THE FABRICATION OF BEPCII 500MHZ SUPERCONDUCTING CAVITIES

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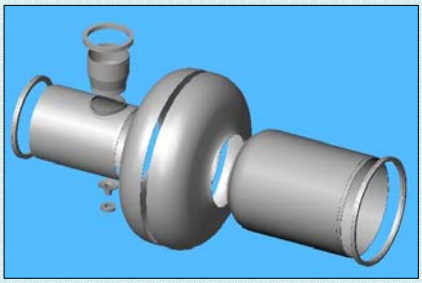
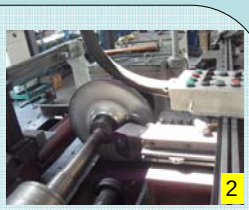
INTRODUCTION

Since Nov.2006, the 500MHz SRF system of Beijing electron positron collider upgrade (BEPCII) works stably. But there's a hidden danger for no spare cavity is existed. If there's any serious trouble happened on either one of the two operating cavities and cannot be recovered in time, it will affect the operation of BEPCⅡ facility.

Spare cavities began to be investigated since 2009. Now three cavities are developed and two of them had been vertical tested at Jan and July 2011, respectively.

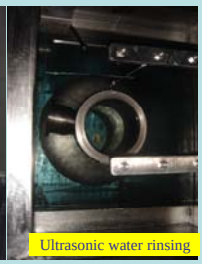


SPINNING



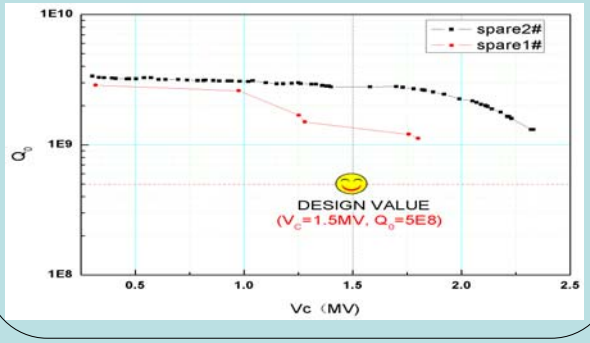
HALF CELL SPINING PROCESS

SPINNING PARTS



Post- procession and vertical test preparation

VERTICAL TEST RESULTS



	Target	Spare 1#	Spare 2#
Vc (MV)	1.5	1.80	1.30
Q0	5.0E8	1.12E9	1.20E9

CONCLUSION

IHEP SRF group fabricated, post processed and tested the 500MHz superconducting cavities independently. The test results indicate that cavities' performance meet the design value. All the fabrication and post-process techniques were reasonable.

The high power input coupler, high order mode damper and cryostat have been development successfully in IHEP before.

One cavity will be assembled with the coupler, HOM damper and cryostat and plan to carry high power horizontal test at OCT 2011.

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