

**Test Results on the Superconducting 9-cell Cavities for the TESLA Test Facility Linac, M. PEKELER\***, for the TESLA Collaboration, DESY - More than twenty-five 9-cell cavities produced by four European companies have been tested so far at the TESLA Test Facility in a vertical cryostat. The majority of the cavities exceeded the design goal of 15 MV/m accelerating gradient at a quality factor  $Q > 3E9$  and gradients up to 29 MV/m have been achieved. Techniques have been developed to avoid defects in the bulk of niobium and insufficient equator welds which were identified as limiting factors. Recently most of the cavities are not limited by thermal breakdown at gradients above 20 MV/m, but by field emission and the cw RF power available. Using the excitation of the cavities in other coupled modes, accelerating fields up to 36 MV/m could be reached in individual cells of the 9-cell structure. The performance of the first 9 cavities installed in the linac is comparable to the vertical test results, gradients up to 25 MV/m have been achieved.