**Društvo MIDEM**

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**“Low Frequency Noise Characterization as a Diagnostic Tool for The Characterization of Advanced Semiconductor Materials and Devices”.**

Predavanje bo

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Predavanje bo potekalo v angleščini.

**Abstract:**

The potential of low frequency noise diagnostics for the characterization of semiconductor materials and devices will be demonstrated. First a brief review is given of the physics related to fundamental noise mechanisms (white noise, 1/f noise, GR noise). For scaled down technologies, Random Telegraph Signals (RTS) are becoming dominant. Noise analysis gives information on the quality of gate dielectrics and interfaces, outlines the impact of processing steps such as stress engineering, replacement gate processing, metallization schemes, etc. and can be correlated with the device reliability. Examples will be given of LF noise behavior of advanced CMOS devices like SOI devices, memory devices, FinFETs, tunnelFETs, nanowire transistors, 2D transistors etc. The noise performance of Ge-based and III-V technologies processed on a Si platform will also be addressed.