Supplementary Information

Exploring nonamphiphilic stabilizers as replacement of amphiphilic surfactants for electrochemically synthesized carbon dots

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\[ y = y_0 + \frac{A}{w \sqrt{\pi/2}} \exp\left(-2\left(\frac{x-x_c}{w}\right)^2\right) \]

Fig. S1 Normalized absorbance deconvolution of CD-X (a) As-synthesized, (b) filtered, and (c) centrifuged.
Fig. S2 Normed absorbance deconvolution of CD-Na (a) As-synthesized, (b) filtered, and (c) centrifuged.
Fig. S3 Normed absorbance deconvolution of CD-SDS (a) As-synthesized, (b) filtered, and (c) centrifuged.
Fig. S4 DLS of CD-X centrifuged, 4 separate runs (a), (b), (c), and (d).
Fig. S5 DLS of CD-X filtered, 4 separate runs (a), (b), (c), and (d).
Fig. S6 DLS of CD-Na centrifuged, 4 separate runs (a), (b), (c), and (d).
Fig. S7 DLS of CD-Na filtered 4 separate runs (a), (b), (c), and (d).
Fig. S8 DLS of CD-SDS centrifuged, 4 separate runs (a), (b), (c), and (d).
Fig. S9 DLS of CD-SDS filtered, 4 separate runs (a), (b), (c), and (d).

Table S1 Comparison of the average polydispersity index for CD solutions after centrifugation and post-treatment filtration.

<table>
<thead>
<tr>
<th>CD sample</th>
<th>Polydispersity index (-)</th>
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<tbody>
<tr>
<td></td>
<td>centrifuged</td>
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<tr>
<td>CD-X</td>
<td>0.20</td>
</tr>
<tr>
<td>CD-Na</td>
<td>0.38</td>
</tr>
<tr>
<td>CD-SDS</td>
<td>0.26</td>
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</tbody>
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* Concentration too low for reliable evaluation.
**Fig. S10** Higher magnification TEMs of a) CD-X, b) CD-Na, and c) CD-SDS filtered.
Fig. S11 FTIR of (a) CD-X filtered, (b) CD-Na, and (c) CD-SDS an ATR setup.

Fig. S12 FTIR of pure stainless-steel substrate in an ATR setup.
Fig. S13 (a) Fluorescence spectra deconvolution of centrifuged CD-SDS, (b) filtered CD-SDS, (c) filtered CD-X, and (d) filtered CD-Na. For centrifuged CD-SDS, Cumulative Fit Peak is almost identical to Fit Peak 2.