

Short Course Description

Course Title

Printed and Transparent Electronics for Flexible Displays

Course Description

This course will provide an overview of the physics, chemistry, and technology behind printed and transparent electronics for flexible displays. A review of the benefits and disadvantages of printed technology will be provided, including an overview of various printing techniques. An introduction to materials for printed electronics as well as for transparent electronics will be provided, including a review of organic semiconductors, printable nanomaterials, and semiconductor and conductors based on transparent conductive oxides. An overview of device architecture and device design issues impacting the deployment of printed and transparent electronics into display applications will be provided, including an analysis of device architectural choices and the implications of printing technology and materials choices on device performance. Finally, an analysis of application-requirements and of design choices and trends will be provided, thus providing participants with a comprehensive overview of technology and trends in both printed and transparent electronics for the display industry.

Benefits and Learning Objectives

This course should enable participants to discuss the benefits and disadvantages of printing and transparent electronics technology for displays.

This course should enable participants to describe the state of the art in printed electronics technology.

This course will enable participants to describe the state of the art in transparent electronics technology for displays

This course will enable participants to discuss the design tradeoffs associated with both printed and transparent electronics for displays

Intended Audience

This course is targeted at individuals with a working knowledge of transistor physics. Some familiarity with display technology is also useful, since this

topic will be reviewed on my briefly. Some exposure to organic and inorganic chemistry is useful but not required. Generally, this course is targeted at people working in the semiconductor industry or in semiconductor-related research with appropriate degrees in electrical engineering, material science, physics, or related field.

Instructor Biography



Vivek Subramanian received his PhD from Stanford University in 1998. From 1998 to 2000, he served as a founder and member of technical staff of Matrix Semiconductor. Since 2000, he has been with the EECS department at the University of California, Berkeley, where he is currently an Associate Professor. His research interests include display technology, organic and printed electronics, and memory technology. He has published extensively in these areas. He is a founding technical advisor to Kovio, a startup company working on printed electronics. He is a member of the IEEE.