

Abstract Submitted
for the APR11 Meeting of
The American Physical Society

Measurement of the reflectivity to 178nm light of the PTFE used in the Xenon100 BIN CHOI, Columbia University, XENON COLLABORATION — The XENON100 time projection chamber (TPC) uses polytetrafluoroethylene (PTFE) both as insulator and as VUV-light reflector. The reflectivity of PTFE, however, is not well established, especially considering that it significantly depends on the surface finish. Furthermore, the PTFE in XENON100 is in contact with the liquid xenon at about -100°C , which can also affect the reflecting property. A set-up consisting of a monochromator and a vacuum chamber was developed within the XENON100 collaboration and operated at the Columbia University Nevis Laboratory to measure the reflectivity of PTFE and other material samples, relevant for future XENON detectors. The chamber is equipped with an Iwatani PDC08 pulse tube refrigerator (PTR) to be able to cool down the samples to liquid xenon temperature. The same set-up has also been used to measure, for the first time, the quantum efficiency (QE) of the Hamamatsu R8520-06-AL XENON100 photomultipliers at low temperature.

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Date submitted: 14 Jan 2011

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