





Location of OTIC







Location of OTIC

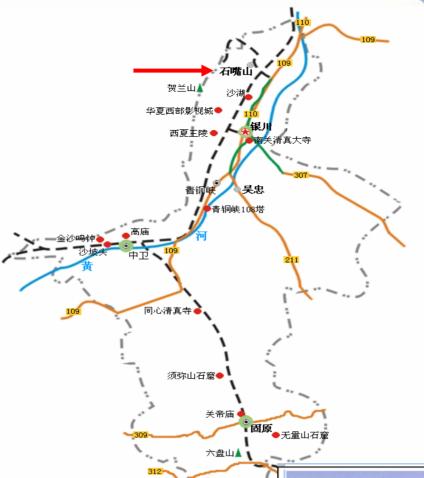




















General Introduction of OTIC



CNMC Ningxia
Orient Group
Co.,LTD

Northwest Rare
Metal Material
Rearch Institute

Ningxia
Orient Tantalum
Industrial Co.,LTD

Ningxia Orient
Superconductor
Technology
Co., LTD

Ningxia
Jinhe Chemical
Co., Ltd



General Introduction of CNMNC



***CNMNC**

Capital: 746 Million RMB

Employee: 5737

***OTIC**

Capital: 353 Million RMB

Employee: 2417



General Introduction of OTIC



Main Product

- Tantalum Powder >200T / Y
- Tantalum Wire 80T / Y
- Ta/Nb plate & tube & welding product for CPI,capacitor industrial and furnace components
- Ta alloy product
- Nb alloy product
- Titanium
- BeCu alloy





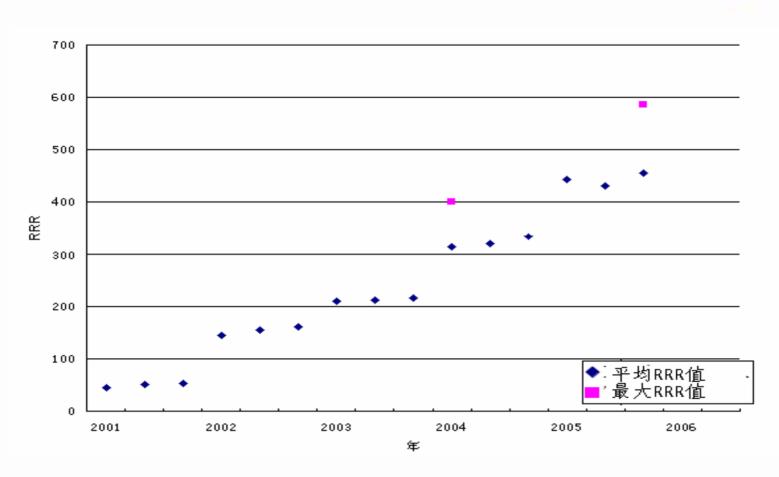
The Factory was founded in 1968, and the Nb was produced since then.

⋄ Nb products:

- ingot
- billet
- sheet
- tube
- wire
- welded products















High RRR Nb ingot

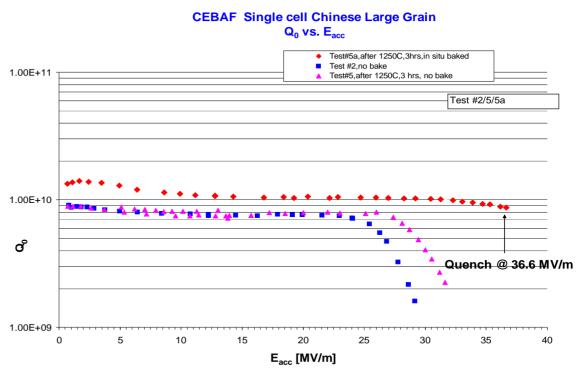
High RRR Nb sheet



Ree = 353



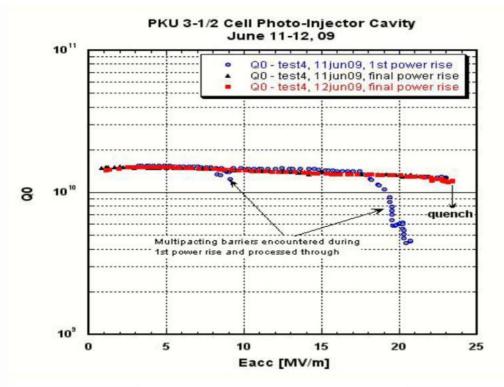








A 3.5cell large grain cavity made by PKU were operated at a gradient 23.5MV/m in 2009.

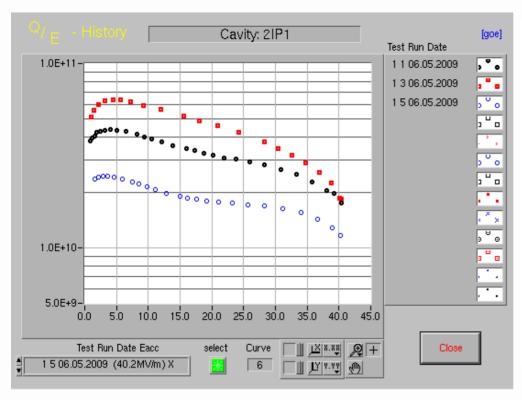


tested by JLab









Conclusions:

- No Q disease
- E=40.2 MV/m, Q=1.2·10¹⁰,BD, no FE after MP processing in 1st Pi mode run at 1.8 K.
- Q versus T done up to 1.5 K. Residual resistance of Nb material was 4E-9 Ohm.
- MM: both modes limited by BD, at 40 and 44 MV/m, without FE.
- Very good cavity made of a good Nb material.
- China may be a next producer of good superconducting cavities.

Krzysztof Twarowski

tested by DESY



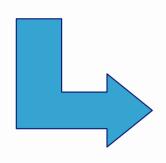
Liquid-to-liquid Process



Ore → **Nb2O5**











600kw EB furnace



Nb→Nb(RRR)



Advantages



- Hydrometallurgy
 - limit Ta,W,Mo
- Alumiium Thermal Ruduction
 - limit C
- 600kw EB furnace remelting
 - limit O,N,H
 - limit low meltpoint element









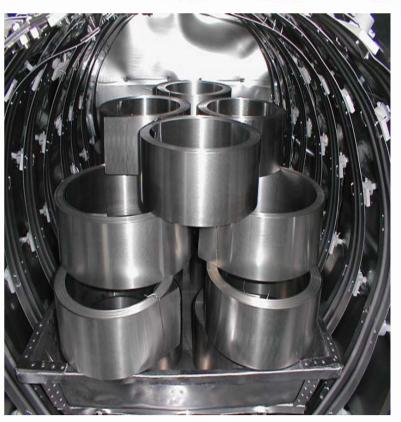






Vaccum furnace





Ta heater

~10⁻⁴Pa

~1400°C

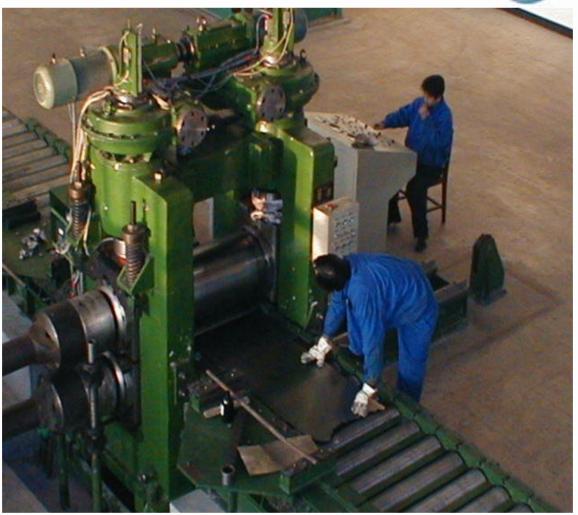




 Φ 1000 \times 1250 2 Rollers Rolling Mill







 Φ 450imes800 2 Rollers Rolling mill







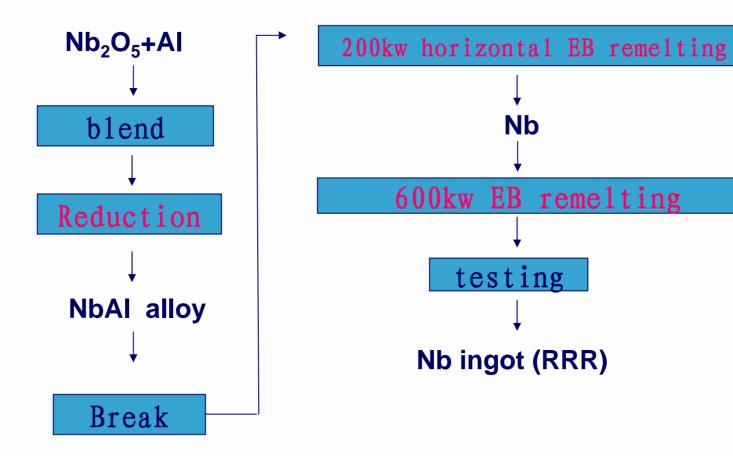
 Φ 230/ Φ 550×800 4 Rollers Rolling Mill



Process



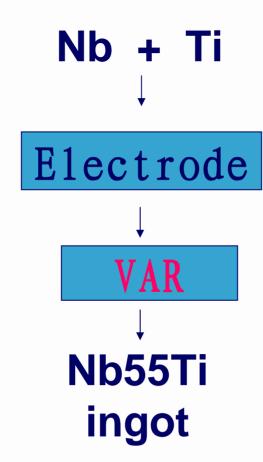
Nb ingot





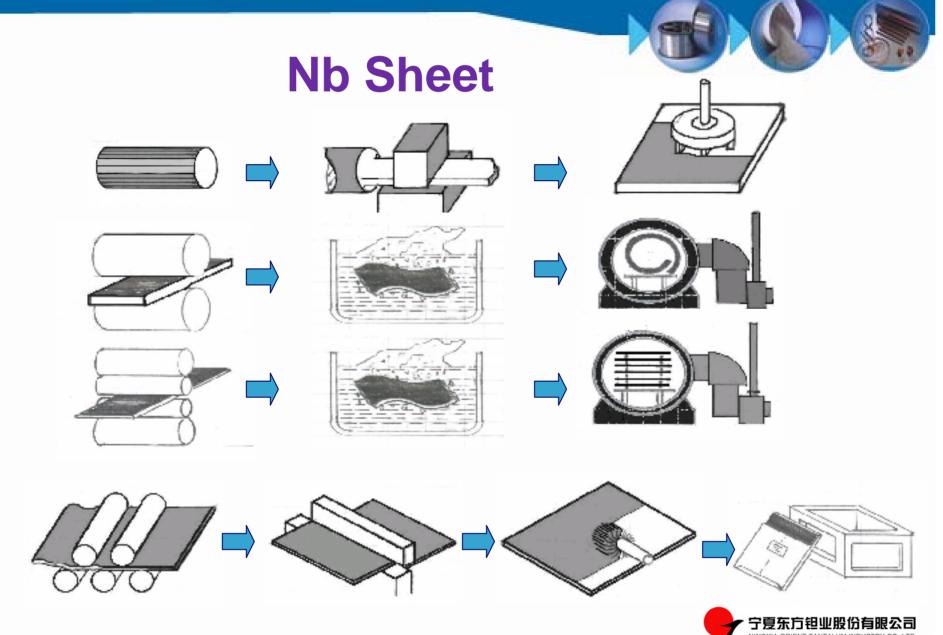


Nb55Ti ingot





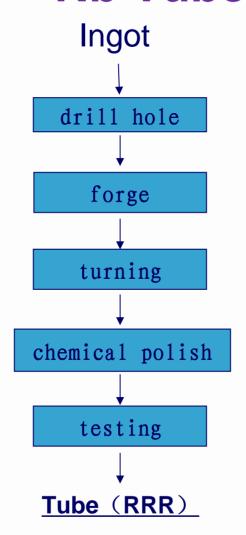
Process



Process



Nb Tube





Nb tube (RRR)



Materil for Europe FEL



No.	Material	Parts	Demension (mm)	amount
1	RRR300	Nb sheet	265x265x2.8	2943
2	Nb55%Ti	NbTi Ring	OD220xID100 xT5	1366
3	RRR 40	Nb sheet	1100 x 342 x 2	55
4	RRR 300	Nb sheet	360x305x9	22
5	RRR 40	Nb Ring	OD135xID75xT27	683
6	Nb55%Ti	NbTi bar	DIA142xL1000	3690



Quality Control



- Mechanical property analysis
- Chemical analysis
- Surface check

RRR measurement



Certificate of management





Certificate No.00806O10611R1L NINGXIA ORIENT TANTALUM IN

> CO. LTD --- Yejin Rd. Dawukau District. Shi: P.R.C.753000

> > is in conformity with

GB/T19001-2000 (idt ISO9001:2000)

This certificate is valid to the followin

Design, Development, Production and Se Tantalum and Niobium and Their Compou Alloys and Wrought Products (Including LiTa) Crystals and Wafers), Beryllium Allo Their Wrought Products, Silicon Carbide, Ind Conductive Thin-Film Materials and Coatin

Issue Date: 2006.10.23 Date: 2009.10.22

System Certi





Add: No.105 Yejin Road TUV NORD

CERTIFICATE

Quality Assurance System for Material Manufacturer acc. to Pressure Equipment Directive 97/23/EC

Certificate no.: 07-202-1326 WZ-1556/11

Name and address of manufacturer.

Has been assessed a

The Activities of B

Alloy and Their Wi

This certificate is

Chin

In the case that the organ

be valid when used togs

Date: January 20, 2005

-22222222222222222

Ningxia Orient Tantalum Industry Co., Ltd. Ninoxia 753000, P.R. China

This is to certify that the manufacturer has implemented and applies a QA System This QA System has been subjected to a specific assessment for material acc. to Directive 97/23/EC with regard to the materials mentioned within the scope of approval.

Approved:

QA System acc. to Directive 97/23/EC Annex I, sec. 4.3 1226W405110

Audit report no.: Scope of approval:

Niumbium, Niumbium-Alloy and Niumbium-Titanium-

Typ of Product: Sheets and flats products, bars Details of the scope are mentioned in the annex of the

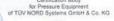
Ningxia 753000, P.R. China Production site:

The manufacturer disposes of the essential procedures and equipments as well as the required qualified personnel to ensure quality of manufacturing and testing the materials and products mentioned in the scope of approval

Hamburg 2011-03-21

Certification Body

| Demark of validity, | Valid until 04, 3914 | Valid 04, 3914 | Val







测量管理体系认证证书

CERTIFICATE OF CONFORMITY FOR MEASUREMENT MANAGEMENT SYSTEMS

证书编号 No. CMS [2006] 137号

东方钽业股份有限公司

石嘴山市大武口区

邮编 753000

色位在产品质量、经营管理、节能降耗、环境监测等方面的 并合 GB/T 19022-2003/ISO 10012-2003 《测量管理体系-测 设备的要求》标准的全部要求,特发此证。

that your measurement management systems conforms to the ISO 10012:2003.

有效性依据认证中心的定期监督获得保持,并在认证标志下 的有效年度。

2004年11月2日

Signature

2009年11月1日

Approved by Issuing authority



火年度

007. 10



Production Capacity



- *RRR300 Nb sheet 20T / Y max
 - For ILC demand, it may meet 20% and finish it in 6 Years.
- ❖ Nb55Ti flange 50T / Y
- ❖ Ti pipes and flange 500T / Y



Prospective



- Ningxia orient superconductor technology Co.,Ltd
 - Cavity fabrication
- Development and improve
 - Disk
 - Tube
 - Deep drawing
 - Welding
 - Rod
 - Coupler housing and F part
 - Quality improve



Thank You!

