High Field SC-Cavities, D. PROCH, DESY - Two mechanisms limit high fields in superconducting cavities: thermal breakdown (quench) and loading by field emitted electrons. In the first case defects like normal conducting spots, bad weldings or thermal insulated particles on the surface might act as heating spots and should be avoided. Increased thermal conductivity of the cavity wall could also stabilise possible quench location. In the second case small micro sized particles have been identified as location of field emission. They must be avoided by appropriate cleaning techniques and ultra clean handling. Accelerating gradients around 20 MV/m could be achieved with multicell cavities, values from 30-43 MV/m were gained in single cell resonators. This can be compared with the thermodynamics limit of 50 MV/m equivalent to 200 mT surface field (Nb). These recent results are discussed in respect to the quality of Nb material and preparation techniques like high temperature firing, high pressure water cleaning and high RF power processing.