QINQIN WANG
Shihezi University,
China

Application of non-metallic catalyst in the synthesis of vinyl chloride

Abstract:

The production of polyvinyl chloride (PVC) by acetylene method is quickly developing in the Xinjiang region; however, serious mercury pollution has been an obstacle to the survival and development of this technology. Therefore, the exploitation of a "non-mercury catalyst" is of great importance for acetylene hydrochlorination reaction. Previous investigation demonstrated that Au catalyst displayed excellent catalytic performance for acetylene hydrochlorination; however, Au catalyst was expensive and scarce. Therefore, a "non-mercury catalyst" with low cost and excellent catalytic performance is of great importance to produce PVC by the acetylene method. In this report, it is successful to develop a new series of carbon-nitrogen non-metallic catalysts for acetylene hydrochlorination. We enhance the catalytic activity and stability through the precise and controllable design of large pores and defective structures with catalysts and novel regeneration methods and initially explore the structural modulation of high-density pyridinic-FeN4 based on carbon-nitrogen materials. A mercury-free acetylene hydrochlorination catalyst with low cost and high performance was obtained to provide a technical data basis for the clean production of acetylene polyvinyl chloride.conductivity. Acceptable transport efficiency and correlation coefficients (R2> 99 %) and a reproducibility of %3.15 (n=10) was obtained. This system was an applicable, simple and inexpensive low voltage bio-device comparable to the introduced systems such as capillary electrophoresis.

Biography

Qinqin Wang has completed her PhD in Chemical Engineering from Tianjin University and associate professor at School of Chemistry and Chemical Engineering, Shihezi University. She is mainly engaged in the research and development of mercury-free catalysts for acetylene hydrochloride, green catalysis for the acetylene chemical industry, design and synthesis of high-performance metal catalysts and other industrial catalysis research. She has published more than 20 papers in reputed journals.