

材料化学工程与纳米技术

MMA/BA共聚物改性的水性聚氨酯的合成与表征

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摘要 以1, 4-丁二醇 (BDO)、二羟甲基丙酸 (DMPA) 和己二酸二酰肼 (ADH) 为扩链剂, 以甲基丙烯酸甲酯 (MMA) 和丙烯酸丁酯 (BA) 改性聚氨酯 (PU), 得聚氨酯-丙烯酸酯复合乳液 (PUA). 研究了BA和二丙酮丙烯酰胺 (DAAM) 对乳液及膜性能和粘接性能的影响, 并用傅立叶红外光谱 (FTIR) 仪对PUA复合乳液进行了结构表征. 实验结果表明当BA含量为4.0%~6.0%, DAAM含量为2.0%~3.0%时, 乳液和膜性能较好, 黏度性能较佳. 用该乳液配制的胶黏剂对木材有很好的粘接性能.

关键词 [水性聚氨酯](#) [MMA/BA共聚物](#) [木材](#) [胶黏剂](#)

分类号

Synthesis of aqueous polyurethane modified by methyl methacrylate and butyl acrylate copolymer

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Abstract

The waterborne polyurethane-acrylate hybrid emulsions modified by methyl methacrylate (MMA) and butyl acrylate (BA) copolymer were synthesized by using 1,4-butanediol (BDO), dimethylolpropionic (DMPA) and adipic dihydrazide (ADH) as chain extenders. The effects of the amounts of BA and diacetone acrylamide (DAAM) on the properties of hybrid emulsions, films and adhesive were studied. The structure of the hybrid emulsions was characterized with Fourier transform infrared (FTIR). The experiment results showed that when the amount of BA was 4.0%—6.0%, that of DAAM was 2.0%—3.0%, the properties of the hybrid emulsion, films and adhesive were satisfactory. The adhesive which was made by polyurethane-acrylate hybrid emulsion with a better adhesive for wood.

Key words [aqueous polyurethane](#) [MMA/BA copolymer](#) [wood](#) [adhesive](#)

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