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In-house x-ray diffraction experiments at high pressure using confocal multilayer mirrors

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Use of in-house x-ray diffraction experiments under high pressure has been limited due to lower brilliance than synchrotron radiations. Recent developments of x-ray optics allows to generate micro focused x-ray beam with very high brilliance, which has already applied to single-crystal x-ray diffraction experiments for small-sized protein crystals. It is quite straight forward that this focusing technique will be applied to high pressure experiments. In this study, we report preliminary experiments under high pressure using confocal multilayer mirrors and diamond anvil cells.

Keywords: multilayer mirror, high pressure, x-ray diffraction