Keynote Talk

Innovation process in academia and in small businesses

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Price Center Gallery B

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As major engineering research and development centers in the US, such as Bell Laboratories, and HP labs., close their doors, and the high tech manufacturing facilities transition to overseas, new pressures are exerted on US engineering schools and small businesses. In this new era, where corporate R&D is kept at a minimum, and product cycles are becoming shorter and shorter, new scientific knowledge developed at Universities must be rapidly turned into innovations to maintain the global competitiveness of US designed products. In addition to new scientific knowledge, true innovation also requires knowledge on manufacturing processes, and market and cost trends, a type of knowledge that is not available at universities but that mostly resides with experienced entrepreneurs and product development and marketing experts. Thus tighter collaborations at the academia-small business interface have the potential to further fuel innovation. During this presentation I will attempt to describe the process of innovation at the academia and small businesses by using specific real life examples.

Sadik Esener ('87 Ph.D., UCSD) is a Professor at the Electrical and Computer Engineering Department at the Jacobs School of Engineering and also a member of the Moores Cancer Center at UCSD. He is currently leading the Optoelectronic Computing Group and directing the Nano Tumor Center of Excellence for Cancer Nanotechnology funded by NCI. In the past he has directed the Center for Heterogeneous Integrated Photonic Systems (CHIPS), the Opto-Electronic Stacked Processors industry/university consortium as well as the Fast Read-out Optical Storage consortium funded by DARPA. He is a fellow of OSA, has more than 300 publications, and 18 issued patents. He received a certificate of recognition from NASA in March 1987 for his invention on optically enhanced random access memories. He was also the recipient of the Best Invention Award by the US patent office in 2000. Dr. Esener is co-founder of several local companies including Nanogen, Genoptix, Call/Recall, OMM, and Ziva corporations. His research interests include Information Photonics and optical interconnects, optical data storage, Biophotonics, Cancer Nanotechnology and the Heterogenous integration of dissimilar materials.