



## SCDT – FlexE Centre Webinar Series

The webinars aim to bring together researchers in Flexible Electronics and allied areas from across India (and other countries) on a single platform to promote professional interaction.

### Webinar by



### Dr. Kothandam Krishnamoorthy

Polymer Science and Engineering Division,  
CSIR-National Chemical Laboratory, Pune

on  
“Conjugated Polymer based Flexible  
Electronic Devices”

Date: 13<sup>th</sup> June, 2023

Time: 7:30 PM to 8:30 PM

Visit [www.iitk.ac.in/scdt/webinars.html](http://www.iitk.ac.in/scdt/webinars.html)  
to access the zoom link to join the  
webinar.

The event will be chaired by

**Dr. Soumyajit Das**

Indian Institute of Technology Ropar

### Abstract of the Webinar

Conducting flexible substrate is one of the vital components of flexible electronic devices. A large number of synthetic and natural substrates are flexible, but they are insulators. An electroless metal deposition is an easy approach to converting the insulating substrates into conductors. However, electroless deposition on synthetic and natural substrates is a challenge. Usually, the surface must be anchored with  $\text{Sn}^{2+}$  to initiate the metal deposition. For anchoring  $\text{Sn}^{2+}$ , a surface must have a functional moiety. Furthermore, the  $\text{Sn}^{2+}$  anchoring may affect the mechanical properties of the substrates. To circumvent these issues, we developed a deceptively simple method to coat synthetic and natural substrates with metals such as gold, palladium, and nickel. Those substrates were used to fabricate flexible and compressible energy storage devices. We used conjugated polymers as active materials. In this talk, I will provide the details. Furthermore, I will discuss our efforts in the fabrication of flexible dye-sensitized solar cells. I will also discuss our conjugated polymer designs that are suitable for flexible electronic devices.

### Information about the speaker

Dr. Kothandam Krishnamoorthy is currently a Senior Principal Scientist at CSIR-National Chemical Laboratory (NCL). He did his PhD at IIT-Bombay with Professor Anil Kumar in the Chemistry Department. Later, he was a post-doc at Georgia State University and New Mexico State University. Subsequently, he was a Research Professor at UMASS-Amherst. In 2009, he started his independent research group in CSIR-NCL, Pune. He has been working on energy devices using organic small molecules and polymers. He edited a themed issue on Organic Field Effect Transistors for Physical Chemistry Chemical Physics published by the Royal Society of Chemistry - UK along with Zhenan Bao, Wenping Hu, and Antonio Facchetti. He was awarded Alexander von Humboldt Experienced Researcher Fellowship in 2016.