

## **Computer Simulation of Grazing-Incidence Pumping in X-Ray Lasers**

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Refraction limits the power of x-ray lasers. Typically in short pulse experiments, the plasma has an exponentially decreasing density profile; the critical surface lies in the steep region. The main pulse forms a gain zone near the critical surface. Power output is limited by refraction of x-rays out of the gain zone.

If the main pulse is not incident normal to the plasma, but at a grazing angle, then refraction through the plasma reduces penetration; the effective critical surface becomes the perigee of the ray, which lies in a flatter region. If the gain zone forms in this flatter region, an increase in power output is possible.

The possibility of boosting power output from previous experiments through grazing-incidence pumping is examined using computer simulation.