



KOÇ UNIVERSITY

Math-Science Seminar

Speaker: Charlie Ironside (Glasgow University, Department of Electrical and Electronics Engineering)

Title: Electric field switching in a resonant tunneling diode electroabsorption modulator

Date and Time: Thursday, February 22, 4:45 pm.*

Place: Room Z42, Science Building, Koç University, Rumelifeneri Yolu, Sariyer 80910 Istanbul, Turkey.

Abstract: The basic mechanism underlying electric field switching produced by a resonant tunneling diode (RTD) is analysed and the theory compared with experimental results; agreement to within 12% is achieved. The electroabsorption (EAM) device potential of this effect is explored in an optical waveguide configuration. It is shown that a RTD-EAM can provide significant absorption coefficient change via the Franz-Keldysh effect at appropriate optical communication wavelengths around 1550nm and can achieve up to 28 db of modulation in 200 micron active length device. The advantage of the RTD-EAM over the conventional reversed biased pn junction EAM is that the RTD-EAM has in essence an integrated electronic amplifier and therefore requires considerably less switching power.

*Refreshments to be served in Science Building, Room Z40 at 4:30 pm.