

ELECTRON GUNS

FOR CTF3

CLIC is a CERN project for a multi-TeV e^+e^- collider. A drive beam generates an HF wave and provides the accelerating power to the main beam. To validate this new concept and to test some elements CERN builds the CLIC Test Facility.

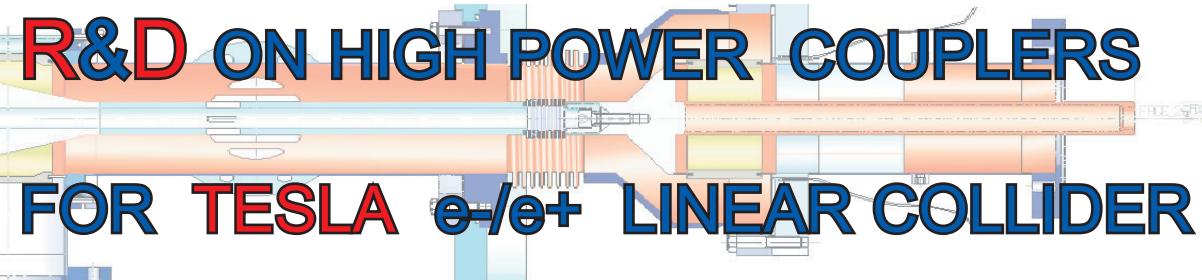


14. 3. 2015

LAL has designed and built two dedicated electron guns for the preliminary phase of the CLIC Test Facility 3 (CTF3). These guns are based on a thermionic grided cathode. The first one operates at 90 kV in the intensity range of 50 mA to 2A. The beam shape is adjusted for the former EPA (Electron Positron Accumulator) ring. The second gun, derived of SLAC NLC Test Accelerator gun, operates at 140kV with an intensity of 7 A. The beam is characterized by a very flat top. It is used as injector for the drive beam of CTF3 phase II.

R&D ON HIGH POWER COUPLERS

FOR TESLA e^-/e^+ LINEAR COLLIDER



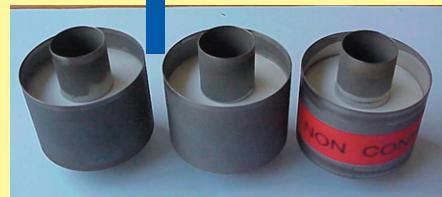
Prototype power coupler



Vacuum oven for out-gassing of power couplers



Components for R&D on ceramics brazing and on copper coating



A collaboration exists between DESY and LAL on the development of power couplers for the future e^+e^- collider. LAL has the responsibility to establish the procedures for testing and conditioning of a large series (~10,000) of low cost, high power input couplers as well as the technologies for their fabrication. To this end, we build prototypes to study aspects such as vacuum brazing, welding, copper coating, TiN coating of ceramics and procedures for fast conditioning.