



第21回

物理工学科セミナー

日時： 7月16日（水） 15:00 – 16:30

場所： 葛飾キャンパス研究棟8F 第2セミナー室

Speaker : Pallab Sinha Mahapatra

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Title : Wettability engineering: droplet transport and applications in energy

Abstract :

Due to the high surface-to-volume ratio, microfluidic systems enable us to work with small quantities of samples and reagents at low cost. Microfluidic devices have widespread applications in many chemical, biological, and medical industries. Most conventional microfluidic systems are based on a closed channel configuration where microchannels are fabricated in a rigid substrate (e.g., silicon-based substrates, glass, PMMA, etc.) or soft elastomer or PDMS. There are also several operational difficulties because of dependence on the components for liquid transport (i.e., pumps, actuators, energy source for pumps, etc.), which inhibits the possibility of using these devices at the point of care. On the other hand, open-surface microfluidics is an evolving liquid management platform and sub-category of microfluidics. Different wettability engineering techniques are used to fabricate these open-surface platforms. With the advances in wettability engineering, it is possible to get surfaces with high contact angles, and we can fabricate surface wettability patterns. Here, I will talk about wettability engineering for fabricating open surface platforms that can be used for droplet transport and different energy applications.