



פרופסור זיגפריד גלנזר

המחלקה למדעי האנרגיה

מנהל, מעבדת המאיץ הלאומית SLAC

אוניברסיטת סטנפורד, סטנפורד, קליפורניה, ארה"ב

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הרצאה במסגרת האגודה הישראלית לפיזיקה | Lecture in the framework of the Israel Physical Society

DEMONSTRATION OF IGNITION AND A BURNING FUSION PLASMA ON THE NATIONAL IGNITION FACILITY

Abstract

The demonstration of energy gain by nuclear fusion in the laboratory and its eventual utilization as an unlimited energy source has been a grand challenge for physicists and engineers for 70 years. The realization as an industrial energy source would have a tremendous impact on our society and would change our approach to energy policy and climate change. In this talk, I will present the very recent achievement of multi-megajoule energy yield from deuterium-tritium plasmas in indirectly driven inertial confinement fusion implosions on the National Ignition Facility in Livermore, CA, USA. These experiments exceed fusion powers of 70 PW in a single event, vastly exceeding human's power consumption by a factor of 3,000. This achievement came after increasing the fusion energy yield by a factor of 2,000 since the first experiments on the National Ignition Facility about a decade ago. I will discuss the discoveries and roadblocks towards ignition and how obstacles were overcome. Currently, several avenues towards power generation by fusion ignition and high yield are beginning to emerge where efforts towards laser and target technology developments have been launched through the U.S. DOE's Starfire program. I will review these efforts and will discuss the role of the emerging private industry in this field.

The lecture will be held on Thursday
11 April 2024, at 9:00
Pavilion 10, Expo, Rokach Blvd 101
Tel Aviv-Yafo

ההרצאה תתקיים ביום חמישי
11 באפריל 2024, בשעה 09:00
ביתן 10, אקספו, שדרות רוקח 101
תל-אביב-יפו