Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Fast capillary discharge facility CAPEX-U as a source of the soft X-ray radiation OLEKSANDR FROLOV, KAREL KOLACEK, JIRI SCHMIDT, VACLAV PRUKNER, JAROSLAV STRAUS, Institute of Plasma Physics, v.v.i., AS CR, Za Slovankou 3, 182 00, Prague — Capillary discharges are more perspective resources for lasing in soft x-ray region than other media (free electron lasers, synchrotron sources, harmonic up-conversion of high power visible/IR lasers). After successful experiments on CAPEX device with lasing on Ne-like Ar (λ = 46.9 nm) we report on our apparatus CAPEX-U (CAPillary EXperiment Upgrade) with larger transversal dimensions, with transparency along its axis, and with multichannel laser-triggered spark gap, which enables exact synchronization of the detectors and attached experiments. Our motivation for building such new apparatus was not only lasing on Ne-like argon, but also testing a feasibility of amplification at shorter wavelengths (below 20 nm). This paper presents the description of the CAPEX-U apparatus, and the results of axial soft X-ray spectroscopic measurements of the pulsed high-current capillary discharge.

Oleksandr Frolov
Institute of Plasma Physics, v.v.i., AS CR, Za Slovankou 3, 182 00, Prague

Date submitted: 21 Jul 2007 Electronic form version 1.4