

Abstract Submitted
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The progress in the neutron diagnostics in the Fast Ignition experiment with GEKKO XII and LFEX YASUNOBU ARIKAWA, TAKAHIRO NAGAI, YUKI ABE, SADAOKI KOJIMA, SHOHEI SAKATA, HIROAKI INOUE, SHINSUKE FUJIOKA, NOBUHIKO SARUKURA, MITSUO NAKAI, HIROYUKI SHIRAGA, HIROSHI AZECHI, Institute of Laser Engineering, Osaka — In the fast ignitor experiment the neutron diagnostics is very challenging due to too large backgrounds originated from hard X ray. In the Fast Ignition integrated experimental campaign held in 2010 in GEKKO XII and LFEX facility in Institute of Laser Engineering Osaka (ILE), the Xylen based new liquid scintillator coupled with the gated photomultiplier tube has successfully recorded neutron signal with heating the energy of up to 400 J. However there was significant large background in the signal originated from neutrons via (γ, n) reaction from the target chamber wall. The neutron collimator was developed and implemented to suppress these neutron backgrounds. We succeeded to record a very clear neutron signals in every shot in the fast ignitor experimental campaign held in July 2012 with the heating laser energy of around 1000 J with the pulse width of 2.2 ps. The details of the detector and the result of the fast ignition experiment will be presented.

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