Abstract Submitted
for the DPP09 Meeting of
The American Physical Society

Magnetooptical Faraday and Light-Scattering Diagnostics of Laser Plasma in Leopard Laser Facility at UNR/NTF G.S. SARKISOV, Ktech Corp., K. YATES, V.V. IVANOV, V.I. SOTNIKOV, E. YASIN, P. WIEWIOR, A. ASTANOVITSKY, O. CHALY, J. KINDEL, UNR — Laser plasma of the solid target on Leopard Laser Facility at University of Nevada Reno was investigated using polarimetry, interferometry and laser-scattering diagnostics. 50 TW Nd:glass Leopard laser operates on 1056 nm wavelength, 10 J energy and 1ns/400 fs pulse width. Power flux on a target surface varied from 10^{14} to 10^{19}W/cm^2 with 20 μm focus spot from off-axis parabola. The diagnostic of spontaneous magnetic fields in laser plasma was carried out using three-channel polarinterferometer with Faraday, shadow and interferogram channels. Ultrafast two-frame shadowgrams/interferograms with two probing beams with orthogonal polarizations were used for investigation of fast moving plasma phenomena (jets, ionization front propagation). Continuous 1W green DPSS-laser with external modulation was used for light scattering experiments for investigation of the late-time micro-particles generation in laser plasma with expected large charge number of the grain Z $\sim$ 100-1000.

Vladimir Ivanov
UNR

Date submitted: 21 Jul 2009 Electronic form version 1.4