

生物油中酚类化合物加氢脱氧催化剂研究进展

王威燕, 张小哲, 杨运泉*, 杨彦松, 彭会左, 刘文英

湘潭大学化工学院, 湖南湘潭 411105

WANG Weiyang, ZHANG Xiaozhe, YANG Yunquan*, YANG Yansong, PENG Huizuo, LIU Wenyang

School of Chemical Engineering, Xiangtan University, Xiangtan 411105, Hunan, China

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摘要 随着化石能源日益匮乏, 生物质热裂解制备生物油广受关注. 然而, 生物油中含有大量酚、呋喃、醛、酮等含氧化合物, 含氧量高达 50%, 导致其热值低、化学稳定性差等, 因而阻碍了它的广泛应用, 必须对其进行加氢脱氧精制降低含氧量. 在生物油中众多含氧化合物中, 酚羟基氧被认为是最难被脱除的. 对酚类含氧化合物加氢脱氧催化剂及反应进行了简单综述, 并提出了如何进一步提高催化剂性能的有效方法.

关键词: 酚类化合物 加氢脱氧 生物油 清洁燃油

Abstract: With the declining of crude oil resources, the development of bio-oil from biomass into fast pyrolysis has attracted much attention. However, the bio-oil contains many oxygenic compounds such as phenols, furans, aldehyde, ketone, etc., and its oxygen content is high up to 50%, leading to its low heating value and thermal instability, which hinders its extensive application. It is necessary to remove the oxygen from bio-oil by a hydrodeoxygenation (HDO) process. Among many oxygenic compounds, phenolic hydroxyl oxygen is considered the most difficult one to be removed. The HDO of phenols was reviewed and the effective way for further improving the catalyst activity was proposed.

Keywords: phenol compound, hydrodeoxygenation, bio-oil, clean fuel

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