For immediate release

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Sensor Electronic Technology, Inc. awarded phase II SBIR contract from MDA for AlInN/GaN based FETs.

Columbia, SC, USA – October 29th, 2010 – The Missile Defense Agency (MDA) has awarded Sensor Electronic Technology, Inc. (SETI) a $750,000 Phase II Small Business Innovation Research (SBIR) contract to continue the development of AlInN/GaN hetrostructures for X-band RF power amplification devices.

Although GaN based transistors have emerged as a future technology for high power microwave applications, technical challenges arising from the lattice mismatch between the AlGaN barrier layer and the GaN channel continue to lead to reliability issues. During Phase I of this SBIR program, SETI demonstrated the technical feasibility of using its patented MEMOCVD® (Migration Enhanced MOCVD) technology for the growth of Ga-free high quality AlInN layers and produced AlInN/GaN hetrostructures with up to 22% Indium content and achieved record sheet electron concentration in excess of $4.5x10^{13}$ cm^{-2}. World record HFETs were produced using this material structure with peak drain currents exceeding 2 A/mm and f_t and f_{max} above 100GHz. Phase II of this program will scale the technology to 3-inch wafers with improved uniformity.

Since lattice matched AlInN/GaN hetrostructures do not suffer from strain related effects, significant device reliability improvements are expected. Moreover, due to much higher Al fractions in latticed matched AlInN/GaN heterostructures very high 2D-electron concentration can be achieved at very small barrier thickness. This will result in very high cut-off frequencies at very high maximum currents.

For more information on SETI, please visit www.s-et.com or contact us directly at info@s-et.com or on (803) 647-9757