

Oddělení diodově čerpaných laserů a realizační tým projektu HiLASE
Vás zve na seminář

Research activities on laser-plasma electron acceleration and gamma-ray generations at KAERI

Dr. Seong Hee Park

Korea Atomic Energy Research Institute, Daejeon, South Korea

KAERI has been developed a compact laser-plasma electron accelerator and a gamma-ray source using laser accelerated electrons to provide easy-accessible systems for many applications. For gamma-rays, the laser-acceleration can localize the electron acceleration, giving the compact gamma-ray source. As we know, laser accelerators are good for compact size due to localized shielding at the expense of low average flux, while linear RF accelerators are good for high average flux. One of two different schemes of Bremsstrahlung radiation and Compton backscattering may be selected depending on the required specification of photons and/or the energy of electron beams generated. Compton backscattered gamma-ray source is tunable and quasi-monochromatic. But, electron beams with their energy of at least 100 MeV are needed for MeV energy photon generation. Bremsstrahlung radiation can generate higher energy photons with 20 – 30 MeV electron beams, but its spectrum is continuous. The KAERI 30 TW Ti:sapphire laser system enable to produce electron beams of energy up to ~ 250 MeV, by using two different mirrors and gas nozzles, for gamma-ray generation. We present the design issues for a compact gamma-ray source at KAERI, via either Bremsstrahlung radiation or Compton backscattering, using laser accelerated electron beams for the potential nuclear applications.

**který se bude konat dne 20.4. 2010 od 14:00 v zasedacím sále
Badatelského centra PALS.**