

Mechanical Engineering Seminar - סמינר בהנדסת מכונות

TECHNION – Israel Institute of Technology
Faculty of Mechanical Engineering

Biomechanics Seminar - סמינר בביומכניקה

הנדך מוזמנת להרצאה סמינריונית במסגרת הדוקטורט של הפקולטה להנדסת מכונות,
שתתקיים ביום ב' 16.09.13 (יב' בתשרי, תשע"ד), בשעה 14:30 בחדר 641 בבניין לידי דיווס.

ירצה: גלעד מויסייב

מנחה: פרופ' פנחס בר-יוסף

על הנושא:

Numerical simulation of Hemodynamically induced Blood Coagulation

להלן תקציר ההרצאה:

Computational modeling of hemodynamically induced thrombosis has great potential as an engineering tool for designing vascular implants such as stents, grafts and artificial valves, as well as procedures such as aneurysm coiling and vascular grafting.

The success or failure of such procedures and implants depends strongly on how they affect the coagulation mechanism, and would benefit from the introduction of an efficient computational model.

Because of the complexity of the coagulation cascade, there is currently no standard, robust and reliable modeling technique available.

The Blood coagulation Cascade will be outlined in general terms and the different approaches currently used to simulate it will be reviewed.

We will then introduce our approach to modeling blood coagulation, a mesoscopic approach that is based on particle (e.g. platelets) interactions on the basic level while avoiding modeling of individual particles.

The mesoscopic approach allows for our highly simplified model to capture the essential interactions of the coagulation cascade producing impressive correlation with experimental results with no / very few fitting parameters.

The proposed model components, assumptions and simplifications will be explained together with demonstrating the correlation with in-vitro experiments.

בברכה,

פרופ' ח' ז' ארינבאט
מרכז הסמינרים