

RESEARCH NOTES

Al-Zn-Mg / Fe 复合粉体降解水体中氯代有机物污染的研究

解淑民^a, 万平玉^a, Andrew.J.Feitz^b, GUANJing^a, 杨晓波^a, 刘小光^a

^a Beijing University of Chemical Technology, Beijing 100029, China

^b Centre for Water and Waste Technology, The University of New South Wales, Australia

收稿日期 修回日期 网络版发布日期 接受日期

摘要 Micro-scale Al-Zn-Mg/Fe composite powders (MAF) with high reactivity and good storage properties were prepared by reducing iron onto the surface of Al-Zn-Mg alloy powders. Experimental results show that MAF as advanced zero-valent iron are highly effective for degradation of chlorinated organic compounds. The efficiency of degradation for carbon tetrachloride and perchloroethylene is higher than 99% within a period of 2 h. The efficiency of degradation for trichloroethylene by MAF after storing for one month is equivalent to that by freshly prepared nano-size zero-valent iron particles.

关键词 氯代 复合粉体 降解 研究 有机物污染 Al-Fe 体系

分类号

DOI:

Dechlorination of Chlorinated Aliphatic Compounds by Micro-scale Al-Zn-Mg/Fe Powders as Advanced Zero-valent Iron

XIE Shumin^a, WAN Pingyu^a, Andrew.J.Feitz^b, GUANJing^a, YANG Xiaobo^a, LIU Xiaoguang^a

^a Beijing University of Chemical Technology, Beijing 100029, China

^b Centre for Water and Waste Technology, The University of New South Wales, Australia

Received Revised Online Accepted

Abstract Micro-scale Al-Zn-Mg/Fe composite powders (MAF) with high reactivity and good storage properties were prepared by reducing iron onto the surface of Al-Zn-Mg alloy powders. Experimental results show that MAF as advanced zero-valent iron are highly effective for degradation of chlorinated organic compounds. The efficiency of degradation for carbon tetrachloride and perchloroethylene is higher than 99% within a period of 2 h. The efficiency of degradation for trichloroethylene by MAF after storing for one month is equivalent to that by freshly prepared nano-size zero-valent iron particles.

Key words chlorinated organic compound, degradation, micro-scale Al-Zn-Mg/Fe powder

通讯作者:

解淑民 pywam@mail.buct.edu.cn

作者个人主页: 解淑民^a, 万平玉^a, Andrew.J.Feitz^b, GUANJing^a, 杨晓波^a, 刘小光^a

扩展功能

- 本文信息
- Supporting Info
- PDF (1168KB)
- HTML全文 (OKB)
- 参考文献
- 服务与反馈
- 如本文难找请留言
- 加入我的书签
- 加入我的收藏夹
- 打印本文
- Email Alert
- 文章反馈
- 浏览反馈信息
- 相关信息
- 本库中 包含“氯代” 的相关文章
- 本文件者相关文章
 - 解淑民
 - 万平玉
 - Andrew.J.Feitz
 - GUANJing
 - 杨晓波
 - 刘小光