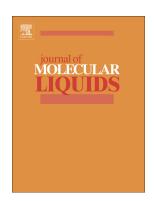
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FT-IR spectroscopic and micellization studies of cetyltrimethylammonium bromide in aqueous and aqueous solution of ionic liquid (1-butyl-3-methylimidazolium bromide) at different temperatures



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spectroscopic and micellization studies FT-IR of

cetyltrimethylammonium bromide in aqueous and

solution of ionic liquid (1-butyl-3-methylimidazolium bromide) at

different temperatures

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ABSTRACT

The electrical conductivity and infrared spectroscopic measurement of aqueous solutions of

cetyltrimethylammonium bromide (CTAB), cationic surfactant, with imidazolium based ionic

liquid 1- butyl-3 methyl imidazolium bromide [C₄mim] [Br] were determined at different weight

percentages and temperatures. The temperature dependence of critical micelle concentration

(cmc) obtained from conductivity measurements at different temperatures (298.15, 303.15, and

308.15) K has been used to calculate various thermodynamic parameters of micellization like

standard enthalpy of micellization (ΔH_{m}^{0}), standard free energy of micellization (ΔG_{m}^{0}), and

standard entropy of micellization (ΔS_m^0) , and the obtained parameters are further used to

understand the effect of ionic liquid on surfactant. The influence of ionic liquid 1-butyl-3-

Bromide $[C_4mim][Br]$ methylimidazolium the micellization process

cetyltrimethylammonium bromide (CTAB) is discussed.

Keywords: 1-Butyl-3-methylimidazolium bromide, Cetyltrimethylammonium bromide, FT-IR,

CMC, Micellization.

1. INTRODUCTION

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