Synthesis of mesoporous TiO_2 using ultrasonic spray method

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Mesoporous TiO_2 particles with well-defined mesopores were synthesized by an ultrasonic spray method, which dose not require the additional process like a hydrothermal process in continuously producing mesoporous TiO_2 within 1 min. Due to their high surface area and uniform pore size, they are used for gas sensors, catalysis, separation processes, support of nano-materials and other various fields.

X-ray diffractometer (XRD, Model D/Max-IIC), scanning electron microscopy (SEM. Model Hitachi S4800), transmission electron microscopy (TEM, Model Tecnai F30 s-Twin) and surface area & pore size analyzer (Model NOVA 4200) were employed to study the pore structure and morphology, and to analyze pore size and surface area.