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## **X-ray polarization detector**

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We designed and constructed a cylindrical gas proportional counter that can be used to analyze the linear polarization of x rays with a wide range of energy from 2 keV to 10 keV. The polarization sensitivity is based on the highly non-isotropic scattering of polarized x rays from a gas or solid target. The gas proportional counter surrounds the scattering chamber and measures the scattered x rays as a function of the azimuthal angle. The angle of scattered x rays is determined by the charge division of the anode resistive wire. This polarimeter can measure x rays with continuous energies without any moving parts. It is specially suitable for synchrotron x-rays. We discuss the testing and performance of such an x-ray polarimeter.