

סמינריון

הנדך מוזמן/ת להרצאה סמינריונית של הפקולטה להנדסת מכונות, שתתקיים ביום ב' 30.01.17 (כז' בטבת, תשע"ז), בניין דן-קאהן, קומה 0, אודיטוריום 1, 30:14.

ירצה: רמי עווד

מנחה: פרופ' יהושע דיין

מנחה שותף: פרופ' משה שהם

על הנושא:

## Modeling of polymer as a robot

The seminar will be given in English

להלן תקציר ההרצאה:

This Thesis combines prior research in fields of robotics and biology, it models biological entities into mechanical in an attempt to improve cancer drugs efficacy via enhancing mobility and thus transportation of carriers to tumor core.

Cancer is the major cause of death all over the world. Current nanoparticles platforms offer only marginal improvements over conventional chemotherapy. Despite their potential, the nano platforms face a complex series of biological barriers that severely limit site-specific bioavailability. Removing or remodeling those barriers promotes tumor cells migration to other parts of the body!

Among the popular nanodrugs are Polymer–drug conjugates with linear architecture. Their shape resembles biologically inspired snakelike robots; serial hyper redundant manipulators with a very large number of actuatable degrees of freedom. Using this principle, compared to current nanoparticles, a snakelike polymer may have better chance of avoiding the obstacles (of blood vessels walls, lamina etc..) and getting to the tumor core.

The bigger picture is a better understanding of mechanical properties of biological entities, aiming in the future to build custom tailored drugs answering intrinsic mechanical prerequisites.

בברכה,

*פרופ' מ' שואל אוסובסקי*

מרכז הסמינרים