Working at the top level with the Microwave reactor
Monowave 400

- Rapid and uniform heating
- Simultaneous internal and IR temperature measurement
- Reliable accuracy and reproducibility
- Integrated digital camera with on-screen operation

FOR APPLICATION EXAMPLES CHECK
www.anton-paar.com/synthesis
Solvothermal Synthesis of Spherical Carbon-doped ZnO Nanoparticles from Saccharose

AP 12 – 18 – 400 013

Keywords Nanoparticles, hybrid nanomaterials, zinc oxide, saccharose, solvothermal

Instrument Monowave 400

Description A G30 vial is charged with saccharose and 1.5 equiv zinc acetate. The solvent is added and the vial is subjected to microwave irradiation.

Workup After cooling the formed precipitate is filtered, washed with EtOH, and dried.

Comments The influence of temperature and time on morphology was investigated. Only at 150 °C clear spherical agglomerates have been observed. The size of agglomerates increases with irradiation time. Carbon-doped TiO2 particles have been prepared in a similar way (see AP 11 – 18 – 400 012). The electrochemical properties of the prepared hybrid materials indicate applicability for photoelectrodes and solar cells.

Yield: n.a. (isolated)

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<thead>
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</thead>
<tbody>
<tr>
<td>557-34-6</td>
<td>Zinc acetate</td>
<td>183.48</td>
<td>2.19</td>
<td>0.4 g</td>
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<tr>
<td>57-50-1</td>
<td>Saccharose</td>
<td>342.29</td>
<td>1.46</td>
<td>0.5 g</td>
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<td>64-17-5</td>
<td>Ethanol</td>
<td>46.07</td>
<td>0.789</td>
<td>solvent</td>
<td>9 mL</td>
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