

RESEARCH PAPERS

丙烯腈与N-乙烯基吡咯烷酮在H₂O/DMSO混合试剂中共聚反应动力学研究

陈厚^a, 王成国^a, 梁英^b, 蔡华甦^a

^a Carbon fiber center, College of Materials Science and Engineering, Shandong University, Jinan 250061, China

^b Shangdong Institute of Metrology, Jinan 250014, China

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摘要 Kinetics of copolymerization of acrylonitrile(AN) with N-vinylpyrrolidone(NVP) initiated by azodiisobutyronitrile(AIBN) was investigated in H₂O/dimethyl sulphoxide(DMSO) mixture between 50°C and 70°C under N₂ atmosphere. The rate of copolymerization and particle size were measured respectively. The kinetic equation $R_p \propto c_{AIBN} c_{AN} c_{NVP}$ at 60°C. The overall activation energy for copolymerization system was computed as 87.3 kJ.mol⁻¹. Effect of additives of hydroquinone and dioxane on copolymerization was discussed. The polymerization is retarded

by hydroquinone and accelerated by dioxane, which confirms the free radical copolymerization of AN with NVP.

关键词 [acrylonitrile](#) [N-vinylpyrrolidone](#) [copolymerization kinetics](#)

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Kinetics of Copolymerization of Acrylonitrile with N-Vinylpyrrolidone in H₂O/Dimethyl Sulphoxide Mixture

CHEN Hou^a, WANG Chengguo^a, LIANG Ying^b, CAI Huasu^a

^a Carbon fiber center, College of Materials Science and Engineering, Shandong University, Jinan 250061, China

^b Shangdong Institute of Metrology, Jinan 250014, China

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Abstract Kinetics of copolymerization of acrylonitrile(AN) with N-vinylpyrrolidone(NVP) initiated by azodiisobutyronitrile(AIBN) was investigated in H₂O/dimethyl sulphoxide(DMSO) mixture between 50°C and 70°C under N₂ atmosphere. The rate of copolymerization and particle size were measured respectively. The kinetic equation $R_p \propto c_{AIBN} c_{AN} c_{NVP}$ at 60°C. The overall activation energy for copolymerization system was computed as 87.3 kJ.mol⁻¹. Effect of additives of hydroquinone and dioxane on copolymerization was discussed. The polymerization is retarded by hydroquinone and accelerated by dioxane, which confirms the free radical copolymerization of AN with NVP.

Key words [acrylonitrile](#); [N-vinylpyrrolidone](#); [copolymerization kinetics](#)

通讯作者:

陈厚

作者个人主页: 陈厚^a; 王成国^a; 梁英^b; 蔡华甦^a

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