

EXPERIMENTAL BENCH FOR RECORDING IMAGES OF THE FLAME FRONT WHEN USING LASER PLUG IGNITION

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ABSTRACT: The experimental bench has in its composure a laser equipment, a high speed recording video equipment, a measuring system for recording pressure variations and a static enclosure in which experiments are conducted. The recording of images was done using the shadowgraph technique, a source of light with xenon and a 3000 frames/s high speed camera with a resolution of 512x512 pixels. There were recorded and analyzed the next phenomenon: the variation of the flame front depending on the initial pressure, the variation of the pressure from inside the chamber depending on the initial pressure and also the shape and the way of how the flame front is propagated. The results are presented under the form of images and diagrams.

KEYWORDS: bench, laser equipment, ignition, static enclosure, shadowgraph method.

EKSPERIMENTALNI MOST ZA SNIMANJE PLAMENOG FRONTA KORIŠĆENJEM LASERSKOG PALJENJA

REZIME: Eksperimentalni most opremljen laserskom tehnikom, za brzo snimanje, je merni sistem za snimanje varijacija pritiska i statičkog okruženja u kojem se odvija eksperiment. Slike su snimljene tehnikom senčenja: izvor svetlosti sa ksenonom i sa 3000 slika/s kamerom velike brzine rezolucije 512x512 pixels. Sniman je i analiziran naredni fenomen promene plamena zavisno od inicijalnog pritiska, varijacije pritiska unutar komore zavisno od inicijalnog pritiska i takođe oblik i način kako se plameni front prenosi. Rezultati su predstavljeni u obliku slika i dijagrama.

KLJUČNE REČI: most, laserska oprema, paljenje, statičko okruženje, metod senčenja.

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