



**BILKENT UNIVERSITY**

**unam** - INSTITUTE of MATERIALS SCIENCE & NANOTECHNOLOGY

***FACULTY OF SCIENCE***

**MATERIALS SCIENCE and NANOTECHNOLOGY  
GRADUATE PROGRAM SEMINAR**

**“Pulsed Terahertz Radiation as a Diagnostic Tool”**

**Asst. Prof. Dr. Hakan Altan**

Middle East Technical University  
Department of Physics

The terahertz (THz) region of the electromagnetic spectrum, the far-infrared, has numerous applications towards characterizing low-energy phenomena in a number of wide and diverse materials. In this talk we will investigate the use of THz time-domain spectroscopy towards analysis of gases, bulk and nano-composite semiconductor materials, biological materials, liquids, various solids and plasmas. Emphasis will be given to parameters that are extracted and parameters which can be modeled. The discussion of these techniques will also shed light on our understanding of the way these spectrometers function. Especially we will discuss the types of terahertz spectroscopy systems and their short comings if any compared to other methods such as FTIR. During the talk we will give specific examples of measurements done at our labs in METU to give listeners an idea of the potential applications of these systems in their own laboratories.

**Date : March 5, 2009 (Friday)**

**Time : 15:40**

**Place : Faculty of Science Building, A Block, Seminar Room (SA 240)**

**Tea and cookies will be served after the seminar**