ELCASS, Bad Tölz, 2004

Thermal Analysis of C_3N_4

The talk will begin with a brief introduction to the Geometric Structure group at FHI. The thermal analysis capabilities within our group will be presented, followed by an introduction to C_3N_4 materials. The thermal gravimetric – mass spectroscopic analysis of a "C_3N_4" sample produced by the group of Prof. Antonietti (Matthijs Groenewolt) will be presented. The decomposition of the sample in flowing Argon was measured at 4 heating rates (30, 5, 2, and 1 K/min). Analysis of the decomposition of this material begins with a model-free analysis, and continued with a fit to the data based on a model which included three parallel reactions. The model and analysis of the gas phase products suggest that there are two main components to the sample. Predictions based on the three-reaction model fit are used to determine if it is possible to purify one of the components through heating in Argon. It is concluded that such a separation would not be possible.