**Abstract**

The electrical properties of some Schiff bases of 2-aminopyrimidine and 2-aminopyrazine with benzaldehyde derivatives have been investigated. Such measurements have rarely been done on these compounds. The positive temperature coefficient of electrical conductivity (dσ/d*T*) found for all the samples investigated is evidence for the semiconducting character within the range of temperature studied. For the compounds studied, a correlation between the electrical properties and their chemical structure is established. The mechanism of the conduction process in these samples is also studied