

**Development of a New Class of the Ionic Liquids  
Based on 1,3-Dimethyl-1,2,3-benzotriazolium Cation**

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**ABSTRACT**

The low melting 1,3-dimethyl-1,2,3-benzotriazolium (MMBT) salts [MMBT][NO<sub>3</sub>] (**2**), [MMBT] [BF<sub>4</sub>] (**3**) and [MMBT][CH<sub>3</sub>COO] (**4**) were prepared. Systematic variation of the anion allowed an assessment of their influence on the physical properties of the benzotriazolium salts. The structural properties of these compounds were investigated using NMR and IR spectroscopy, combined with single crystal X-ray structure determinations for **2** and **3**. The studies revealed that hydrogen-bonding interactions between the benzotriazolium ring protons and the anions are present in case of **1** and **4**, both in the solid state as well as in solution. In case of **2** and **3** there is no specific cation anion interactions like dativ bonds, hydrogen bond or other unusually short atomic distances. The melting points of the salts are in case of **1-3** primarily dependent on the size of the anions, and decrease with increasing size.

**Keywords:** 1,3-Dimethyl-1,2,3-benzotriazolium, Ionic liquids, Single Crystal  
x-ray Analysis