New synthetic routes to more active Cu/ZnO catalysts used for methanol synthesis

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New preparation routes are applied to synthesize novel Cu/ZnO catalysts exhibiting high catalytic activity in methanol synthesis. In particular, the deposition–precipitation of copper onto high specific surface area (SSA) zinc oxide particles and the chemical vapor deposition of diethyl zinc turned out to be effective techniques, leading to promising methanol synthesis catalysts due to the enlargement of the Cu-ZnO interface.

KEY WORDS: Cu-based catalysts; methanol synthesis; coprecipitation; deposition–precipitation; chemical vapor deposition (CVD); area-activity relationship; Cu-ZnO interface.