The new high pressure powder diffractometer on the Kurchatov Source of Synchrotron Radiation.

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The characteristic of Synchrotron Radiation (SR) such as high brightness, high energy range were found to be quite adequate for high-pressure experiment.

The new powder diffractometer is placed at the working station “Mediana” at the Kurchatov Source of Synchrotron Radiation (KSSR, Moscow). The diffractometer consists of the following main systems: monochromators system, device for positioning high pressure cell and detector system. The focusing of photons by means of Laue-geometry diffraction from mosaic crystals has been used [1]. With diamond and SiC anvils high pressure cells [2] it is possible to perform powder diffraction experiments at pressures up to 50 GPa. The sample volume of about $0.005–0.03$ mm$^3$ is used and the typical exposition time is about 4-7 h.