

# The Equipment for Crystal Growth Based on the Hydrolysis Technique

*Thursday, May 21, 2015 1:00 PM (3h 30m)*

With its unique electrical and optical characteristics, triglycinesulphate(TGS) has been studied extensively. However, the solution of glycine and sulfuric acid has the low evaporation rate, and hence, the long period is required to grow large TGS crystals. The main objective of this research is to investigate the potential of the electric-current stimulation to reduce the growth period of TGS crystals in the supersaturated solution. To grow TGS crystals, the solution was stimulated by the current of approximately 0.95 mA. The result shows that electric-current stimulation could reduce the growth period of the TGS to one third of that needed in the thermal crystal growth process. On the other hand, the FTIR spectra show that the stimulation might lead to the proton donation of the carboxylic group from glycines due to of the difference of the pH gradient between the electrodes. Thus, the reduced glycines might influence the formation of the electric domain in TGS crystals. In addition, the electrical and optical properties of the TGS crystal may be controlled by using this approach.

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**Session Classification:** Poster-3

**Track Classification:** Material Physics, Nanoscale Physics and Nanotechnology