

הפקולטה להנדסת מכונות

הטכניון – מכון טכנולוגי לישראל

סמינריון

הנדך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ה' 14.01.2016 (ד' בשבט, תשע"ו), בבניין דן-קאהן, קומה 0, באודיטוריום 1 בשעה 14:30.

ירצה: בן אשל

מנחה: פרופ' ח דוד גרינבלט

על הנושא:

Closed-loop control of a plasma-enhanced vertical axis wind turbine

להלן תקציר ההרצאה:

Small-scale vertical axis wind turbines have recently become popular due to their application in the built environment. However, a major disadvantage of these turbines is the dynamic stall that their blades experience as they pitch beyond their static stall angle. This has two undesirable effects: firstly, there is a sharp drop in blade lift and hence rotor torque; and secondly large unsteady loads are imposed on the generator and drive train. A previous study demonstrated that pulsed plasma actuators on the blade leading-edges control dynamic stall and significantly improve the turbine gross power. The objective of this study was to maximize the net turbine power using both feed-forward control and closed-loop (feedback) control. The control methods were tested on a wind turbine installed in a wind tunnel that simulated atmospheric wind conditions. Different electrode geometries were also evaluated. Remarkably, a significant net turbine power increased was achieved.

בברכה,

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