

סמינר - SEMINAR

הנך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ה' 19.01.17 (כאי בטבת, תשע"ז), בבניין דן-קאהן, קומה 0, אודיטוריום 1, 13:30.

ירצה:

Dr. Sonia Fereres

Senior Research Scientist Thermalfluids
Abengoa Research, Sevilla, Spain

על הנושא:

Effect of environmental conditions on the flaming ignition of solid combustibles

The seminar will be given in English

להלן תקציר ההרצאה:

The influence of ambient conditions on solid fuel ignition is of particular interest in spacecraft and aircraft fire safety because of the difference in environments (low gravity, low gas flow velocities, low pressure, elevated oxygen concentration). These distinct conditions result in an increased fire risk of combustible solid materials on board due to higher flame temperatures (attributed to enhanced oxygen concentration) and reduced convective heat losses from heated surfaces (attributed to reduced pressure). Experiments are conducted to measure fundamental ignition parameters such as fuel mass flux at ignition and ignition delay time as a function of ambient conditions for the piloted ignition of a solid fuel exposed to external radiant heating. A CFD code is used to analyze the effect of reduced ambient pressure and gravity on the transport processes taking place prior to ignition. The transition from an incipient premixed reaction at the pilot to the establishment of a self-sustained diffusion flame anchored on the solid fuel surface is described in detail. Flaming ignition is essentially a gas phase process and, thus, the differences between liquid or solid fuel ignition can be associated with the material gasification processes (liquid evaporation and solid pyrolysis), and with minor differences in the process of gas phase ignition. These and other considerations to understand the fundamental mechanisms leading to the ignition of condensable materials will be examined.

Bio : Dr. Sonia Fereres is a Senior Research Engineer at Abengoa Research leading thermal engineering R&D projects in solar thermal energy. She received a B.S. and M.S. in Aeronautical Engineering from the Polytechnic University of Madrid, Spain in 2004 and a Ph.D. in Combustion from the University of California, Berkeley in 2011. Her research interests include heat and mass transfer processes in combustion, ignition, flame spread, microgravity combustion, energy conversion, thermal energy storage, and solar thermal energy,

בברכה,

המארח: פרופ"מ כרמל רוטשילד

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מרכז הסמינרים