



## 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



### Prof. Sanjiv Sambandan

Indian Institute of Science (IISc),  
Bangalore

On

**“Analog Integrated Circuit Design with  
TFTs - Strategies and Tactics”**

**Date:** 13<sup>th</sup> April, 2021

**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  
Prof. Aruntej Mallajosyula, IIT Guwahati

### Abstract of the Webinar

Circuit design with TFTs is complicated by several problems with two important ones being –

- (a) the absence of complementary devices (CMOS) in several cases;
- (b) the bias-dependent variation of threshold voltage with time which results in time varying transfer functions. To add to this, poor mobility and fabrication limitations form constraints that affect the overall reliability of circuits having many TFTs.

In this talk, I will discuss some strategies based on my research to overcome these problems, namely –

- (i) Using feedback to achieve complementary device action;
- (ii) Design of self-compensating circuits to ensure time-invariant transfer functions;
- (iii) Invention of new devices that perform the role of an entire circuit - here I will discuss two examples from my research namely, the textured gate TFT and the adaptive dielectric TFT.

### Information about the speaker

Sanjiv Sambandan is an associate professor at the Department of Instrumentation and Applied Physics and the Department of Electronic Systems Engineering, IISc, Bangalore. He is also a joint faculty position at the Department of Engineering, University of Cambridge. Prior to academia, he was at Xerox Palo Alto Research Centre, CA, USA. He is the founder of openwater.in, a spin-off from his lab at IISc.