Newsletter

CENTRE FOR ADVANCED TECHNOLOGY

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RESEARCH AND DEVELOPMENT

ACCELERATOR PROGRAMME

Circulation of beam in Indus-1

Beam was successfully extracted from the booster synchrotron on February 24, 1997 using a fast extraction kicker magnet. Two extracted bunches were observed using a wall current pickup monitor and the extracted beam was also observed on the fluorescent screen. The booster synchrotron has three bunches with an interbunch spacing of 30 nsec. The fast extraction kicker has a rise time of 40 nsec, so two out of three bunches can be extracted. Optimisation of the extraction kicker and septum as well as steering magnets in the booster synchrotron is used to maximise the extracted current. The extracted current in two bunches nearly matched to that of the booster synchrotron. These bunches were transported through 26 metre long Transfer Line-2 (TL-2) up to the injection point of Indus-1 storage ring. Beam was observed at the hole monitor (circular screen painted with fluorescent material having a hole in the centre) located at the end of the TL-2 on March 20, 97. The line is optimised for injection. A wall current monitor placed at the end of the line showed that nearly full beam is transported. Beam was passed through the injection septum magnet into Indus-1 and few circulating turns were observed on Aug. 8, 97. The injected beam was observed on the fluorescent screen installed in the diametrically opposite section to the injection septum. The wall current pickup monitor placed in one of the sections of Indus-1 showed circulation of the beam. The beam spots were also observed on the fluorescent screen installed after the injection septum. Beam injection and accumulation trials will start after installing an injection kicker magnet into the ring.