



INSTITUTE FOR CELLULAR ENGINEERING

Engineering Surfaces to Create and Utilize Dynamic and Specific Particle-Surface Interactions

IGERT Associate: Aaron Chen

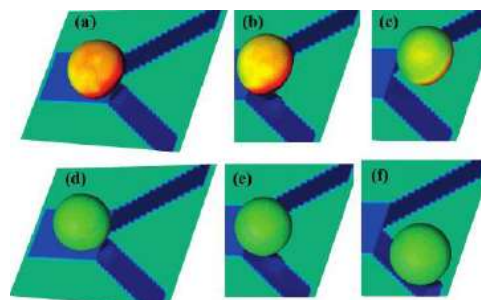
PI: Prof. Maria Santore (UMass Polymer Science and Engineering)



Image of flow cytometer from <http://www.hku.hk/patho/facilities/images/cytometer-b.jpg>

In fields ranging from marine biology to medicine, flow cytometry represents the current state of the art in separating cells. However, the process requires expensive and relatively large equipment, as well as specialized fluorescent tags for the samples to be tested.

Our goal is to engineer a novel surface that can be used in microfluidic chambers to accomplish the same function as a flow cytometer, but for lower cost and with less complicated machinery. In addition, further modification of the surfaces could allow them to trigger specific responses in targeted cells, such as apoptosis in cancer cells.



Above: Diagram from O. Berk Usta showing governing principles of project

Left: A potential surface: the inside of a DVD disc

