

Supplemental information of

Estuary on a chip: unexpected results for nanoparticles fate and transport

Julien Gigault^{1*}, Marianne Balaesque¹, Hervé Tabuteau^{2*},

¹Laboratoire Géosciences Rennes,
UMR6118 CNRS/Université de Rennes1,
263 Av. Général Leclerc, 35000 Rennes
[*julien.gigault@univ-rennes1.fr](mailto:julien.gigault@univ-rennes1.fr)

²Institut de Physique de Rennes,
UMR6251 CNRS/Université Rennes 1,
263 Av. Général Leclerc, 35000 Rennes
[*herve.tabuteau@univ-rennes1.fr](mailto:herve.tabuteau@univ-rennes1.fr)

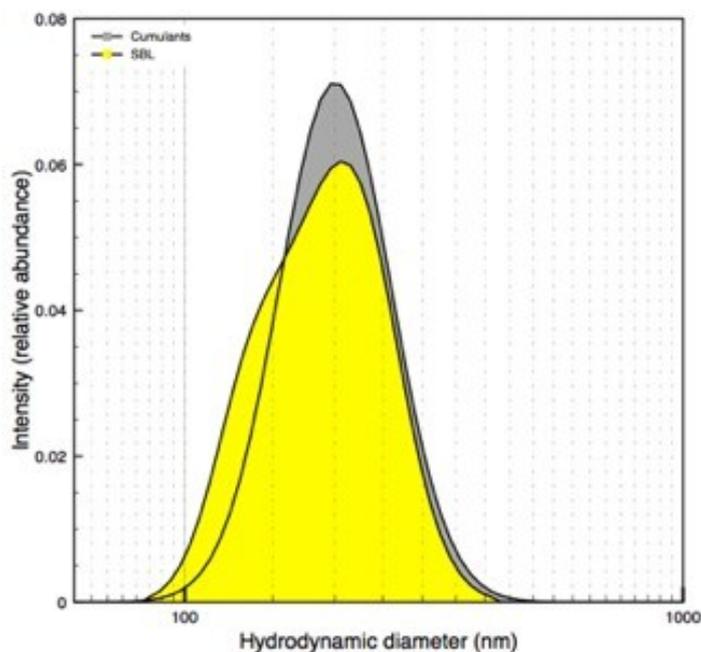


Figure S1: Size distribution of nC₆₀ obtained by DLS using Cumulants (grey) and SBL (yellow) algorithms as described in the experimental and method sections in the main text.

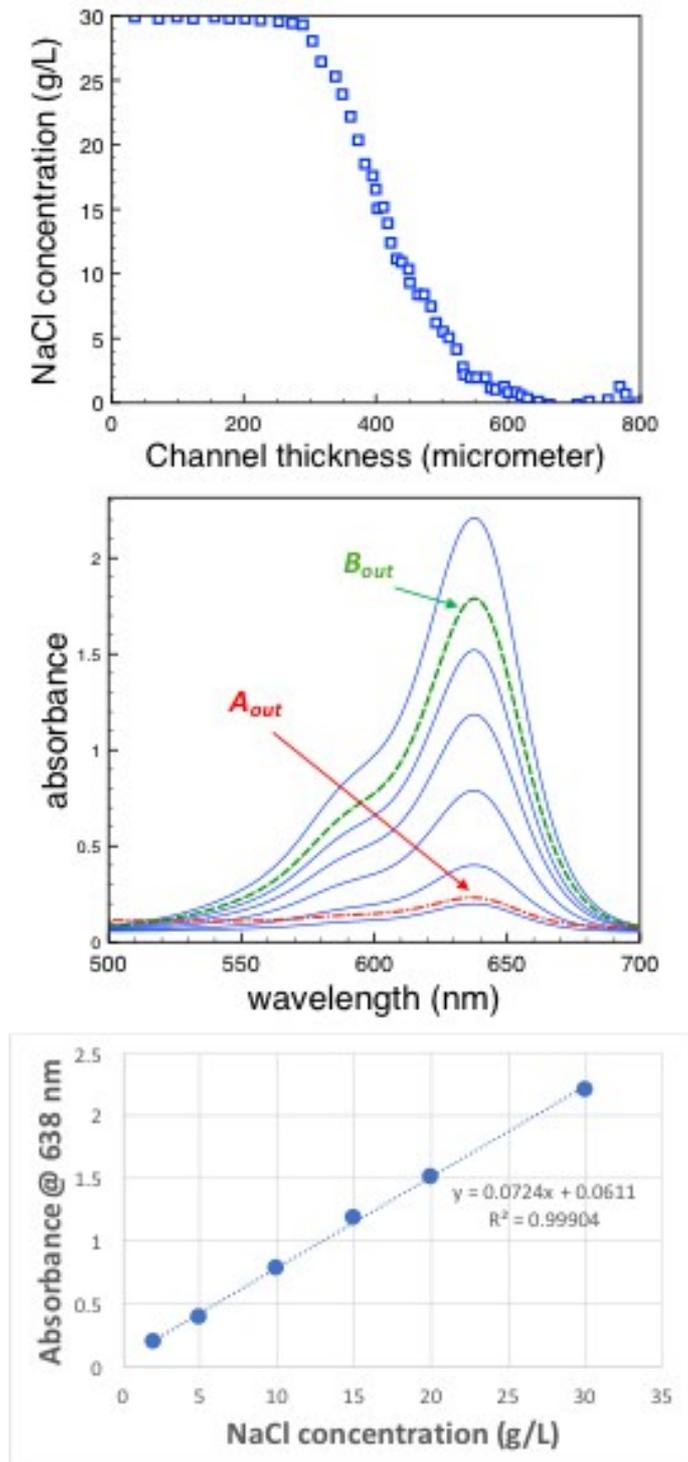


Figure S2: (top) Measured salinity gradient across the width of the microfluidic device. (middle) Absorbance spectrum of the 30 g L^{-1} NaCl stock solution doped with the patent blue, used to calibrate the final average NaCl concentration at the two MD outlets (A_{out} and B_{out}). (bottom) Absorbance Pic at 638 nm for various salt concentration.

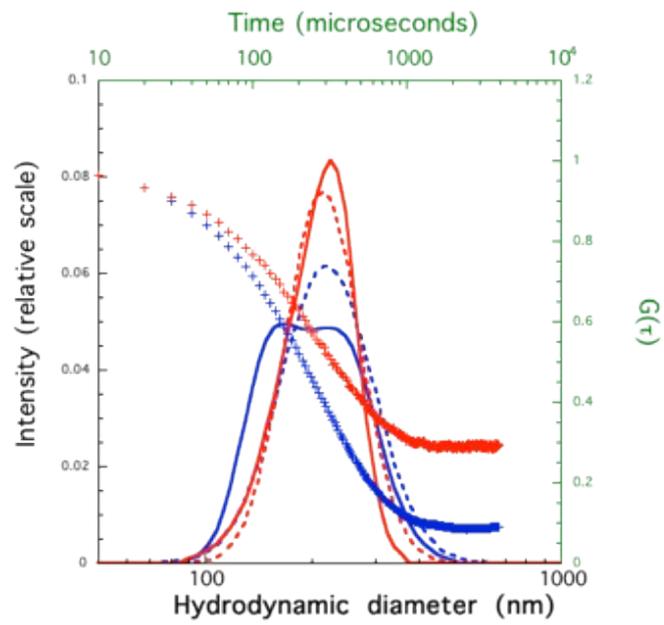
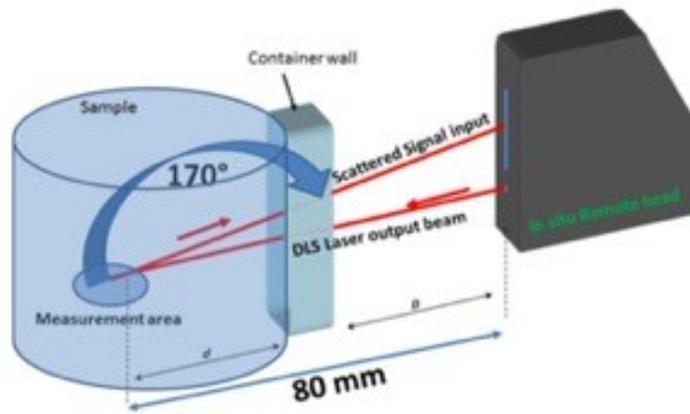


Figure S3 : Size distribution and the autocorrelation function (ACF) of the nC60 characterized by DLS in the collection vials localized at the outlets A_{out} and B_{out} in red and blue, respectively. The dashed-line and the solid-line correspond to the size distributions obtained by the Cumulants and SBL algorithm, respectively.



In situ DLS remote head measurement configuration

Figure S4: Principle of the in-situ DLS measurement.