

Transport and retention of colloidal aggregates of C₆₀ in porous media: effects of organic macromolecules, ionic composition and preparation method.

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Table S1, S2

Figure S1

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Supporting Information

Procedure for cleaning glass beads.

In this procedure, a mechanical blade agitator was used to agitate the glass beads in a 5 L flask with continuous DI water feed while turbidity was measured continuously. When the outlet turbidity dropped below measurable levels, the feed flow was stopped and the water removed. The glass beads were then cleaned with a solution of 0.1 M NaOH for 15 minutes, followed by a new DI water rinse. A 0.1 M solution of HCl was then used to clean the beads, which were then rinsed and cleaned with a 10% H₂SO₄ solution followed by a DI water continuous flow rinse and followed by five rinse cycles with DDW under agitation. Finally, the beads were rinsed in a funnel and dried in an oven at 98°C. Each column was packed with 80 g of clean glass beads using a vortex mixer to insure a reproducible and maximum packing density. After packing, the column was rinsed with 3 L of the feed saline solution to be used in the subsequent column test for 2 hrs.

Supplemental data on electrophoretic mobility

Table S1: Values of electrophoretic mobility as function of the [NaCl] for the three materials used in this work.

[NaCl] M	μ_e ($\mu\text{mcm/Vs}$) THF/ nC_{60}	[NaCl] M	μ_e ($\mu\text{mcm/Vs}$) Fullerols	[NaCl] M	μ_e ($\mu\text{mcm/Vs}$) TTA/ nC_{60}
1.0E-03	-2.78	1.0E-05	-3.21	5.0E-02	-2.14
2.5E-02	-2.20	1.7E-04	-3.30	1.0E-01	-1.99
5.0E-02	-2.09	6.4E-04	-3.41	1.5E-01	-1.87
7.5E-02	-1.72	1.2E-03	-3.68	2.0E-01	-1.82
1.0E-01	-1.72	2.4E-03	-3.54		
1.3E-01	-1.61	4.7E-03	-3.20		
1.5E-01	-1.56	9.2E-03	-3.11		
1.7E-01	-1.43	1.8E-02	-2.79		
2.0E-01	-1.41	3.5E-02	-2.03		
2.2E-01	-1.43	6.8E-02	-1.65		
2.5E-01	-1.41	1.3E-01	-1.35		
2.7E-01	-1.26	2.6E-01	-1.05		

Table S2: Values of electrophoretic mobility at a fixed ionic strength (0.033 M NaCl) function of tannic acid (TA) and Alginate concentration.

[TA] (ppm)	μ_e ($\mu\text{mcm}/\text{Vs}$)	[TA] (ppm) + [NaCl] 0.033M	μ_e ($\mu\text{mcm}/\text{Vs}$)	[Alginate] (ppm)	μ_e ($\mu\text{mcm}/\text{Vs}$)	[Alginate] (ppm) + [NaCl] 0.033M	μ_e ($\mu\text{mcm}/\text{Vs}$)
0	-2.74	0	-2.01	0	-3.07	0	-2.41
0.25	-2.71	0.25	-2.31	0.25	-3.05	0.25	-2.16
0.5	-2.69	0.5	-2.37	0.5	-3.33	0.5	-2.26
0.75	-2.66	0.75	-2.51	0.75	-3.27	0.75	-2.64
1	-2.56	1	-2.48	1	-3.19	1	-2.79
1.25	-2.70	1.25	-2.44	1.25	-3.19	1.25	-2.86
1.5	-2.84	1.5	-2.62	1.5	-3.25	1.5	-3.00
1.75	-2.90	1.75	-2.69	1.75	-3.27	1.75	-3.07
2	-2.79	2	-2.67	2	-3.38	2	-3.20

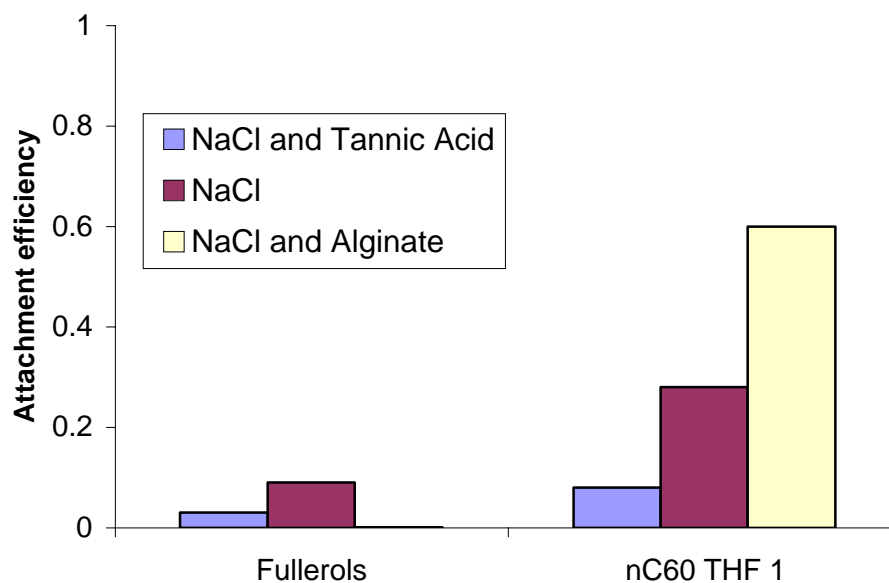


Figure S1. Comparison of attachment efficiencies for different species: fullerols THF/nC₆₀ at [NaCl]=0.33 M.