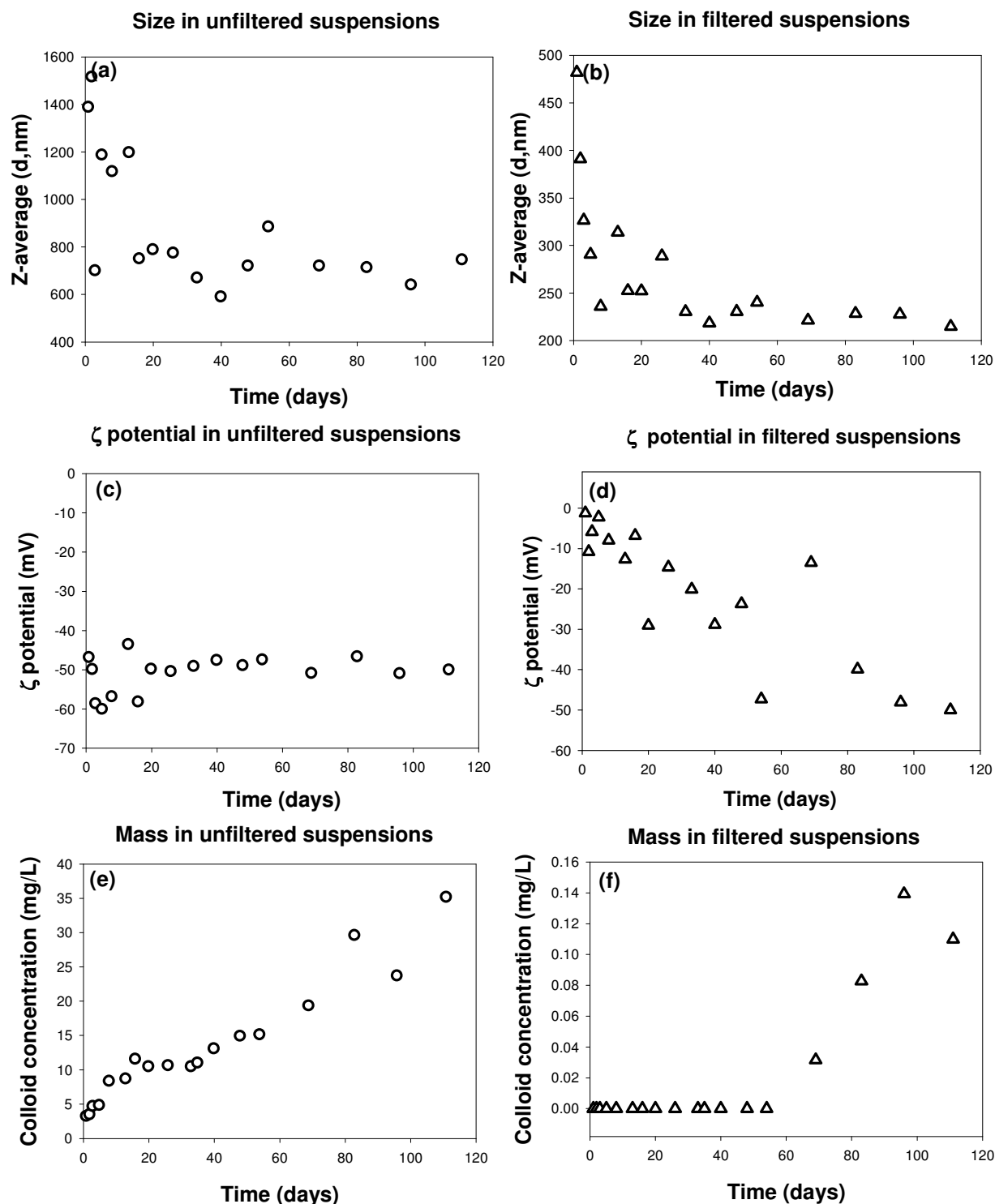


Figure S2. Variation of particle size (a) (b), ζ potential (c) (d) and mass (e) (f) of aqu/C₇₀ in unfiltered (○) (a) (c) (e) and filtered (△)(b) (d) (f) samples during 111-day extended stirring. The treatment was C₇₀ in DDI. The measurement temperature was set at 25 °C.

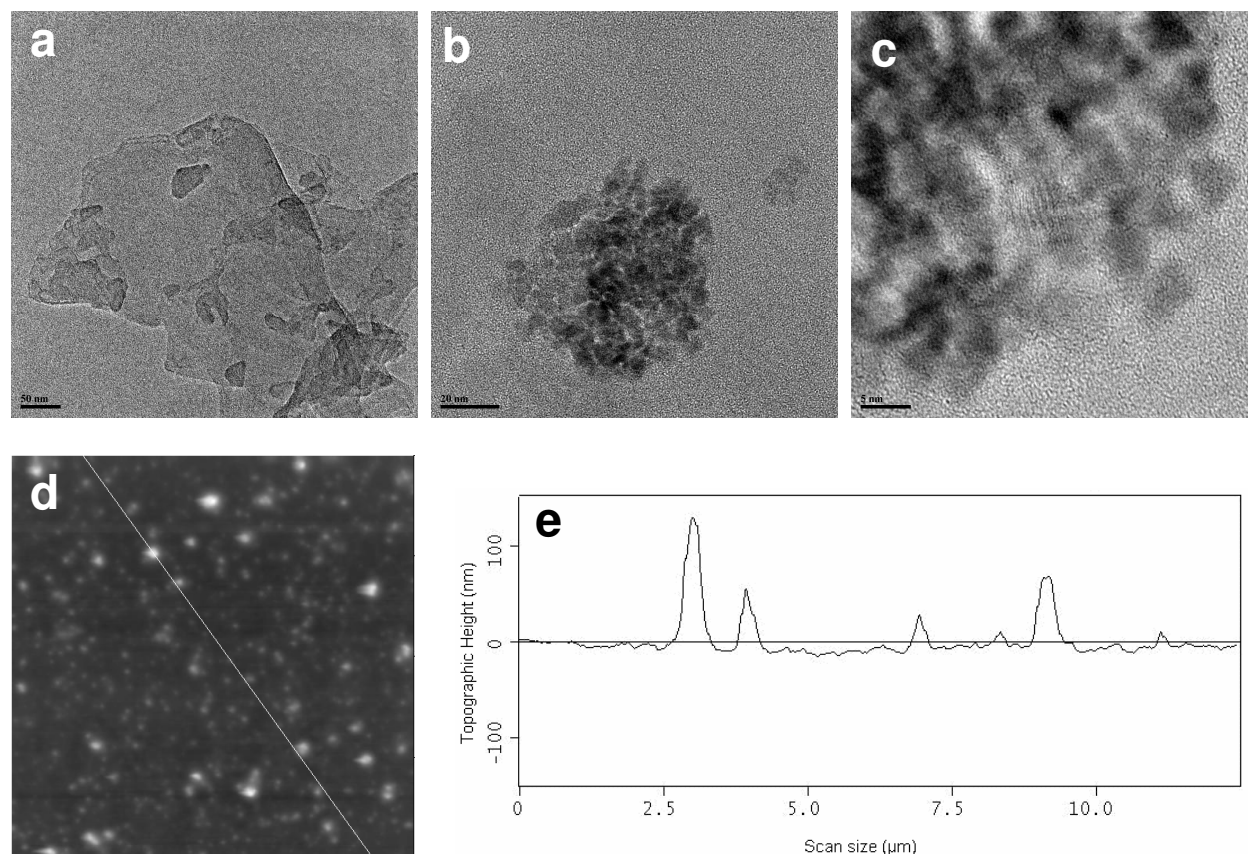


Figure S3. Representative TEM and AFM images of fullerene aggregates. (a) Overview TEM image of unfiltered C₆₀ in DDI showing heterogeneity in size and irregular morphology. Sonicated fullerene suspensions were dropped onto 300 mesh Formvar coated copper grids. All images were high resolution TEM images acquired at 300 kV on a Hitachi-9500 and taken by a 2K Gatan CCD camera with the exposure time of 1s. (b) TEM image of an aggregate cluster of filtered C₆₀ in DDI. (c) close-up TEM image of a cluster of filtered C₆₀ in DDI. (d) AFM image of aggregates of filtered C₆₀ in pH 4 showing polydispersity. AFM imaging was performed in air using a Multimode Nanoscope IIIa (Digital Instrument/Veeco Metrology Group) operated in tapping mode. Etched silicon probes with a nominal spring constant of 50 N/m were used for all images. Image analysis and data processing was performed with Veeco software. The scan size is 10 μm. (e) AFM topographic heights of a section.

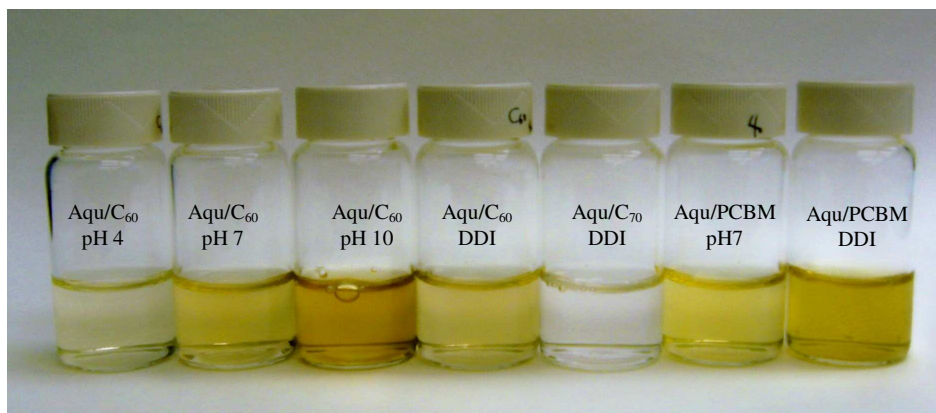


Figure S4. Colors of all the fullerene suspensions at the end of the experiment. It indicated the effect of solution chemistry on the formation of aqueous suspensions. All samples were filtered through a 0.45 μ m filter. From left to right: aqu/C₆₀ at pH 4; aqu/C₆₀ at pH 7; aqu/C₆₀ at pH 10; aqu/C₆₀ in DDI; aqu/C₇₀ in DDI; aqu/PCBM at pH 7; and aqu/PCBM in DDI.