SESSION 4: QUALITY AND YIELD
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Yield is a very important metric of any manufacturing process. Whether it is the farmer who plows his field or the compound semiconductor factory that processes wafers, this metric is tracked everywhere and seemingly is never high enough. While yield is so important to the manufacturer, the customer demands quality products that satisfy the stated and implied needs free of deficiencies.

Quality and Yield are the common theme of the four papers presented in this session. The first paper from TriQuint Semiconductor discusses the prediction, validation and the improvement of yields of Multi-Chip RF modules during product development. Methods are outlined for modeling and validating RF module yield from the early concept to pilot production as many critical business processes depend on it.

Over the years, papers have been presented at CS MANTECH discussing quality initiatives such as 6-Sigma and Zero Defect. Are those enough to achieve the highest quality our customers expected from us? In the second paper of this session, Freescale Semiconductor examines what goes beyond those strategies. Freescale Semiconductor reviews a major shift in culture that changes from detection and correction to prevention methodologies.

Knowledge is key to any yield improvement. The key to knowledge is data. The compound semiconductor manufacturing process – from the bare wafer to the final product – generates lots of data which is typically scattered throughout an organization in different databases. The third paper by RFMD describes how fabrication data is being scrutinized to uncover knowledge to drive yield. It will discuss how data is obtained from various sources, filtered and relationships are established.

Outlier die are characterized as atypical when compared to die from the same wafer or lot. Those die can impact yield and quality of the final product. In the last paper of this session, TriQuint Semiconductor examines the shortcomings of two widely-used outlier detection methods and introduce a more robust non-parametric algorithm for the removal of atypical die that the customer does not want in his product.