



FOR
APPLICATION
EXAMPLES
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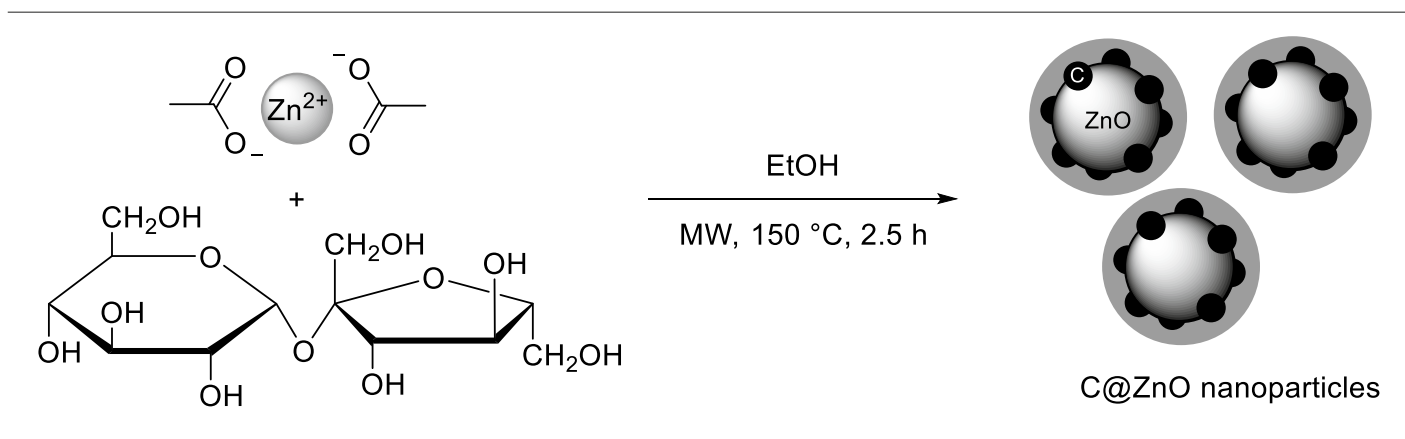
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Working at the top level with the Microwave reactor Monowave 400

- Rapid and uniform heating
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Solvothermal Synthesis of Spherical Carbon-doped ZnO Nanoparticles from Saccharose

AP 12 – 18 – 400 013



Yield: n.a. (isolated)

Chemicals [CAS]	Chemicals (Name)	MW [g/mol]	Density [g/mL]	Amount [mmol]	Mass/Volume
557-34-6	Zinc acetate	183.48		2.19	0.4 g
57-50-1	Saccharose	342.29		1.46	0.5 g
64-17-5	Ethanol	46.07	0.789	solvent	9 mL

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 TiO ₂ 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.