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**Beam imaging in the injection line of the Superconducting Cyclotron of the
INFN-LNS**

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A cheap and efficient diagnostic system for beam monitoring has been recently developed at INFN-LNS in Catania. It consists of a high sensitivity CCD camera detecting the light produced by an ion beam hitting the surface of a scintillating screen and a frame grabber for image acquisition. A scintillating screen, developed at INFN-LNS and consisting of a 2 μm BaF₂ layer evaporated on an Al 2 mm thick plate, has been tested by using a ²⁰Ne beam of different charge states in the keV energy range. The CAESAR ECR ion source has been used for investigating the influence of the frequency and magnetic field tuning effects, the impact of the microwave injected power and of the focusing solenoids along the LEBT on the beam shape and current. These tests will allow to better understand the interplay between the plasma and beam dynamics and, moreover, to improve the transport efficiency along the low energy beam line and the matching with the superconducting cyclotron, particularly relevant in view of the expected upgrade of the machine. A new diagnostic tool for mAs current beams, based on a Microchannel Plate for detecting Secondary Electron Emission by an Al foil, is now under investigation and will complete a wide gamma of beam monitoring setups soon available at the INFN-LNS.