



Analog Research Center Awards Almost \$3 Million

Grants From Semiconductor Research Corp. Target Public Safety and Security

Aug. 10, 2009

The Texas Analog Center of Excellence at UT Dallas has awarded nearly \$3 million to Texas researchers to develop analog technology that enhances public safety and security.

The projects funded by the grants are intended to:

- Enable a new generation of devices that can scan for harmful substances such as explosives and chemical agents by researching 200-300-GHz silicon integrated circuits for use in spectrometers.
- Significantly reduce the cost of in-vehicle radar technology that could help improve automotive safety by researching circuit techniques that can improve manufacturing and lower test and packaging costs.

“We’re excited to announce this first round of funding, which will be followed by another round early next year focused on medical, health and energy-independence technology,” said Dr. Kenneth O, director of TxACE. “We are committed to being a catalyst for technology development in key areas of importance.”

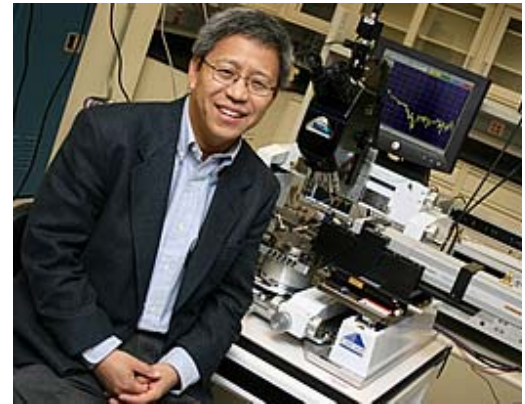
Recipients of the three-year grants come from Texas A&M University, UT Austin, Rice University, the University of North Texas and UT Dallas.

TxACE received 34 requests for funding. The recipients were chosen by a Semiconductor Research Corp. (SRC) Industrial Advisory Board for TxACE, which consists of representatives from Advanced Micro Devices, Freescale Semiconductor, IBM, Intel and Texas Instruments.

“Our member company representatives are delighted with the selections and are pleased to work with Dr. O to develop and refine research needs so that funding may be put into place,” said Dr. David Yeh, director of Integrated Circuit and System Sciences at SRC. “Results from these new projects can change the future of electronics.”

The 11 funded projects and their principal investigators are:

- Development of CMOS Sub-Terahertz Receivers for Spectrometers – Bhaskar Banerjee, UT Dallas.
- Signal Generation for 200-300-GHz Spectrometers – Kenneth O, UT Dallas.
- Millimeter-Wave Phase-Locked Loop Design With Enhanced Tolerance to Process and Temperature Variation – Ranjit Gharpurey, UT Austin.
- MIMO Radar for Pixel Reduction in Millimeter-Wave Imaging – M. Saquib, UT Dallas.
- A Hybrid 14-bit Analog-to-Digital Converter for Broadband Applications – Jose Silva-Martinez, Texas A&M University.
- UxID: Unclonable Mixed-Signal Identification for Integrated Circuits – Farinaz Koushanfar, Rice University.
- Energy-Efficient CMOS 10-GS/s 6-Bit ADC With Embedded Equalization – Sam Palermo, Texas A&M University.
- Fast PVT-Tolerant Physical Design of RF IC Components – Saraju Mohanty, University of North Texas.
- Development of Antenna and Chip Interface Systems for Millimeter-Wave and Submillimeter-Wave Applications – Rashaunda Henderson, UT Dallas.
- 77-81-GHz CMOS Transceiver With Built-In Self Test and Healing – Bhaskar Banerjee, UT Dallas.



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- Variation-Tolerant Analog Design Based on Generalized Kharitonov/Lyapunov Theory – Dian Zhou, UT Dallas.

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About SRC

Celebrating 27 years of collaborative research for the semiconductor industry, SRC defines industry needs and invests in and manages the research that gives its members a competitive advantage in the dynamic global marketplace. Awarded the National Medal of Technology, America's highest recognition for contributions to technology, SRC expands the industry knowledge base and attracts premier students to help innovate and transfer semiconductor technology to the industry. For more information, visit src.org.

About TxACE

Texas Gov. Rick Perry announced the creation of [TxACE](#) last fall. Designed to create leading-edge analog technology for both traditional electronics and emerging applications, the center is a \$16 million collaboration among Semiconductor Research Corp., the state through its Texas Emerging Technology Fund, Texas Instruments Inc., and the UT System and UT Dallas. Analog technology is vital for connecting digital electronics with the real world.

About the Texas Emerging Technology Fund

The \$200 million Texas Emerging Technology Fund was enacted by the Texas Legislature in June 2005 to expedite the commercialization of innovations and to create and establish private sector entities that will increase high-quality jobs and increase applied research projects for Texas institutions of higher education. The ETF assists early-stage companies with the commercialization of scientific breakthroughs and matches grants for the development of emerging technologies and the acquisition of research talent for Texas institutions of higher education. The ETF was renewed at \$203.5 million in the state legislature's 2009 session.

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