Supporting information

Evaluating the dialysis time required for carbon dots by HPLC and the properties of the carbon dots after HPLC fractionation

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Diameter = 18.4 ± 8.1 nm
Fig. S7: (a) The TEM image and (b) the energy dispersive x-ray spectra of the C-dots(β)
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Table S1: The fitting parameters of the fluorescence lifetime, the fluorescence anisotropy decay, and fluorescence quenching experiments of C-dots

<table>
<thead>
<tr>
<th></th>
<th>C-dots(α)</th>
<th>C-dots(β)</th>
<th>C-dots(γ)</th>
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<tbody>
<tr>
<td><strong>Fluorescence decay</strong></td>
<td>τ₁ (a₁) 0.28 ns (0.07)</td>
<td>τ₂ (a₂) 1.98 ns (0.24)</td>
<td>τ₃ (a₃) 6.64 ns (0.69)</td>
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<td></td>
<td>τ₁ average 3.62 ns</td>
<td>τ₂ average 3.18 ns</td>
<td>τ₃ average 3.08 ns</td>
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<tr>
<td><strong>Fluorescence quantum yield</strong></td>
<td>Φ_F 0.91%</td>
<td>Φ_F 1.03%</td>
<td>Φ_F 0.77%</td>
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<td><strong>Fluorescence anisotropy</strong></td>
<td>τ_{ani}/ns 0.46 ns</td>
<td>τ_{ani}/ns 0.53 ns</td>
<td>τ_{ani}/ns 0.55 ns</td>
</tr>
<tr>
<td><strong>Fluorescence quenching</strong></td>
<td>K_a (M⁻¹) 6.8×10⁴</td>
<td>K_a (M⁻¹) 2.9×10⁴</td>
<td>K_a (M⁻¹) 3.6×10⁴</td>
</tr>
<tr>
<td><strong>κ</strong></td>
<td>κ 0.27</td>
<td>κ 0.55</td>
<td>κ 0.55</td>
</tr>
</tbody>
</table>

\[ a \quad I(t) = \sum_{i=1}^{3} a_i \tau_i, \tau_{average} = \sum_{i=1}^{3} \frac{a_i \tau_i^2}{a_i \tau_i} \]

\[ b \quad r(t) = A \times e^{-\frac{t}{\tau_{ani}}} \]