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Application of Timepix detector for measurement of x-rays produced by a low-intensity electron beam passing through a periodic target

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This report demonstrates initial testing of the high-speed spectral camera ModuPIX based Timepix detector with Si sensor. We present the first results on the measurement of x-rays produced by passing a 2 GeV low-intensity electron beam through a resonant transition radiation target and then diffracted from the HOPG crystal. A test setup was constructed on the test beam line No 21 at DESY (Hamburg, Germany). The results obtained show that the Timepix detector allows separating the low intensity diffracted X-rays from the background caused by charged particles.

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