



Rapidly prototyped flexible microfluidic devices for biochemical applications

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Abstract:

Microfluidics is a well-proven and well-applied field, which has now moved to real-life fully robust and automated applications. With rigorous properties amenable to be used in a variety of areas, from energy to biomedical, microfluidics has evolved and become contemporary by incorporating various other leading methods and processes. One of the basic features of this technology is the evolution of new and novel fabrication technologies to realize on-demand flexible devices. Such technologies include 3D printing, ink-jet printing and direct laser writing, whereby a 3D microfluidic device can be fabricated in a fully one-step by feeding a 3D design to the printer in a fully robotic manner. In our lab, such devices have been developed and leveraged to realize various biochemical platform technologies. This includes microviscometer, biofuel cell and biosensing, for various sensing and monitoring applications, and energy harvesting. The presentation will encompass the development of the aforementioned technologies, their applications and future scope towards development of fully integrated, automated and turnkey microfluidic devices.



Biography:

Sanket Goel is the Head and Associate Professor with the Department of Electrical and Electronics Engineering BITS-Pilani, Hyderabad campus. Prior to this, he headed the R&D department and was an Associate Professor at the University of Petroleum & Energy Studies (UPES), Dehradun, India (2011-2015).

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