



DEPARTMENT OF MECHANICAL ENGINEERING
Purdue School of Engineering and Technology

SPRING 2003 SEMINAR SERIES

Date: Thursday, January 30, 2003
Time: 11:00 am - 11:30 pm
Room: SL 165

Reception at 10:45 am (cookie and refreshments served)
Everyone is invited

ME 597 Project

**2D and 3D Steady and Transient Thermal Analysis for
Integrated Circuit (IC) Package**

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The thermal performance of an Integrated Circuit (IC) package has been investigated. This IC package is being designed to go into the ignition coil of an automobile. The package contains a control silicon die and an Insulated Gate Bipolar Transistor (IGBT). During operation, high current (15 Amperes) is to be passed through a thin aluminum pad located on top of the control die. Due to the passing of high current and electrical resistivity of aluminum, heat will be generated in the package. The purpose of these analyses is to predict the increase in temperature along the top surface of the silicon and in the package due to the passing of this high current. 2D and 3D non-linear finite element models are created and solved for given current and resistance data for this purpose.