

- [25] 虞献文, 陈燕艳, 应桃开, 等. 多孔硅新的表面处理技术[J]. 半导体学报, 2005(26): 406-409.
YU Xian-wen, CHEN Yan-yan, YING Tao-kai, et al. New surface treatment technique of porous silicon[J]. *Chinese Journal of Semiconductors*, 2005(26): 406-409.
- [26] 贾金涛. 多孔硅的制备及稳定化研究[D]. 南京: 南京理工大学, 2007.
JIA Jin-tao. Study on the preparation and stability of porous silicon [D]. Nanjing: Nanjing Institute of Technology, 2007.

Stability of Porous Silicon with Silane Coupling Agent

WANG Shou-xu, SHEN Rui-qi, YE Ying-hua, HU Yan

(Nanjing University of Science and Technology, Chemical Engineering School, Nanjing 210094, China)

Abstract: The uncracked porous silicon (PS) membrane which was fabricated by electrochemical etching technic was used to create nanoenergetic materials (nEMs) in experiments. The average diameter of pores was 4.3 nm, and the thickness of PS membrane was over 100 μm . The surface of PS membrane was modified by suitable coupling agents (KH550, KH560 and KH570). The infra-red spectrum (IR spectrum) of samples was tested by FTIR technology. The experimental results show that the coupling agents can remove the handing bonds on the surface of PS membrane by translating unstable bond of Si—H to much more stable chemical bond Si—OR. And KH550 and KH570 were more suitable to remove the handing bonds than KH560.

Key words: applied chemistry; porous silicon; Silane coupling agent; surface modification; banding bond; stability

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《含能材料》创刊 20 周年纪念活动——专刊征稿

2013 年,《含能材料》迎来创刊 20 周年。过去的 20 年,是我国含能材料科学技术事业大发展的 20 年,也是《含能材料》稳步发展、茁壮成长的 20 年。作为以董海山院士为代表的我国火炸药科技事业的开拓者们创建的专业学术期刊,《含能材料》见证了我国火炸药、推进剂等领域 20 年来的光辉发展历程。20 年来,《含能材料》凝炼出“传承火药文明,创新能源材料”的办刊理念。

重温过去,展望未来,为纪念《含能材料》创刊 20 周年,《含能材料》将于 2013 年 4 月(第 2 期)出版“《含能材料》创刊 20 周年纪念专刊”,并特设新能源材料专栏,报道聚变能源材料、储氢材料、金属氢等新能源材料的研究成果。

为此,特向国内外广大专家征集研究快报、研究论文和综述,以期集中反映我国近年来在含能材料、新概念含能材料及其相关领域取得的重要学术成果。

稿件类型:(1) 简要报道新概念含能材料最新研究成果的研究快报(英文),以基金项目为主。(2) 具有较高创新性的原创研究论文;(3) 具有较高水平的综述文章。

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