

Experimental shock deformation in zircon re-visited: Electron back scattered diffraction study

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Meteorite impact events are a natural way of creating extreme conditions in mineral matter with high-velocity impacts. The development of diagnostic methods to identify the achieved conditions in rocks is relevant for planetary and material science, as well as the history of early Earth and extraterrestrial materials. Zircon (ZrSiO_4) is one of the most studied refractory minerals widely used for detection of P - T conditions in impact rocks by its internal micro-structure and texture. We studied experimentally-shocked zircon standard from Sri Lanka and Australia. Samples were cut perpendicular to the c -axis in order to have the shock propagation direction parallel to the c -axis at pressures of 20, 40, and 60 GPa [1]. The recovered samples were characterized by electron back scattered diffraction (EBSD), which is the first EBSD study of such material, and by Raman spectroscopy.

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- [1] Leroux H, Reimold W U, Koeberl C, Hornemann U and Doukhan J C 1999 *Earth Planet Sci. Lett.* **169** 291–301