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Low-Q peak in X-Ray Patterns of Choline-Phenylalanine and -Homophenylalanine: A Combined Effect of Chain and Stacking

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Abstract

In this contribution we report for the first time the X-Ray patterns of Choline-Phenylalanine and Choline-Homophenylalanine ionic liquids. The presence of a low Q peak in both systems is another evidence that a long alkyl chain is not always needed to establish a nanodomain segregation in the liquid sufficient to be revealed by the diffraction experiment. These new data are compared with the diffraction patterns and the theoretical calculations of other choline-aminoacid ionic liquids recently reported. A significant role might be played by the stacking interactions between aromatic rings.

Keywords: SAXS, Choline, Phenylalanine, Aminoacids, Ionic Liquids

1. Introduction

Ionic liquids (ILs) constitute a very interesting class of compounds, which, despite they have been actively studied in several chemical disciplines for almost twenty years, continue to have a prominent place in the current research. Such fact is probably ascribable to their outstanding chemical and technological properties that still attract the researchers and have a very large variability (1; 2; 3; 4; 5; 6; 7). An interesting subset of ionic liquids prepared in the last five years (8; 9) is composed of cations or anions derived from biomaterials obtainable from renewable sources, such as amino

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