

# **Biomedical Engineering Seminar**

## **A Saccadic Eye Movement Measurement System**

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**Thursday, October 17, 2002**

**5-6pm**

**United Technologies Building, Room 150, Storrs**

### **Abstract:**

The operating version of the Eye Tracker, a transducer and system using a technique to bounce infrared light off the eye to measure saccadic eye movements in any X-Y position is presented. Discussed is the method of reading and analyzing eye movement data using a 24-channel infrared optoelectronic array and computer algorithms that utilize a linear regression model to interpret and determine eye location, the 24-channels used to ensure accurate reading of eye position. Accuracy is also maintained by a signal processing system that attenuates incident light as well as ambient light. Also discussed is a novel method of mounting the infrared array on hemispherical shaped eyepieces that in turn are mounted on goggles styled after an ophthalmologist's test frames that is comfortably worn and adjustable in size to fit any subject. A computer controlled, wall mounted light bank facilitates targeting for eye movements. The Eye Tracker is built to meet standards of a professional medical device manufacturer following typical mechanical, electrical, and safety techniques unique to device packaging.