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Developments of Fast Emittance monitors for Ion Sources at RCNP

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Recently several developments of Low Energy Beam Transport (LEBT) line and its beam diagnostic systems have been done in order to improve the injection efficiency of ion beam to AVF Cyclotron at Research Center for Nuclear Physics (RCNP) Osaka University. One of those is the development of Fast Emittance monitors. A fast monitor which consists of XY slits and profile monitor with rotating wire and can measure emittance within 75 seconds is already exists. For more efficient development of beam, a new emittance monitor which can measure within several seconds is needed and a Pepper Pod Emittance Monitor (PPEM) has been developed. The PPEM consists of copper pepper pod mask, multichannel plate (MCP), fluorescent screen, mirror, and CCD camera. The CCD image is taken via IEEE1394b to PC and analyzed immediately and frequently. The details of the PPEM and beam development with this PPEM will be presented.