Notice and Invitation

Oral Defense of Master's Thesis

The Volgenau School of Engineering, George Mason University

Roberto Flores

Bachelor of Science, The City College of New York, New York

Compensation for Threshold Instability of Thin-Film Transistors

Thursday, April 20, 2017, 11am

Room 4201 Engineering building

All are invited to attend

Committee

Dr. Dimitris Ioannou, Thesis Director

Dr. Qiliang Li

Dr. Houman Homayoun

Abstract

Organic Light Emitting Diode (OLED) has attracted an incredible interest for display applications due to benefits such as a wide viewing angle, high contrast ratio, vivid color, low power consumption, high response speed in comparison to Liquid Crystal Displays (LCD). However, Active-Matrix Light-Emitting Diodes (AMOLED) display uniformity has been affected by the instability of the threshold of thin-film transistors (TFT) and degradation of OLEDs. Therefore, there is a recognized need for urgent progress in the display technology to achieve better quality and lower cost display. Currently, several approaches have been investigated in order to compensate the deterioration of the TFT and OLED. However, the speed of the compensation, accuracy of the compensation and the impact of the display resolution are still a concern. Therefore, this thesis describes new driving methodologies and circuit schematics that compensate effectively the instability of threshold of thin-film transistor (TFT) and degradation of organic-light emitting diode (OLED).