

11th International "Hiroshima" Symposium on the Development and Application of Semiconductor Tracking Detectors (HSTD11) in conjunction with 2nd Workshop on SOI Pixel Detectors (SOIPIX2017) at OIST, Okinawa, Japan

Contribution ID: 82

Type: ORAL

Development of Debye-Ring Measurement System Using SOI Pixel Detector

Friday 15 December 2017 10:00 (20 minutes)

In recent industrial sites of the fabricated metal product manufacturing, total inspection of residual stress or hardness in non-destructive non-contact is required. However, the conventional measurement system only used in a sampling inspection because it takes a long time to measure. Therefore, we are developing high speed Debye-ring measurement system using integration-type SOI pixel detector, INTPIX4 which can evaluate material characteristics for industrial use.

INTPIX4 is an X-ray imager with 832 x 512 pixels, each of pixel size 17 μm square. By using SEABAS2 readout board it is possible to measure Debye-rings up to 45 times for 1 second. The developed system is a compact and high speed Debye-ring measurement system thanks to two INTPIX4s and a compact high power X-ray tube.

In this presentation, we introduce the developed system and report its properties.

Author: Dr MITSUI, Shingo (Kanazawa university)

Co-authors: ARAI, Yasuo (High Energy Accelerator Research Organization (JP)); MIYOSHI, Toshinobu (KEK); NISHIMURA, Ryutaro (The Graduate University for Advanced Studies (KEK)); SASAKI, Toshihiko (Kanazawa University)

Presenter: Dr MITSUI, Shingo (Kanazawa university)

Session Classification: Session15

Track Classification: SOI detectors