



# ΙΤΕ/ΕΙΧΗΜΥΘ

## ΠΡΟΣΚΕΚΛΗΜΕΝΗ ΟΜΙΛΙΑ ΠΡΟΣΚΕΚΛΗΜΕΝΗ ΟΜΙΛΙΑ

**ΟΜΙΛΗΤΕΣ:** **Dr. M. Nazmul Karim**

Whitacre Department Chair and Professor  
Department of Chemical Engineering, College of Engineering  
Texas Tech University, USA

**ΘΕΜΑ:** **What are the challenges and opportunities in the context of semi-arid regions of the world.**

**ΤΟΠΟΣ:** Αίθουσα Σεμιναρίων ΙΤΕ/ΕΙΧΗΜΥΘ

**ΗΜΕΡΟΜΗΝΙΑ:** **Παρασκευή, 3 Ιουνίου 2011**

**ΩΡΑ:** **12:00**

### **ΠΕΡΙΛΗΨΗ:**

In this presentation, I will describe the challenges for producing biofuels from renewable lignocellulosic biomass. The plant grown in semi-arid climate provides a unique opportunity of the scientists and engineers to look for solutions for providing energy independence from foreign oil. I will discuss various routes, which can be taken to process the biomass and produce energy in various forms. Chemical, biochemical and other methods of treatment will be discussed. The key challenges and thus the opportunities in each technology will be explored. Research done at Texas Tech University will be used as examples. Future direction of research will focus on developing multidisciplinary approaches to solve these important technological challenges.



## **Dr. M. Nazmul Karim: Short Bio**

Before joining the Department, Dr. Karim was a professor of chemical engineering at Colorado State University. He has been a visiting professor at Helsinki University of Technology, Technical University of Denmark, Osaka University and the University of Newcastle upon Tyne. Trained in process control and optimization theories, he has been involved in biotechnology research for the last twenty-two years. Examples of his recent research topics are the application of on-line model predictive control of recombinant fermentations (e.g. E coli, CHO cells) and the use of data based approaches such as Neural Networks and Principal Component Analysis, to classification, fault detection and identification of bioprocesses. Dr. Karim is also involved in research areas such as lignin biodegradation and recombinant fermentation for ethanol production from mixed substrates. His recent research activities involve regulation of apoptosis in mammalian cell culture, proteomic data-analysis for metabolic pathway modification, and effects of shear stress on t-PA protein production in CHO cells. Funding for his work has come from the National Science Foundation, USAID, the Department of Energy, and the Colorado Institute for Research in Biotechnology, and various industries. He is the director of the successful short course, "Advanced Industrial Bioprocessing," offered every year for the biotechnology industries.