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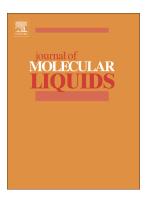
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ACCEPTED MANUSCRIPT

Novel bioactive imidazole-containing polymeric surfactants as

petroleum-collecting and dispersing agents: Synthesis and surface-

active properties

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Abstract

Novel series of imidazole-containing polymers and polymeric surfactants have

been synthesized via an efficient procedure. It included copolymerization of 1-vinyl-

imidazole (VIM) with lauryl methacrylate (LMA) initiated by benzoyl peroxide and

the ¹H NMR spectroscopic data was utilized to estimate the monomer reactivity ratio.

Conversion of polymers to surfactants was achieved through quaternization of the

imidazole nitrogen with dimethyl sulphate. Spectroscopic techniques were used to

elucidate the chemical structures of all synthesized compounds. The surface-active

properties of polymeric surfactants beside their activities against various microbes

were investigated. In addition, petroleum-collecting and dispersing properties of

surfactants in diluted and undiluted form in varying waters were evaluated.

Keywords: 1-Vinylimidazole; Lauryl methacrylate; Reactivity ratios; Polymeric

surfactants; Petroleum-dispersing agents.

1. Introduction

Macromolecules, which include diazole moiety, have been proposed as

carrying an active part of various electrolyte-containing enzymes [1-3]. A great

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