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Texas universities collaborate on batteries

NT professor to research longer-lasting energy sources

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As technology continues to bring us iPods, cell phones and hand-held gaming systems, the need for longer battery life has been at the forefront of the search, said Saraju Mohanty, of the College of Engineering faculty. Mohanty was awarded a \$200,000 grant from the National Science Foundation to model power performance output of digital systems.

Over the next three years, Mohanty, with the help of researchers from Texas A&M University will study the power and performance of digital systems through computer-aided design.

NT graduate students will also take part in the research, and the design software used to test each power system will help teach the students the inner workings of very large-scale integrated components.

Today's digital systems involve tradeoffs among its functionality and power consumption, Mohanty wrote in his official proposal to the foundation. In order to simplify the design process and create digital systems with high functionality but low power consumption, a digital designer must be able to choose appropriate technology and choose a system with adequate power performance aspects.

In other words, Mohanty wants to make stuff work better, longer.

The aim of Mohanty's study, entitled "A Comprehensive Methodology for Early Power Performance Estimation of Nano-CMOS Digital Systems," is to provide a framework through which both companies and academic institutions will be able to select battery systems that will be most efficient for certain types of electronic devices. "Texas Instruments has been interested in the findings of the study," Mohanty said. "As have other companies but [Texas Instruments] has shown a lot of interest."

NT will be the leading university in the study with very little outside help from researchers at Texas A&M University.

Once the project is completed, Mohanty will make the results widely available through the project's official Web site, workshops, tutorials and other methods of technology sharing for both academic and industrial use.

"The foundations of this study are at the cutting edge," said Oscar Garcia, dean of the College of Engineering. "[Mohanty] is working on ways to make everyday things more efficient. From laptops to digital music players, the design of faster and lower power integrated circuits is at the cutting edge of the design process." Page **1** of 1

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