

## PROGRESS WITH LARGE GRAIN CAVITIES & SEAMLESS CAVITIES

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### *Abstract*

R&D on cavities fabricated from large grain LG niobium discs explores its potential for the industrial fabrication. Basic material properties, comparing LG material to standard sheet niobium, material availability, production and preparation aspects (what is the appropriate treatment for reasonable and stably reproducible accelerating gradient) are under investigation. Several laboratories successfully RF tested many single cell LG cavities. Eleven 9-cell LG resonators produced at the company ACCEL from W.C. HERAEUS discs are in the preparation and partially RF tested at DESY. Technological aspects of seamless tube fabrication and cavity production by hydroforming reached good progress in last years. Problems of multi cell cavity fabrication from bulk niobium are mainly solved. Several two cell- and three cell- niobium cavities have been produced by hydroforming at DESY. A 9-cell cavity of the TESLA shape has been completed from three sub-sections at company ZANON. The cavity reached an accelerating gradient of  $E_{acc} = 30.3$  MV/m after DESY EP treatment. Two new 9-cell hydroformed cavities in completion work at the company E. ZANON

**CONTRIBUTION NOT  
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