



Ferroelectric Varactor Devices

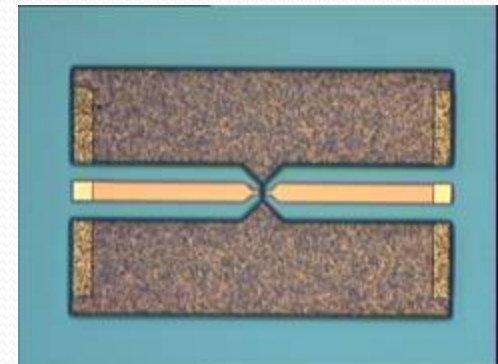
(Subramanyam)

Objective:

- Develop frequency and phase agile circuits based on low voltage, high Q Barium Strontium Titanate (BST) varactor devices

Impact:

- Tunable filters for receiver front-end
- Low phase-error low-voltage phase control circuits (360 degree phase shift with ~ 5 V).



Highlights:

- Large area (4") BST thin films with superior tunable ($>4 : 1$) properties
- High Q as high as 200 at 10 GHz
- Low leakage currents (<10 nA below 5 V dc bias)
- Temperature dependence $\sim 5\%$ over 20 C to 100 C
- Filed 3 Patents in the BST varactor devices
- Technology licensed by Analog Bridge Inc.
- CRADA between Analog Bridge, AFRL, and UD
- **Research funded by AFRL, DARPA, and Analog Bridge (IDCAST)**
- * **Currently supported by a DARPA Phase II program**

