

## STATUS OF THE LINAC COHERENT LIGHT SOURCE

D. Dowell, SLAC, Menlo Park, California

### Abstract

The world's first x-ray free electron laser, the Linac Coherent Light Source (LCLS), is currently under construction at the Stanford Linear Accelerator Center (SLAC). This facility uses the last kilometer of the SLAC 3 km Linac to produce 1.5 to 15 angstrom photons in a 100 meter long undulator with up to 15 GeV electrons. The production of the high-brightness electron beam requires the construction of a new RF photocathode gun and a 135 MeV injector at the 2/3 point of the SLAC Linac. In addition, two stages of chicane compressors will be installed for compressing the electrons to a 22 micron bunch length, boosting the peak current to 3.5 kiloamperes. The bright, dense electron bunches then radiate via the SASE process in the long undulator. The coherent x-ray beam propagates through a gas attenuator and various diagnostics, before delivery to the experimental stations in the Far Hall. The design features and status of this novel facility will be presented.

**PAPER NOT  
AVAILABLE**