

## Tunable permanent magnet for XRD experiments at RRCAT

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A 0.4-1 T tunable permanent magnet has been designed, developed, characterised and commissioned at INDUS-II beamline at RRCAT. Using this magnet, magnetocaloric studies are being carried out in different MCE materials in presence of magnetic field to study magneto structural transitions.

### Detailed Report:

The magnet developed is a PM based system with a shunt system for achieving tunability in the desired field range within an air gap of 3 mm. A capillary containing the material is rotated in the air gap and XRD experiments are carried out to study giant magnetocaloric effects in these materials.