

Abstract Submitted
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**Amplifying Laser Radiation by an Implosion inside a Reflecting
Capillary Liner** FRIEDWARDT WINTERBERG, University of Nevada Reno —

It is shown that the energy of a pulsed laser beam can be amplified by orders of magnitude by letting it pass through an imploding capillary liner possessing a high wall reflectivity. The implosion can be accomplished with the pinch effect, letting a large current flow over the liner surface, or by the ablation of its outer surface through a burst of soft X-rays. If the inner radius of the liner can be imploded thirty-fold, the laser energy would be increased a thousand-fold. Because the amplification is through the conversion from longer to shorter wavelengths, the concept has the potential for intense short wavelength pulsed laser beams. The most important application of this laser amplification scheme seems to be for the fast ignition of thermonuclear microexplosions.

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