

Spectral investigations of some piperidin-4-one molecular addition compounds

Jayaraman CHAKKARAVARTHY,¹ Inbasekaran MUTHUVEL,^{2,3} and
Ganesamoorthy THIRUNARAYANAN^{*2}

¹*Department of Chemistry, Periyar Government Arts College, Cuddalore-607 001, Tamilnadu, India*

²*Department of Chemistry, Annamalai University, Annamalainagar-608 002, Tamilnadu, India*

³*Department of Chemistry, MR Government Arts College, Mannargudi-614 001, Tamilnadu, India*

Abstract. In the present study, some 2- and 3-substituted piperidin-4-ones (**A₁-A₃**) were chosen as proton acceptor and maleic anhydride was chosen as proton donor. Piperidin-4-ones (**A₁, A₂ & A₃**) were mixed with maleic anhydride in ether medium and the corresponding molecular adduct products (**B₁, B₂ & B₃**) thus obtained were collected and purified. The ¹H and ¹³C NMR spectra were recorded for piperidine-4-one and their addition compounds. The ¹H and ¹³C NMR chemical shifts of products (**B₁, B₂ & B₃**) are analyzed and compared with those of the corresponding piperidine-4-ones (**A₁, A₂ & A₃**). In order to confirm the formation of molecular addition compounds the GC-Mass spectrum was recorded for all adducts **B₁-B₃** and the fragmentations patterns were analyzed.

Keywords: piperidine-4-ones; molecular addition; steric effect; polar effect; NMR spectra.

* Corresponding author. *E-mail addresses:* thirunarayanan.g.10313@annamalaiuniversity.ac.in; drgnarayanan@gmail.com (Ganesamoorthy Thirunarayanan).