

Fabrication of new silica-titania network solid acid catalysts and its application

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The esterification of acetic acid with ethanol was carried out with silica-titania networked solid acid catalyst as proton donating materials. This catalyst is hydrophilic and acidic due to immobilized sulfonic acid moiety in the SiO₂-TiO₂ network. This catalyst is also hydrophilic to absorb the water formed by esterification so that the equilibrium of this reaction was shifted to the formation of corresponding ester. The shift of esterification to right side was owing to continuous removal of water due to the high water absorption capability of catalyst. The morphology of catalyst was determined using small angle X-ray diffraction, TEM and EDAX