

Metal ion-assisted reshaping of shaped Cu₂O nanocrystals and their catalytic activity for CO oxidation

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Copper oxide materials can be used as catalysts for CO oxidation, gas detoxification, water splitting photocatalytic reaction, and as electrode materials for lithium ion batteries, etc. We prepared two different shapes of Cu₂O nanocrystals of cubes and octahedra, and investigated its reconstruction upon the addition of various metal ions. The Cu₂O was oxidized into CuO and these Cu₂O/CuO composites were analyzed with ICP, XPS, TEM, FIB, etc. The cubes and octahedra turned into unique shapes, and the mechanism for the reshaping was speculated. The composites with unique shapes showed interesting catalytic property for CO oxidation.