

**The Production of Short Intensive Bunches from  
Laser Triggered GaAs Photocathode,**

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LNL-INFN, Italy - During the last several years the conception of gun with laser-triggered photocathode causes the great interest. The use of it as an electron source for linear accelerator seems to be very attractive since it can produce short, low emittance and intensive electron beam. For its acceleration in linac no buncher system is required. An experimental set-up was constructed for electron bunches extraction from GaAs photocathode triggered by laser pulse, and bunch length measurement. The latest results showed that the electron bunches with high charge density (up to  $2 \cdot 10^9$ ) particles per bunch, and low time duration (20-30 psec bunch sigma) can be produced. In this paper a brief description of an experimental set-up is given, the latest experimental results are presented and analysed. Also the photocathode time response dependence on bunch total charge for different bunch energies is discussed. PARMELA simulations are made to determine the emission time of GaAs crystal, the results are compared with experimental data.