

Lab-on-a-chip for the study of bacterial biofilms and their enzymes for applications involving “living chemistry”

In this talk, I will discuss the modern analytical chemistry tools used in the service of studying bacterial biofilms and developing them into functional materials for different biotechnologies. These include microfluidic-analytical flow cells that maintain precise biofilm growth conditions while measurements can be obtained. The newest tool is an automated spectrofluidic system which has been developed based on a highly engineered approach to selectively scan different locations on-chip. This talk will be in 3 parts: background on biofilms and microfluidics, our group’s previous FTIR studies on biofilms, and our current work developing automated spectrofluidics and its role in a major research partnership with the Queen’s led plastic valorization project.