Title: Synthesia and Characterization of Novel Cationic Urethane Gemini Surfactant as Deinking Agent

Abstract: In this research, we have been synthesized novel cationic urethane Gemini surfactant (CUGS) as deinking agent in three steps. At the first, hyrophobically ethoxylate urethane with tertiary amine terminal group was prepared from lauryl alcohol 7 mole ethoxylate (LA7EO), N,N-dimethylethanolamine (DMEA) and hexamethylene diisocyanate (HDI) in the presence of dibutyltin dilaurate (DBTDL) as catalyst and acetone as a reaction solvent. In the second step, the CUGS was synthesized by quaternizing tertiary amine terminal group of hyrophobically ethoxylate urethane by 1,8-diboromoctane. Finally, acetone was removed by vacuum oven. The CUGA was characterized by H-NMR and FT-IR. The CUGS was investigated as deinking agent. In this study, a commercial polyethylene film with water based printing ink was deinked using cationic surfactant dodecyltrimethylammonium bromide (DTAB) and CUGS as a novel cationic Gemini surfactant. Solutions of CUGS have been the most effective at deinking and were showed high efficiency at high pH levels. Deinking of CUGS is more effective than DTAB.

Keywords: synthesis, gemini surfactant, deinking, uretheane.

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The content of this page is in Persian and is not translated. It seems to discuss the publication and its details.