Department of Materials
Science and Engineering

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הפקולטה להנדסה
ע"ש איבי ואלדר פליישמן
אוניברסיטת תל אביב

המחלקה למדע
והנדסה של חומרים

You are cordially invited to attend this seminar to be held on

Wednesday, December 7th, 16:00
Room 206, Wolfson Mechanical Engineering Building

Innovative strategies for the synthesis of self-assembly amphiphilic nanobiomaterials with advanced features

Prof. Alejandro Sosnik
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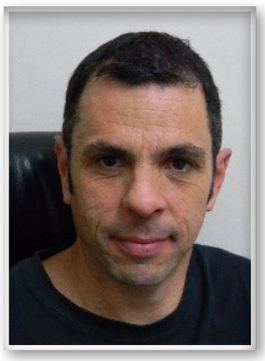
Short Abstract

Poor aqueous solubility of drugs is one of the most challenging drawbacks in pharmaceutical product development. Different nanotechnology platforms have been developed to improve the biological performance of those drugs. Polymeric micelles (PMs), nanostructures generated by the spontaneous arrangement of amphiphilic copolymers blocks above the critical micellar concentration, have emerged as one of the most versatile ones owing the high diversity of hydrophilic and hydrophobic blocks and the chemical flexibility to tailor the amphiphilic structure. One striking drawback of the PMs is their low physical stability under dilution. In addition, PMs struggle with limited ability to control the release of the cargo and actively target specific cell populations. In this presentation I will overview new approaches investigated in my group to produce PMs with advanced features and thus, extend their applications in the drug delivery field.

Biosketch + Picture



Prof. Alejandro Sosnik received his Pharmacy degree from the Faculty of Pharmacy and Biochemistry of the University of Buenos Aires in 1994. After two years as junior research scholar of the University of Buenos Aires in the field of organic chemistry (1993-5). In early 1997, he moved to Israel where after obtaining the pharmacist license, he continued his graduate studies, receiving Ph.D. in applied chemistry (polymeric biomaterials) from the Casali Institute of Applied Chemistry (The Hebrew University of Jerusalem, Israel, 2003) under the supervision of Prof. Daniel Cohn. In 2003-6, Prof. Sosnik spent a postdoctoral in the laboratory of Professor Michael Sefton (Institute of Chemical Engineering and Applied Chemistry/Institute of Biomaterials and Biomedical Engineering, University of Toronto, Canada) working in the development of hybrid matrices for cell culture and tissue engineering. Between 2006 and 2013, Prof. Sosnik was Assistant Professor of Pharmaceutical Technology at the Faculty of Pharmacy and Biochemistry (University of Buenos Aires) and Investigator of the National Science Research Council of Argentina. Owing to its multidisciplinary background and expertise at the interface of drug research and development and polymeric biomaterials, in late 2013, Prof. Sosnik was appointed Associate Professor of the Department of Materials Science and Engineering of Technion-Israel Institute of Technology where he founded the Laboratory of Pharmaceutical Nanomaterials Science. His research focuses at the interface of drug crystallization and processing, polymer chemistry, biomaterials science, nanotechnology and microtechnology, drug delivery and therapeutics. Prof. Sosnik is co-author of over 110 peer-reviewed articles, reviews, editorials and book chapters in areas of pharmaceutical research and development and innovation, and co-inventor in three patents and patent applications related to biomedical and pharmaceutical innovation.