Supplementary information

Figure S1. SEM images and corresponding XRD of precursor spheres before hydrothermal treatment and doping.

Table S1. LA ICPMS analysis results.

<table>
<thead>
<tr>
<th>W added in reaction</th>
<th>Unit</th>
<th>Ti</th>
<th>W</th>
<th>W in product</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.26 wt%</td>
<td>% wt/wt</td>
<td>37.57</td>
<td>0.09796</td>
<td>0.26 wt%</td>
</tr>
</tbody>
</table>

Figure S2. Nitrogen sorption isotherms of Degussa P25 nanoparticles.
Figure S3. Absorbance spectra of the dye detached from sensitized photoanodes prepared using sample W0, W1 and W2.

Figure S4. UV-vis absorbance spectra of the non-doped and W-doped spherical mesoporous TiO₂.
Figure S5. Comparisons of a) current – voltage curves, b) IPCE curves and c) normalized IPCE curves of sensitized photoanodes (12 μm) based Degussa P25 nanoparticles and sample W2.
Figure S6. Current – voltage curves of sensitized photoanodes based on 0.25 at% (W3) and 0.5 at% (W4) W-doped spherical mesoporous TiO$_2$.