

## Synthesis of Co microtrees assembled by dendrites and their microwave absorption characteristics

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In this work, we have investigated a mild chemical procedure to synthesize cobalt microtrees assembled by many dendrites at room temperature using hydrazine hydrate as the reductive agent. The structure and morphology of the as obtained products were characterized by X-ray diffractometer (XRD), transmission electron microscopy (TEM), field emission scanning electron microscopy (FE-SEM) and vibrating sample magnetometer (VSM). It was found that the dosage of hydrazine hydrate played an important role in the morphology control and the glycol as directing agent of the produced cobalt crystals. These parameters are drastically influenced the morphologies of the final products. The growth mechanism was briefly discussed on the basis of controlled experiments. Additionally, magnetization measurement revealed that the cobalt microtrees exhibited ferromagnetic characteristics at room temperature and we have investigated the microwave absorption characteristics of the magnetic microstructures.

**Keywords:** Cobalt microtrees, Morphologies, Magnetization, Dendritic petals