Electronic Supplementary Material (ESI) for RSC Advances.

Supporting Information

Formation of Cationic Hydrophobic Micro-blocks in P(AM-DMC) by Template Assembly: Characterization and Application in Sludge Dewatering

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1. Determination of charge density (CD).

The charge density (CD) is calculated by the following Equation:

$$CD\ (\%) = \frac{C\ (V - V0)}{C\ (V - V0) + \frac{m - C\ (V - V0)\ M_{DMC}}{M_{AM}}} \quad \text{(S1)}$$

Where M_{DMC} (207.7 g • mol^{-1}) and M_{AM} (71.08 g • mol^{-1}) is the molar mass corresponding to the monomer, respectively; C (0.0025 mol • L^{-1}) is the standard solution concentration of PVSK; V (mL) is the volume of PVSK solution consumed during titration, and V_0 (mL) is the blank control consumption; and m (g) is the weight of the dried sample used for titration.

2. The data for Kelen-Tüdös Method

Table S1 The data for Kelen-Tüdös Method under T/D = 0

f_{DMC}	F_{DMC}	R	p	H	G	ε	η
0.1000	0.0435	9.0000	21.9885	3.6837	8.5907	0.7382	1.7214
0.2000	0.1028	4.0000	8.728	1.8332	3.5417	0.5838	1.1280
0.3000	0.1765	2.3333	4.6657	1.1669	1.8332	0.4717	0.7411
0.4000	0.2389	1.5000	3.1859	0.7063	1.0292	0.3509	0.5113
0.5000	0.3167	1.0000	2.1576	0.4635	0.5365	0.2618	0.3031

Table S2 The data for Kelen-Tüdös Method under T/D = 0.5

f_{DMC}	F_{DMC}	R	p	H	G	ε	η
0.1000	0.0795	9.0000	11.5789	6.9955	8.2227	0.7491	0.8805
0.2000	0.1807	4.0000	4.5340	3.5289	3.1178	0.6010	0.5310
0.3000	0.2739	2.3333	2.6510	2.0537	1.4531	0.4679	0.3305
0.4000	0.3781	1.5000	1.6448	1.3679	0.5880	0.3686	0.1584
0.5000	0.4397	1.0000	1.2742	0.7848	0.2152	0.2509	0.0688

3. Actual sludge flocs image

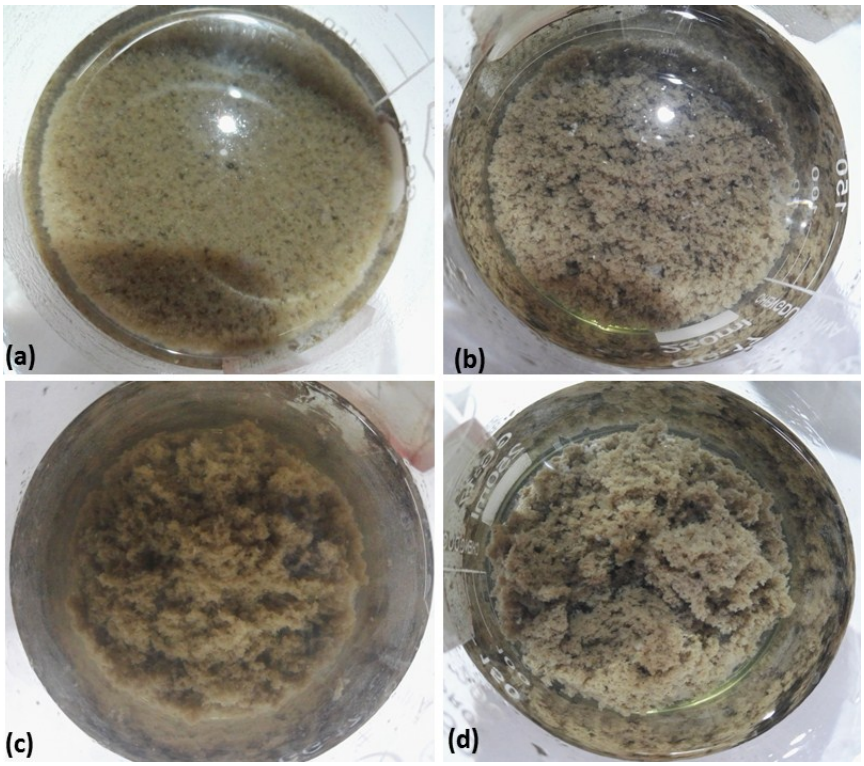

Fig. S1 Actual image of (a) raw sludge, (b) sludge treated by PA-D_2, (c) sludge treated by PA-D_3 and (d) sludge treated by TPA-D_2.

4. Optical microscopy images of sludge flocs

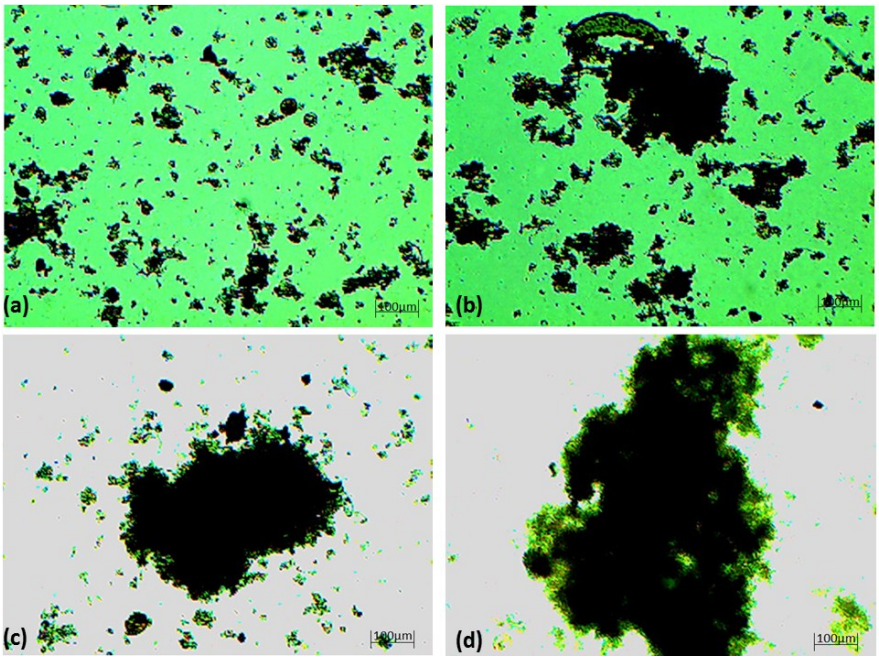

Fig. S2 Optical microscopy images of (a) raw sludge, (b) sludge treated by PA-D_2, (c) sludge treated by PA-D_3 and (d) sludge treated by TPA-D_2.