



Singapore-MIT Alliance for Research and Technology



From Biomolecules to Biofilms

Focused Seminar Series on Biomolecules and Biofilms

11 April — 6 June 2016, Level 5 Seminar Room, Enterprise Wing @ UTown, S'138602

Seminar 6: Biofilm architecture and composition determined from the mechanical properties of matrix

Dr. Binu Kundukad

Singapore MIT Alliance for Research and Technology
(SMART)

Date: 23 May 2016, Monday

Time: 4pm to 5pm

Venue: Perseverance Room, Enterprise Wing Level 5 @
UTown



Abstract

Biofilms are formed when microorganisms secrete a viscoelastic matrix of extracellular polymeric substance (EPS) that adheres them to surfaces and to each other. The EPS is a cross-linked network of polymers made up of polysaccharides, nucleic acids, proteins and other macromolecules that facilitate biofilm formation and maintenance. The matrix also facilitates cell-cell interactions, protection of the cells from environmental stresses, and for providing the three-dimensional architecture of the biofilm. As a result they pose a challenge in both environmental and health care setting. In this seminar I will discuss how the structure and composition of biofilm colonies can be determined from the mechanical properties of the matrix. I will also discuss about how this understanding helps in developing methods to eradicate biofilm.

Biography

Dr. Binu Kundukad is currently a postdoctoral associate in Biosystems and Micromechanics Interdisciplinary Research Group of Singapore-MIT Alliance for Research and Technology (SMART). Her current research focuses on using biophysical tools to study the mechanics of biofilm and development of therapeutic strategies for biofilm eradication.