
***ReO*₂ as a inner pressure gauge used in X-ray Diffraction under external pressure up to 1.8 GPa**

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A new *B*₄*C* anvil cell has been developed and tested by UFES, IPEN, IAE-CTA and LNLS since 2004. This pressure cell will be used to study the behavior of X-ray diffraction patterns of materials under hydrostatic pressure. In order to measure and calibrate the pressure inner the gasket hole, we have investigated the effect of the hydrostatic pressure on the monoclinic *ReO*₂ using X-ray diffraction and XANES under hydrostatic pressure up to 1.8 GPa. The X-ray transparency of the *B*₄*C* anvil above 9 keV has guaranteed a satisfactory signal/noise ratio. The *La*_{0.85}*Sr*_{0.15}*MnO*₃ magnetic transition and *ReO*₃ octahedral distortion were used as second inner pressure gauge, which were used in the XANES under hydrostatic pressure measurements.

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