

Application of a dual-source Weissenberg type diffractometer, H. Borrmann, H. Zhang*, Yu. Prots, M. Schmidt and W. Schnelle, *Max Planck Institute for Chemical Physics of Solids, Noethnitzer Str. 40, 01187 Dresden, Germany*. E-mail: hzhang@cpfs.mpg.de

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An additional X-ray source along with a Johansson type monochromator is installed on a Weissenberg type diffractometer with a large imaging plate detector (Rigaku R-Axis RAPID) [1]. This enables two sets of intensity data to be collected at the very same sample setting but using two different X-ray beams, *i.e.* beams of different wavelengths and/or different beam shapes. For example, an optimal refinement on the structure parameters of the hydrogen atom in $\text{Ca}_2[\text{BN}_2]\text{H}$ (space group $Pnma$, No. 62, $a = 9.2015(8)$ Å, $b = 3.6676(2)$ Å, $c = 9.9874(12)$ Å, $Z = 4$) has been investigated by analyzing the data collected using various primary beam sources. Moreover, additional specific information can be gained from data collected from a resonance experiment applying a wavelength very close to an absorption edge of a compositional element. We have tried to analyze the cation distribution in zinc ferrite (ZnFe_2O_4) [2] using high resolution data along with such a resonance experiment applying Co K_β radiation.

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[2] O'Neill, H. St. C. (1992). *Eur. J. Mineral.* **4**, 571-580.