

UT Arlington Researcher Receives Grant to Develop Quantum Sensors

Electrical Engineering Assistant Professor Michael Vasilyev of the University of Texas at Arlington has received a \$225,000 contract from the Harris Corporation to investigate using quantum properties of light to enhance the angular and spatial resolution of optical remote sensors.

Dr. Vasilyev's project is part of a Defense Advanced Research Projects Agency Quantum Sensors Program award for an 18-month, Phase I study led by the Harris Corporation. Other participants in the project are the Massachusetts Institute of Technology and Northwestern University, plus BBN Technologies, a Cambridge, Massachusetts research and development firm.

The Quantum Imaging Laser Detection and Ranging (LADAR) proposed by the team will offer a significant improvement in resolution over conventional laser sensors used today. As part of the investigation, Dr. Vasilyev's group will analyze and design a parametric-amplifier-based quantum image enhancer for the recovery of the information lost by both attenuation of high spatial frequencies of the image and inefficiency of the detector array. "This research will allow future laser-enabled cameras to see remote objects more clearly and use much smaller amounts of light than today," said Dr. Vasilyev.

The work is supported by the Defense Advanced Research Projects Agency under United States Air Force Contract FA8750-07-C-0206.

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