COMPLEX TRIGLYCINE SULPHATE (TGS) CRYSTAL ANALYSIS

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It is with emotion that I deliver before you the traditional speech of reception, on which occasion my thoughts turn to all those who, over more than five decades, have shared with me, in one way or another, the same concerns in researching experimental and theoretical aspects of crystal growth or its applications.

Certainly, the progress of modern society would not have been the same without the science of crystal growth. Most semiconductor devices today are made from single crystals, with research in the field often pointing out that the advent of semiconductor devices was always preceded by the invention of new crystal growth technologies. Over time, considerable efforts have been made to clarify the static characteristics of the surfaces and the quality of the crystals, using various sophisticated tools such as X-ray diffraction, electron microscopy or scanning microscopy. On the other hand, the studies also considered the dynamic behavior of atoms and molecules on the surface of a growing crystal. Therefore, tools such as thermodynamics, statistical physics, and quantum mechanics must be used to understand the mechanism of crystal growth, along with up-to-date notions of crystallography.

Over the years, a constant of my crystal growing research has been directed towards the Triglycine Sulfate crystal, to which I wish to draw your attention in what follows. This is an important ferroelectric crystal used across a wide spectrum of radiation detection.

The ferroelectric crystal Triglycine Sulfate (TGS) presents distinct properties in the ferroelectric phase on the four temperature ranges Tc-45-40-35-30-(25)^{o}C, for all measurement parameters [1]. The lower limit of the ferroelectric transition was set by us at 28-30^{o}C, about 20^{o}C below The Curie point (49.2 ^{o}C). The crystals

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