

Dehydrofluorination of 1,1,2,3,3,3-hexafluoropropane to 1,2,3,3,3-pentafluoropropene as intermediate to produce a refrigerant 2,3,3,3-tetrafluoropropene (HFO-1234yf) using fluorinated metal catalysts

Hilman Hutama, 하정명*, 안병성, 김창수, 최재욱
한국과학기술연구원
(jmha@kist.re.kr*)

Environmentally-friendly refrigerant HFO-1234yf (2,3,3,3-tetrafluoropropene) has been developed particularly for the air conditioning in automobiles. One of the major reaction pathways to produce HFO-1234yf is dehydrofluorination of 236ea (1,1,2,3,3,3-hexafluoropropane) to 1225ye (1,2,3,3,3-pentafluoropropene) and 245eb (1,2,3,3,3-pentafluoropropane) to HFO-1234yf. In this study, we attempted to obtain highly dispersed porous catalytic materials such as fluorinated metal oxides. The catalysts were prepared by modified sol-gel methods and characterized with XPS, XRD, and N₂-physisorption. The prepared catalysts were used for the dehydrofluorination and exhibited certain catalytic activity.