

Guest Lecture

Prof. Avi Schroeder, PhD

Faculty of Chemical Engineering, Technion –
Israel Institute of Technology

June 15th, 2015, 10:00 am

Hörsaal Kristallographie, Institute of Chemistry and Biochemistry, Takustr. 6, 14195 Berlin

Personalized Nano-medicines

The field of cancer medicine is taking its first steps towards patient-specific care. Our research is aimed at tailoring treatments to address each person's individualized needs and unique disease presentation. Specifically, we are developing nanoparticles that target sites of cancer where they help predict which medication is best for each patient.

Metastasis is the cause of 90% of cancer deaths. In many cases, by the time a primary tumor is detected, subsets of malignant cells have already disseminated to other locations in the body seeding the spread of the disease. Nanoparticles have many potential benefits for treating metastatic cancer, including the ability to transport complex molecular cargoes, as well as targeting to specific cell populations.

The talk will describe principles for constructing lipid nanoparticles that can be programmed to perform a programmed therapeutic task in a disease site. Specifically, these systems utilize molecular-machines to synthesize therapeutic proteins onsite. The promise of such systems for treating metastatic cancer will be addressed.

Dr. Avi Schroeder is an Assistant Professor of Chemical Engineering at the Technion – Israel Institute of Technology where he heads the Laboratory for Targeted Drug Delivery and Personalized Medicine Technologies.

Dr. Schroeder conducted his Postdoctoral studies at the Massachusetts Institute of Technology with Professor Robert Langer, and his PhD in the Hebrew and Ben Gurion Universities.

Dr. Schroeder received 20 awards for his research, including being a Horev Fellow – Leaders in Science and Technology, an Alon Fellow, a Kavli fellow; a former recipient of the Intel Nanotechnology-, TEVA Pharmaceuticals-, and the Wolf Foundation PhD-student Awards. Avi is the author on 30 papers and inventor on 12 patents.

