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Synthesis of Novel Cationic Gemini surfactants and used their to Treatment W/O Emulsions which formation in heavy crude oil.

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ABSTRACT

Selected cationic Gemini surfactants were effective in separating Water – in – Oil emulsions, where cationic Gemini surfactants are C_{12} -2BU – C_{12} and C_{10} - 2BU- C_{10} that have alkyl chain length of 10 and 12. The characterization by FT – IR, 1H NMR, ^{13}C NMR and mass spectra verified the structural characters of these new Gemini surfactants. The basic surface properties of these novel Gemini surfactants were investigated through measuring the relationship between the electrical conductivity and the surfactant concentration to determine critical micelles concentration CMC. Demulsification (emulsion breaking) is necessary in many practical applications as the petroleum industry and waste water treatment in environmental technology. Demulsifiers with amine were used for breaking of water in crude oil emulsion, in this study. The relative rate of water separation was determined via breaker tests. The demulsifier which has alkyl chain length taller was better performance on breaking emulsion than demulsifier which has alkyl chain length shorter.

Keywords: Cationic Gemini surfactants, electrical conductivity, critical micelle concentration, demulsifier, interfacial film, Water in oil emulsion.

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