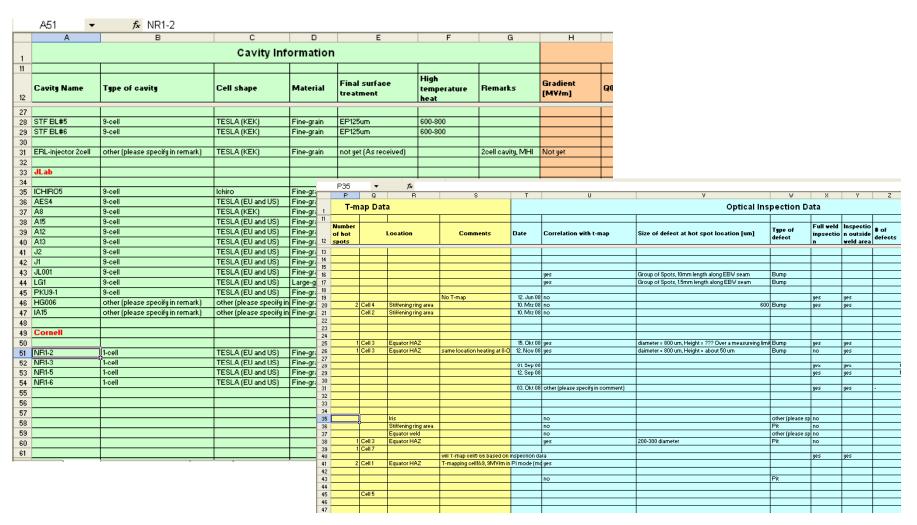


Discussion of Optical Inspection and Temperature mapping Results

- Several new inspection and mapping systems are online now
 - Temperature mapping, 2nd sound
 - High-resolution optical inspection (KEK-Kyoto, Questar)
- Need to get a overview of where similar problems have been observed
 - Catalogue of defects observed
 - Measure the effectiveness of optical inspection
- Several people from several institutes have contributed their data in a common format
 - Thanks to K. Watanabe (KEK), R. Geng (JLab), C. Ginsburg (FNAL), Z. Conway (Cornell), S. Aderhold (DESY)
 - Thanks to all colleagues involved in the data taking
- This is a work in progress and therefore not complete
 - Further data will be added when available e.g. LANL just came in



Short Overview of the Common Template





Cavity and RF Data

- Cavity Information
 - Cavity Name
 - Type of cavity
 - Cell shape
 - Material
 - Final surface treatment
 - High temperature heat treatment
 - Remarks
- RF Result
 - Gradient [MV/m]
 - Q0 [10¹0]
 - Field emission Onset field [MV/m]
 - Limitation
 - Comment



Optical and T-map Data

- T-map Data
 - Date
 - Type of T-map
 - Mode which was t-mapped
 - Number of hot spots
 - Location
 - Comments
- Optical Inspection Data
 - Date
 - Correlation with t-map
 - Size of defect at hot spot location [um]
 - Type of defect
 - Full weld inspection
 - Inspection outside weld area
 - # of defects
 - # defects >500 um
 - # defects 200-500 um
 - # defects 100-200 um
 - # defects <100 um



Data Analysis

- This cannot be done immediately
 - Should be careful to do interpretation correctly
 - Feedback with the Lab where data originates should be integrated
- Very preliminary first look



Preliminary Summary

- Number of cavities inspected
 - 21 nine-cells
 - 4 single-cells
 - 3 other
- T-map and optical inspection available on
 - 13 Cavities
 - Other Cavities have
 - incoming inspection only
 - no t-mapping yet
- Correlation T-map Optical inspection
 - 7 Yes
 - Various types of defects have been found
 - 3 Field emission
 - Scratches found in other locations
 - 3 No direct match
 - Still surface defects have been found
 - Partially additional surface treatment after last t-map



Next Steps

- Optical inspection has shown very good initial results
 - Immediate improvement of production process e.g. Cornell new vendor single-cells
 - Local repair needs to be evaluated on cavities for effectiveness
- Need to
 - Continuously follow-up incoming data
 - Establish correlation between types of defects and RF performance
 - Follow up on the nature of defects on samples
 - Geometrical features
 - Chemical composition
 - Other?