

REACTION KINETICS, CATALYSIS AND.....

活性纳米金颗粒在介孔分子筛SBA-15上的分散

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摘要 Chemical modification (CM) and deposition-precipitation (DP) methods were used for the

dispersion of active Au nanoparticles on mesoporous silica materials in this work. XRD, TEM, N₂ adsorption isotherms and UV-Vis absorption spectra were used to characterize in detail Au-SBA-15 materials prepared by the two methods. The analysis results showed that high loading (1.7%, by mass) and uniform Au nanoparticles (approximately 3 nm) were dispersed in the channels of mesoporous SBA-15 by the CM method. While for the DP method,

most of Au nanoparticles with the size of 10—15nm were aggregated outside of the channels of SBA-15 and the actual loading of Au was only 0.38% (by mass).

关键词 [SBA-15](#) [Au-SBA-15](#) [Au nanoparticles](#) [deposition-precipitation](#) [chemical modification](#)

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Dispersion of active Au nanoparticles on mesoporous SBA-15 materials

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Abstract Chemical modification (CM) and deposition-precipitation (DP) methods were used for the dispersion of active Au nanoparticles on mesoporous silica materials in this work. XRD, TEM, N₂ adsorption isotherms and UV-Vis absorption spectra were used to characterize in detail Au-SBA-15 materials prepared by the two methods. The analysis results showed that high loading (1.7%, by mass) and uniform Au nanoparticles (approximately 3 nm) were dispersed in the channels of mesoporous SBA-15 by the CM method. While for the DP method, most of Au nanoparticles with the size of 10—15nm were aggregated outside of the channels of SBA-15 and the actual loading of Au was only 0.38% (by mass).

Key words [SBA-15](#); [Au-SBA-15](#); [Au nanoparticles](#); [deposition-precipitation](#); [chemical modification](#)

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