Supplementary materials

Amplified Oxidative Stress Therapy of Degradable Copper Phosphate Nanozyme Coated by in situ Polymerization of PEGDA

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Keywords: copper phosphate, nanozymes, oxidative stress therapy, photothermal therapy;
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Table S1 The XPS peak area analysis results of Cu₃(PO₄)₂.

<table>
<thead>
<tr>
<th>Spectrum</th>
<th>Area (P) CPS.eV</th>
<th>RSF</th>
<th>Area/RSF</th>
<th>Atomic ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu 2p</td>
<td>829775.34</td>
<td>3.38</td>
<td>245495.6627</td>
<td>2.953287633</td>
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<tr>
<td>P 2p</td>
<td>58188.36</td>
<td>0.35</td>
<td>166252.4571</td>
<td>2.000000001</td>
</tr>
<tr>
<td>O 1s</td>
<td>514725.98</td>
<td>0.71</td>
<td>724966.169</td>
<td>8.721268626</td>
</tr>
</tbody>
</table>

\[
\theta = \frac{T - T_{surr}}{T_{max} - T_{surr}} \quad \text{Equation S1}
\]
\[
\tau_s = \frac{t}{-\ln \theta} \quad \text{Equation S2}
\]
\[
hS = \frac{cm}{\tau_s} \quad \text{Equation S3}
\]
\[
Q_{dis} = hS(T_{max} - T_{surr}) \quad \text{Equation S4}
\]
\[
\eta = \frac{hS(T_{max} - T_{surr})}{I(1 - 10^{-4\text{Bew}})} \quad \text{Equation S5}
\]

In Equation S1-5, \(T\) is an instant temperature of the time (t), \(T_{surr}\) is initial particle temperature, \(T_{max}\) is maximum temperature, \(c\) is specific heat capacity of water, \(m\) is the mass of the prepared Cu₃(PO₄)₂-water dispersion (3.75 mg/mL), \(h\) is heat-transfer coefficient, \(S\) is the area cross section perpendicular to conduction, and the value of \(hS\) is obtained from the Equation S1-3. The \(Q_{dis}\) represents external heat flux in the system. \(I\) is incident laser power density (2.5 W/cm²), and \(A_{808}\) is the absorbance intensity of the Cu₃(PO₄)₂-water dispersion at 808 nm which was measured as shown in Fig. 2f. \(\eta\) is the photothermal conversion efficiency, which was calculated by Equation S5.