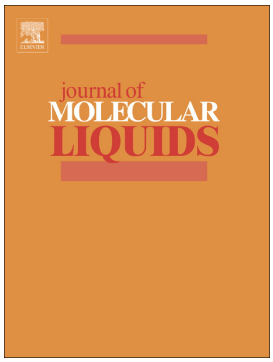

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Demulsification of Heavy Crude Oil Using New Nonionic Cardanol Surfactants

By

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Abstract: Amphiphilic materials based on natural products and biomaterials attracted great attention to replace the petroleum based oil field chemicals as environmentally and ecofriendly materials. The present study modified and characterized the chemical structure of cardanol produced from cashew nut oil with amines and glycols to produce new ionic surfactants. The surface and interfacial activities of the prepared nonionic cardanol surfactants were investigated to study their adsorption at water and oil surfaces. The ability of the cardanol surfactants to act as asphaltene dispersant and water in crude oil emulsion breaker for heavy crude oil were evaluated and showed good results as single surfactant to acts as dispersant and demulsifier for heavy crude.

Keywords: Cardanol; asphaltene; demulsifier; petroleum emulsion; nonionic surfactants.

1. Introduction: