

A High Brightness Beams Test Facility (HB2TF)

We present a proposal related to the development of a High Brightness Beams Test Facility (HB2TF) at the INFN-LASA laboratory close to Milan (Italy).

The Test Facility will allow to carry out experiments with the high current high brightness CW electron beam in frontier areas of accelerator physics.

The Test Facility setup will comprise a high-performance laser driven DC Gun (using Cs₂Te photocathodes) followed by a normal conducting RF buncher-acceleration section to provide 1 MeV 5 mA CW electron beam. The engineering design of a Superconducting RF booster linac able to increase the electron energies up to 5-10 MeV maintaining beam current up to 2.5 mA is part of the proposal even if its financing and realization will be delegated to future requests.

The proposal is aimed to pool different experiences and capabilities so far available in research groups at the LASA laboratory along with the contribution from accelerator groups in other INFN sites and in foreign labs.

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