

<<第二届先进纺织材料及加工技术>>

图书基本信息

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### 内容概要

先进纺织材料及加工技术国际会议由浙江理工大学、先进纺织材料与制备技术教育部重点实验室主办。会议于2010年10月20日至24日在中国杭州举行。

杭州是经济繁荣的中国东南省份浙江的省会，是历史悠久的丝绸之府和声名远播的现代纺织工业基地。

杭州也因拥有梦幻般的西子湖和深厚的文化底蕴，成为中国最知名的旅游胜地之一。

丰富的历史遗迹、优秀的人文艺术景观、环境优雅的酒店、精致的饮食和引人入胜的风景，使得杭州不愧为一个理想的会议举办地。

本书即为该次会议的论文集，收录了一百余篇论文成果。

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## 章节摘录

插图 : 1 Introduction The gaseous ammonia is generated by a continuous decomposition of antifreeze admixtures based on urea compounds in the concrete wall under alkaline and warm condition, and then release to indoor environment through slow diffusion and have led to the increasing indoor air pollution. Therefore, how to reduce the risk caused by ammonia in indoor air becomes a big issue in some countries particularly China. In recent years, several studies involved in the decomposition of indoor ammonia with nano-TiO<sub>2</sub> loaded woven fabrics as the photocatalysts have been reported. However, it is known that some disadvantages such as higher cost hindered the nano-TiO<sub>2</sub> particles from using as the photocatalyst in an industrial scale. Hence, it is necessary to explore new catalysts for the decomposition of indoor ammonia by using lower-cost polymer materials. Fe(III)-modified polyacrylonitrile (PAN) fiber complexes have been used as a low-cost and effective heterogeneous Fenton catalyst in the decomposition of textile dyes in wastewater since they could enhance the decomposition of H<sub>2</sub>O<sub>2</sub> into hydroxyl radicals with high oxidative power. In this work, the Fe(III)-amidoximated PAN fiber complexes (Fe-AO-PAN) were firstly prepared and expected to serve as the catalyst for the oxidation of ammonia in indoor air. And some important effecting factors such as catalyst dosage, Fe content of the catalyst, initial ammonia concentration and gas flow rate were investigated and discussed.

## 2 Experimental methods

### 2.1 Materials and reagents

Acrylic knitting yarns consisted of twisted acrylic fibers containing 87.07% acrylonitrile monomer are purchased from Kunshan Shilin Woolen Spinning Company (Shanghai, China). Hydroxylamine hydrochloride, sodium hydroxide, ammonia water and ferric chloride were of agent grade.

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