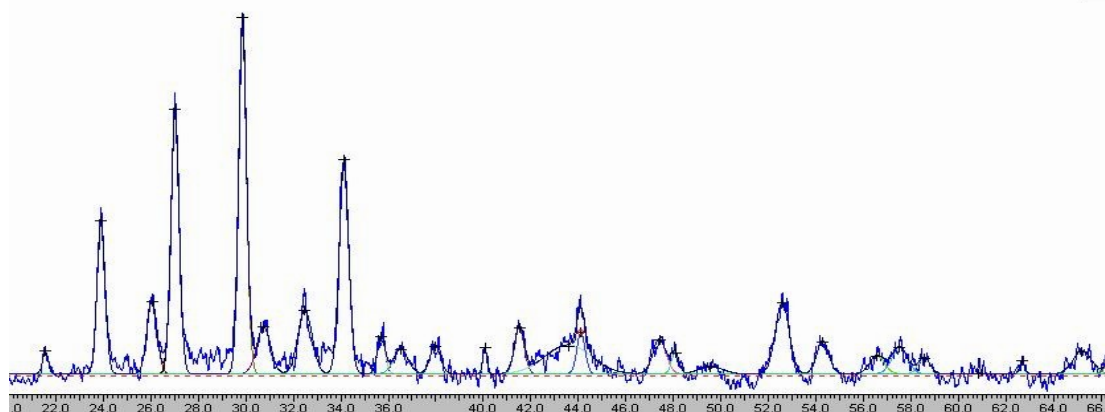
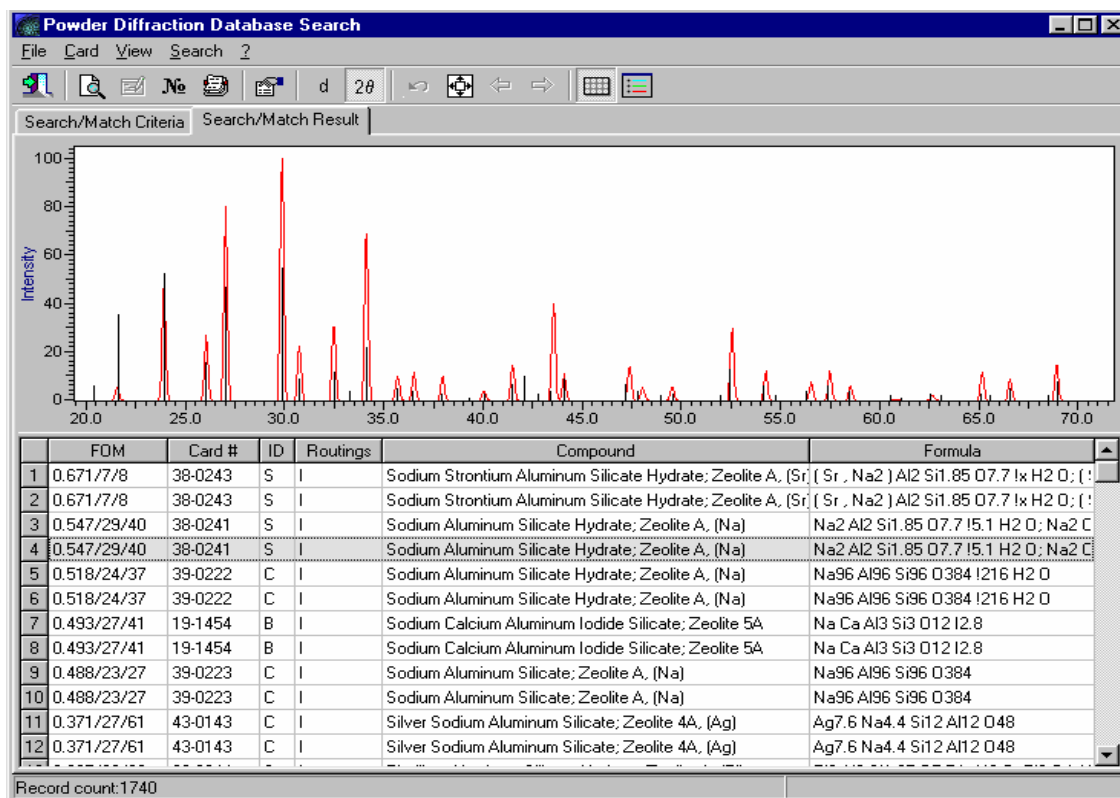


# X-ray Structural Investigations of Synthetic Inorganic Adsorbents and Catalysts

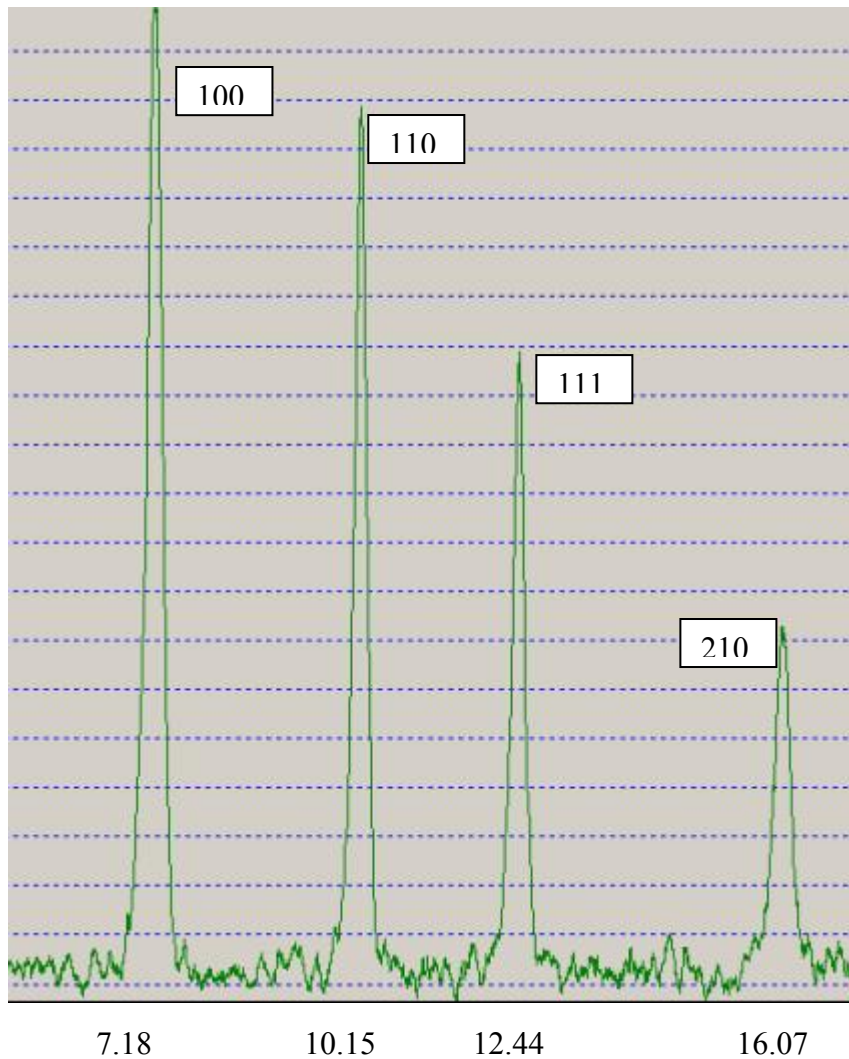
(1) **Zeolites**. Aqueous aluminosilicates of alkali metals are widely used as adsorbents and catalysis thanks to their crystalline structure specificity (large porosity)



A fragment of *zeolite* diffractogram obtained with the help of position-sensitive detector with 300 $\mu$ m resolution within the interval of angles between 22 and 60° according to  $2\theta$ , and an example of the outcome experimental study data processing using ICDD database.

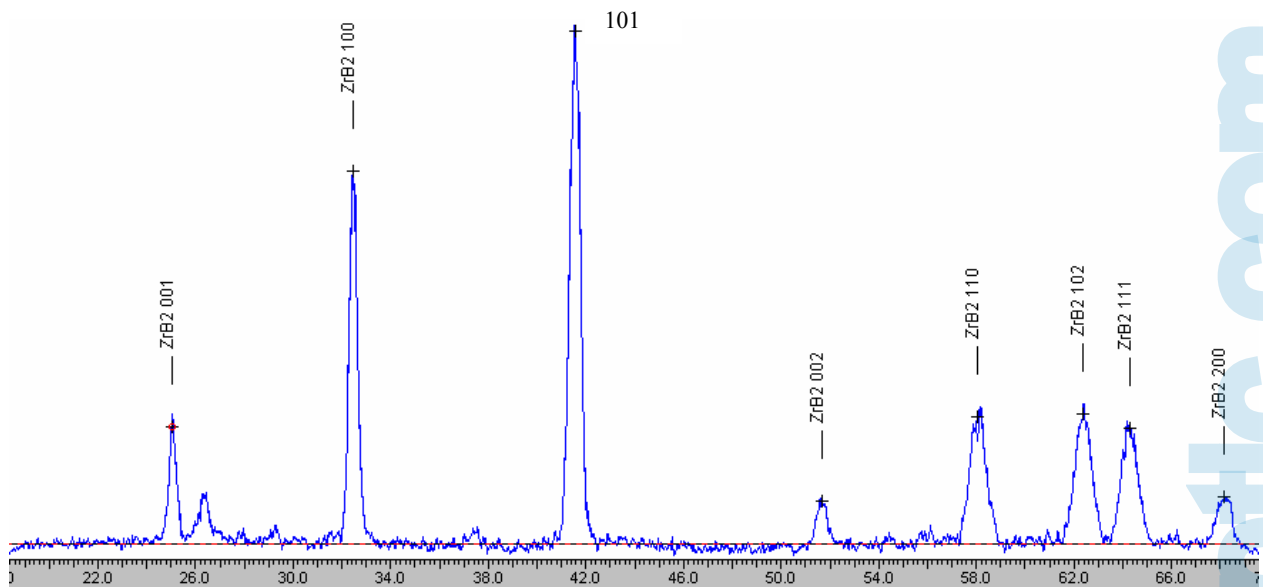


The complex structure of zeolites is characterized by large interplanar spacing. X-ray complex allows carrying out analysis both at large and small diffraction angles with high resolution thanks to developed position-sensitive detectors.



A fragment of decoded *zeolite* diffractogram in the small-angles range, which was recorded using the linear coordinate sealed detector (LCSD).

(2) **Zirconium Boride  $ZrB_2$** . Those are used as alloys with some transition metals to manufacture important parts; borate products made of steel and other metals in order to improve their stiffness, durability and corrosion resistance; as catalysis; as semiconductors, they are used for production of high-temperature ceramics.



A fragment of **zirconium boride** diffractogram recorded using a bent position-sensitive detector with simultaneous registration within the interval of angles between 22 and 60° according to 2θ; and an example of the outcome experimental study data processing using ICDD database.

