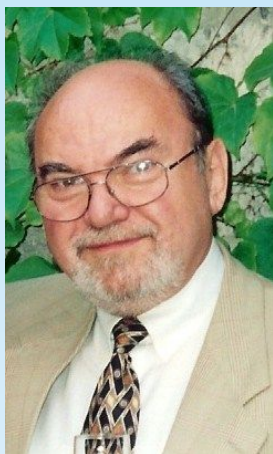


# REGIONAL CENTRE OF ADVANCED TECHNOLOGIES AND MATERIALS

## RUDOLF ZAHRADNÍK LECTURE

General Director of RCPTM cordially invites you to the lecture  
in the framework of **RUDOLF ZAHRADNÍK LECTURE SERIES**

This talk will be delivered by



**Prof. Adi Eisenberg**  
(McGill University)



**„Block Copolymer Self-Assembly in Solution - a Morphological Wonderland  
with a Range of Potential Applications”**

**Tuesday, March 10, 2015, 1:00pm, assembly hall of Faculty of Science,  
17. listopadu 12, Olomouc.**

**Adi Eisenberg** received his MA and PhD in 1959 and 1960, respectively, from Princeton University. He has been a Professor of Chemistry at McGill University since 1967, where he is currently Otto Maass Emeritus Professor. Prof. Eisenberg is a world renowned polymer physical chemist. His research interests include, among others, the exploration of block copolymer aggregates and their potential applications. Adi has been working in the field of block copolymers for more than 20 years. One of his papers (Science, 1995, 268, 1728) was the first to describe a systematic approach to obtain, in a controllable way, aggregates of multiple morphologies from amphiphilic block copolymers. This publication initiated a global effort in the systematic study of multiple morphologies in block copolymer aggregates, as well as their application in many fields, including drug delivery. Prof. Eisenberg published more than 400 papers (over 28.000 citations, H-87).

**Abstract:** The self-assembly of amphiphilic block copolymers in solution offers opportunities to obtain a range of aggregate morphologies, mostly in the size range of 100 to 1000 microns. These include, as expected, spheres, rods, and vesicles, but, under appropriate conditions, also a range of other, sometimes unique structures can be obtained, some of which are remarkably bio-mimetic. Preparative methods are described which can be used to obtain the various structures. The morphogenic factors are emphasized, among them block lengths and block length ratios, pH, polymer concentration and the presence of additives. For some systems, morphological phase diagrams have even been obtained. Kinetic and mechanistic aspects of morphological changes also receive some attention. Finally, several examples of potential applications are given.