

## SESSION 6: MANUFACTURING

Chairs: Jim Crites, *Cobham DES*

Sessions relating to manufacturing have always garnered a lot of interest in the community as these authors are sharing details on how they are engaged in the day to day quest for manufacturing excellence.

The first paper in this session offers insight into planning and problem solving when an operating 4" manufacturing site upgrades to larger wafer size. In this particular case it was a high volume HBT line and one of the key requirements was to make the transition seamless to the customers. From the complexity of tool conversion to the angst of throughput issues, this paper strives to offer a template for success.

Our next paper is a presentation on how a fab with older processing tools upgraded to allow for automation of process recipes and data monitoring. Tools without host computers were evaluated and creatively adapted to incorporate interlocks, barcode capability, or direct data transfer. In doing so, they have achieved a reduction of processing error rates and improved production yield.

Specialized material assessment is the topic of the next paper. Because channel sheet charge density is such a critical predictor for DC performance in pHEMT epi material, the authors of this paper devised a method to characterize the wafers without the need to sacrifice viable material. The ability to proactively adjust growth parameters has led to improved process output.

Next is a paper which aims at the heart of manufacturing excellence; determination of process shifts. While every tool or operation has some measurable outcome, many times it is determined only through the use of witness wafers or sacrifice of product wafers. Can one simple measurement gauge the variation of multiple parameters simultaneously? This paper advocates the utilization of carefully measured wafer mass to detect process shifts.

And finally, in a poster presentation at the Interactive Forum, is a paper devoted to extolling the benefits of on-line data analysis. Referencing a particular software package, the authors will elaborate on how easy access to manufacturing metrics can help improve productivity and yield.