

# 0.25 $\mu$ m GaN HEMT Library

## Technology Overview

- Non-linear GaN HEMT models of 0.25  $\mu$ m gate length HEMT operated at drain bias of 20 to 30 V for designing MMICs based on Angelov-GaN model for ADS are available in the library. In-house laboratory facilities for processing and metrology are used for establishing all the key device technologies. These facilities are available for timely updates of any device parameters whenever needed.

## Core Technologies

- 0.25  $\mu$ m gate length HEMT fabricated using 100KV e-beam direct writing
- Resistor : NiCr TFR (20 $\Omega$ /sq.), Mesa (500 $\Omega$ /sq.)
- Inductor : Rectangular, Circular
- Capacitor : MIM capacitors > 100V

## Application Area and Advantages

- Library for designing broadband/high-power amplifiers GaN
- $f_t \cong 50$  GHz /  $V_{br} > 150$  V
- Power density : 5 W/mm
- High temperature operation (up to 225 $^{\circ}$ C)

## Accomplishments

- GaN-dedicated laboratory available for stable operation and timely updates
- A number of intellectual properties including SCI papers and patents
- Licensing and/or joint research project for commercialization preferred

