Seminar by Dr. Rafik Bachnak on "Application of Eddy Current to Crack Detection in Materials"

The Notre Dame University Student Branch of the Institute of Electrical and Electronics Engineers (IEEE) organized

a seminar by Dr. Rafik Bachnak Professor at Texas A&M International University and Fulbright Scholar
On

Application of Eddy Current to Crack Detection in Materials

Date: Friday November13, 2009
Time: 12:00-1:00 noon
Place: Room E107, Engineering Building, NDU

Biography

Dr. Bachnak is a Professor at Texas A&M International University (TAMIU). He received his B.S., M.S., and Ph.D. degrees in Electrical and Computer Engineering from Ohio University in 1983, 1984, and 1989, respectively. Prior to joining TAMIU in 2007, Dr. Bachnak was on the faculty of Texas A&M-Corpus Christi, Northwestern State University, and Franklin University. His experience includes several fellowships with NASA and the US Navy Laboratories and employment with Koch Industries. Dr. Bachnak is a registered Professional Engineer in the State of Texas, a senior member of IEEE and ISA, and a member of ASEE. He is currently at Notre Dame University as a Fulbright Scholar.

Abstract

Nondestructive Testing (NDT) plays an important role in ensuring that components and systems are free of defects that compromise their functionality. NDT testing techniques, for example, are used to locate flaws that might otherwise cause major catastrophic events such as plane crashes, train accidents, and plant explosions. The tests are performed in such a way that objects under inspection are not damaged or affected in any way. While there are several NDT methods, the three widely used techniques for materials testing and evaluation are radiography, ultrasonic, and eddy-current. The presentation will describe the development of an eddy current prototype that combines positional and eddy-current data to produce a C-scan of tested material. The preliminary system consists of an eddy current probe, a position tracking mechanism, and basic data visualization capability. Test results of the prototype will be presented and briefly discussed.

Dr. Rafik Bachnak

Students and faculty members attending the seminar

NDU IEEE Student Branch members with Dr. Bachnak