Organic inorganic compounds constitute a vast family of hybrid materials of considerable technological importance. Indeed, due to the nature (molecular, ionic, hydrogen bonding, etc...) of organic and inorganic components, many combinations may be achieved to elaborate suitable materials, so as to exhibit some interesting crystal structure and some special properties in several areas, such as nonlinear optical, magnetism, luminescence, photography and drug delivery. Moreover, hydrogen bonding is of intense interest because of their widespread occurrence in biological systems. So, it is very helpful to search simple molecules allowing to understanding the configuration and the function of some complex molecules.

Studies of organic-inorganic hybrid materials, including aminoacids and various inorganic acids, have received a great deal of attention in recent years, because of their electrical, magnetic and optical properties. The potential importance of hydrogen bonding in the structure and function of biomolecules is well established. The hybrid compounds are rich in H-bonds and they could be used to this effect because of their potential importance in constructing sophisticated assemblies from discrete ionic or molecular building blocks due to its strength and directionality. This kind of hydrogen bonding appears in the active sites of several biological systems and is observed in similar previously studied hybrid compounds. The combination of the organique matrix and the mineral anions allowed us to obtain original structures.

To the best of our knowledge, neither quantum chemical calculations, nor the vibrational spectra and comparative study between theoretical (DFT calculations) nor experimental research based on the structure of molecules to give a correct assignment of the fundamental band in experimental.


Keywords: Hydrogen bond, Hybrid Compounds, DFT.