

## Template-free strategy to synthesize mesoporous metal oxide

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In the presentation, a template-free method for mesoporous transition-metal oxides with high crystallinity, which method has been proposed by us<sup>1-4</sup>, is briefly introduced. The directly schematic illustration on template-free method is shown in Figure 1a. Here, we choose metal oxalates as precursors due to their low decomposition temperature, by-products CO<sub>2</sub> and H<sub>2</sub>O and the metal oxalate can be large-scaled synthesized by solution precipitation method. The mesoporous metal oxide assembled by corresponding metal oxides nanoparticles or nanobricks can be obtained by simple thermal decomposition of metal oxalate. Figure 1b is the SEM image of as-synthesized mesoporous gamma iron oxide, which shows nanoassembled mesostructure. The

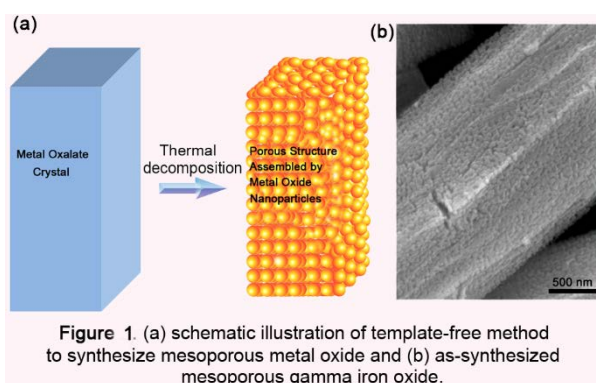


Figure 1. (a) schematic illustration of template-free method to synthesize mesoporous metal oxide and (b) as-synthesized mesoporous gamma iron oxide.

template-free method has been applied to synthesize many transition-metal oxides. Importantly, the method is a low-cost, environmental benign method and is easy to scale up.

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