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A cryogenic monochromator for third generation synchrotrons

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A double crystal monochromator has been developed based upon the cooling of a pair of silicon (111) crystals using liquid nitrogen. This monochromator features a Bragg angle accuracy and resolution of 0.36 arc seconds, and is also compatible with sagittal focusing of the second crystal.

The design of this monochromator is described, and performance data is presented.