

材料化学工程与纳米技术

聚(β -烷氧基)对萘乙炔的超声合成

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摘要 用 β -萘酚、 $\text{H}(\text{CH}_2)_m\text{Br}$ ($m=4, 6, 8, 9$) 为原料, 超声辐射合成出聚(β -烷氧基)对萘撑乙烯(PAONV), 研究了反应条件对中间体和聚合物产率的影响, 用IR和 ^1H NMR对中间体和聚合物的结构进行表征. 实验结果表明: 超声辐射合成PAONV的产率比回流搅拌合成的要高, PAONV总收率达74.4%, 反应时间由35小时缩短到20小时; $\text{C}_2\text{H}_5\text{ONa}$ 作为碱性试剂比NaOH更有利于提高醚化反应的产率; 强极性的二甲亚砜溶剂(DMSO)能提高脱氯化氢反应的产率; 醚化、双氯甲基化和脱氯化氢反应的最佳反应时间分别是5h、5h、10h.

关键词 [超声合成](#) [\$\beta\$ -萘酚](#) [聚\(\$\beta\$ -烷氧基\)对萘乙炔](#) [表征](#)

分类号

Ultrasonic synthesis of poly (β -alkoxy,naphthalene vinylene)

Abstract

Poly (β -alkoxy,naphthalene vinylene) (PAONV) was synthesized from β -naphthol and $\text{H}(\text{CH}_2)_m\text{Br}$ ($m=4,6,8,9$) under ultrasonic irradiation. The influences of reaction conditions on the yield of intermediates and polymers were studied. The structure of intermediates and polymers were characterized with IR and ^1H NMR spectroscopy. These results showed that the total yield of PAONV under ultrasonic irradiation was 70.0%—74.4%, higher than that under reflux stirring. The reaction time was shortened from 35 h to 20 h. The yield of etherification in the $\text{C}_2\text{H}_5\text{ONa}$ system was higher than that in the NaOH system. The dimethyl sufoxide as a strong polar solvent favored the yield of dehydrochlorination. The best reaction times of etherification, chloromethylation, dehydrochlorination were 5 h, 5 h, 10 h, respectively.

Key words [ultrasonic synthesis](#) [\$\beta\$ -naphthol](#) [poly\(\$\beta\$ -alkoxy naphthalene vinylene\)](#) [characterization](#)

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