

## GROWTH AND CHACACTERIZATION BY X-RAY DIFFRACTION OF Ni(II)(L-GLUTAMINE) COMPLEX

Oliveira, R. M. S.\*; Melo, E. B.; de Menezes, A. S.

Departamento de Física, CCET, Universidade Federal do Maranhão, São Luís, MA, Brazil

\*raisamarya@gmail.com

Most metal complex with amino acids have the metal ions coordinated to nitrogen and one of the carboxylate oxygen atoms of the amino acid group of two amino acid molecules, while the remaining carboxylate oxygen atoms are bonded to copper ions of neighboring molecules. However, a different situation can occurs where metal ions are coordinated to one amino acid molecule as in the compounds described above, and, in addition, are coordinated to the side chain carboxylate group or by the side chain amine of the other amino acid molecule. One of those complexes is Cu(II)(L-glutamine)<sub>2</sub> (Cu(C<sub>5</sub>H<sub>9</sub>N<sub>2</sub>O<sub>3</sub>)<sub>2</sub>) that ( $C_{6}H_{9}O_{2}N_{3}.HCl.H_{2}O$ ) crystallizes in the monoclinic structure with 4 molecules by unit cell, space group C2 and cell parameters  $a = 28.0610(5) \text{ \AA}$ ,  $b = 5.0756(1) \text{ \AA}$ ,  $c = 9.3719(2) \text{ \AA}$  and  $\beta = 99.514(8)^{\circ}$ . In this work, we used the nickel instead of cooper to grow the Ni(II)(L-glutamine)<sub>2</sub>. In order to obtain this crystal, 1 mol of NiCl<sub>2</sub>.6H<sub>2</sub>O was added to an aqueous solution with 2 mols of L-glutamine. NaOH was added to this solution to adjust the pH. The solution was kept at 30°C to promote the evaporation of the solvent. After some days polycrystalline blue spheres has appeared and the size is dependent on pH. X-ray powder diffraction measurements of the Ni(II)(L-glutamine)<sub>2</sub> showed a pattern different from the Cu(II)(L-glutamine)<sub>2</sub> crystal. A study as a function of the metal ion was performed in order to see the behavior of glutamine complex with different metal ions like Co(II), Mn(II) and Cr(II).

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