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Pulsed neutron powder diffraction using compact opposed anvil cells

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We have recently carried out a neutron powder diffraction experiment at high pressure using compact opposed anvil cells. Although spurious diffraction peaks from anvils are rather large, a few peaks from Pb sample with 0.7 mm³ volume was clearly observed. Potential and problem of current scheme toward neutron diffraction at the highest pressure regime will be demonstrated.

Keywords: neutron diffraction, high pressure, J-PARC