

Physicists at the SLAC National Accelerator Laboratory just created a petawatt laser beam with the highest peak power and current ever. This beam was formed from a bunch of ...

This page contains a list of petawatt-level lasers in operation, under construction, or proposed. The list is compiled from existing academic reviews. A petawatt laser is typically defined as a laser system whose pulse energy divided by its pulse duration reaches an order of magnitude of 10^{15} W, or 1 petawatt. These high-power laser pulses are capable of driving a strong electromagnetic field, giving rise t...

Laser-driven acceleration is a promising path towards more compact machines. Now, proton beams with energies up to 150 MeV have been achieved with a repetitive petawatt laser.

hes to inertial confinement fusion (ICF). In 1992, we embarked on a project to develop a laser capable of producing petawatt pulses in order to examine the fast ignitor concept for inertial confinement ...

Ultra-intense ultrashort lasers have a wide-ranging scope of applications, encompassing basic physics, national security, industrial service, and health care.

Ever since lasers were first demonstrated in 1960, researchers have endeavored to increase their focused intensity (power/unit area) on a target. Within a few years, the demonstration of Q ...

Now scientists can use lasers, not just particle accelerators, to study high-energy-density physics and the fundamental properties of matter. They may also be able to recreate in the laboratory the ...

Such petawatt lasers have enabled scientists to manipulate materials in new ways, emulate the conditions inside planets, and even split atoms. Now, accelerator physicists have ...

Hitting 2 petawatts, the NSF-funded ZEUS facility at U-M enables research that could improve medicine, national security, materials science and more. John Nees (left) and laser engineer ...

The world's most powerful laser systems currently provide peak powers of a petawatt (10^{15} W = 1,000,000,000,000,000 W) or even more. Reaching these extreme powers is possible via Chirped ...

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