

HTPD 2018



Contribution ID : 45

Type : not specified

10.30 High resolution x-ray spectrometer development for picosecond measurements.

Wednesday, 18 April 2018 10:31 (120)

The streaked Orion high-resolution x-ray spectrometer (STOHREX) is a combination and adaptation of the time integrating OHREX spectrometer front end, currently operating at the ORION laser facility, and a sub-pico second LLNL streak camera. The new instrument is being developed to gain temporal information on spectral lines produced in short pulse heated plasmas at the ORION laser facility. STOHREX was recently tested at the TITAN laser facility at Lawrence Livermore National Lab. This unique diagnostic system, in which the streak camera is encompassed, resides entirely outside of the laser target chamber. Employing a spherically bent Ge crystal and focusing on Si and Ni targets at TITAN we show that x-ray throughput appears sufficient for measurements with ~1ps resolution on the Orion laser. This work was performed under the auspices of the U.S. DOE by LLNL under Contract No. DE-AC52-07NA27344.

Primary author(s) : MAGEE, Edward (Lawrence Livermore National Lab)

Co-author(s) : BEIERSDORFER, Peter (Lawrence Livermore National Lab); RONNIE, Shepherd (Lawrence Livermore National Lab); MCKELVEY, Andrew (Lawrence Livermore National Lab); BROWN, Colin (Directorate of Research and Applied Science, AWE plc); HOBBS, Lauren (Directorate of Research and Applied Science, AWE plc); HILL, Matthew (Directorate of Research and Applied Science, AWE plc); JAMES, Steven (Directorate of Research and Applied Science, AWE plc); HOARTY, David (Directorate of Research and Applied Science, AWE plc)

Presenter(s) : MAGEE, Edward (Lawrence Livermore National Lab); BEIERSDORFER, Peter (Lawrence Livermore National Lab); RONNIE, Shepherd (Lawrence Livermore National Lab); MCKELVEY, Andrew (Lawrence Livermore National Lab); BROWN, Colin (Directorate of Research and Applied Science, AWE plc); HOBBS, Lauren (Directorate of Research and Applied Science, AWE plc); HILL, Matthew (Directorate of Research and Applied Science, AWE plc); JAMES, Steven (Directorate of Research and Applied Science, AWE plc); HOARTY, David (Directorate of Research and Applied Science, AWE plc)

Session Classification : Session #10, Wednesday Morning Poster Session