

Fast high temperature measurement with the MYTHEN 1K Stripdetector

STOE provides the ideal equipment for powder diffractometer systems to observe and evaluate transitions in nonambient environments. With the ultra-fast MYTHEN 1K Stripdetector manufactured by DECTRIS very rapid measurements can be performed. Highest quality data are obtained with the STOE capillary furnaces for powder investigations at high temperatures. The STOE furnaces can be mounted on every STADI P or MP diffractometer (moving circles or fixed stage). The data collection and evaluation is easily performed with STOE's WinX^{POW} software, providing full operation control and data visualization.

Ammonia nitrate $\text{NH}_4\text{NO}_3 \cdot x \text{H}_2\text{O}$ has been used for the experiment. The measurement has been performed with 0.75°C per step and an exposure time of 10 sec per step. The data collection has lasted only 30 min to

complete, covering a data range of $25^\circ 2\theta$ and a temperature range 120°C as shown below. The MYTHEN 1K detector has been placed at the distance with an inherent resolution of $0.02^\circ 2\theta$. The several well known phase transitions of $\text{NH}_4\text{NO}_3 \cdot x \text{H}_2\text{O}$ are clearly observed.

