

포름산 합성용 팔라듐계 촉매 개발을 위한
질화탄소($g-C_3N_4$) 지지체의 응용

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We have investigated graphitic carbon nitride ($g-C_3N_4$) as a CO_2 activating support material for heterogeneous Pd catalyst on direct synthesis of HCOOH under neutral condition. This novel support has an ability to adsorb CO_2 and provide an activated form of carbonate or formate species to Pd. As a result, the activity of Pd catalysts is remarkably enhanced compared to inert support such as CNT. Moreover, Pd/ $g-C_3N_4$ catalyst exhibits remarkable stability during the catalytic reaction under neutral condition, which is essential property for the practical applications. Therefore, by using $g-C_3N_4$ as a support, the enhanced activity and stability could be achieved without secondary noble metal such as gold, silver, or ruthenium.