

# Bruker Energy & Supercon Technologies (BEST)



Superconductivity for Healthcare & Science



# BEST Overview

- BEST is a business unit of Bruker Corporation with > 400 employees dealing with:
- Superconductors (LTS and HTS)
  - Bruker EAS GmbH
  - Bruker HTS GmbH
- Cuponal™ & Composites for Busbars
  - Hydrostatic Extrusions Ltd
- RF systems, LINAC & Synchrotron Instrumentation
  - RI Research Instruments GmbH



# Bruker EAS

Superconductors for Healthcare & Science



Bruker EAS plant in Hanau, Germany

- Started R&D and production of superconductors as a business unit of Vacuumschmelze GmbH & Co. beginning of the 1960's.
- Located in Hanau, Germany
- Acquired as part of Bruker in 2003
- BEST manufactures and delivers >60,000 km of advanced metallic superconductors wire per year
- More than 50 years of experience in R&D and manufacturing of superconductors

# Bruker HTS

HTS Superconductors for Analytical Instrumentation & Science



Bruker HTS plant in Alzenau, Germany

- Started R&D and production of superconductors as a spin off of the University of Göttingen end of the 1980's
- Located in Alzenau, Germany
- Acquired as part of Bruker in 2004
- Focusing on Highest Quality HTS Coated Conductors for high field application
- Pilot Plant Manufacturing of HTS

# Hydrostatic Extrusions

Cuonal Busbars and wires



Hydrostatic Extrusion plant in Perth, Scotland

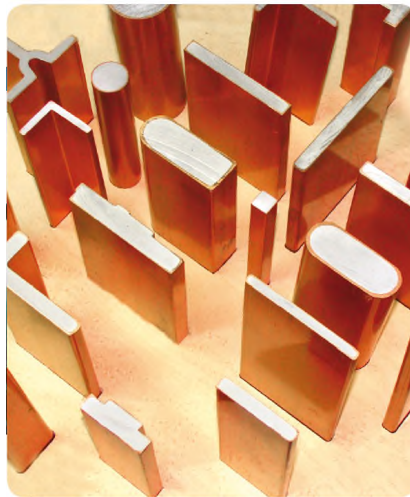
- Located in Perth, Scotland
- Acquired as part of Bruker in 1991
- Focusing on Cu clad Aluminum busbars and wires
- Operates a hydrostatic extrusion press to produce highest quality Cuonal with output > 450 t annually
- More than 40 years of experience

# BEST CUPONAL

Product Range



Cuponal Busbars



Cuponal wire



## **Cuponal™ product advantages:**

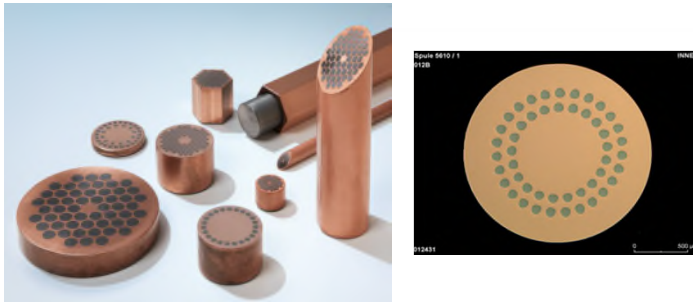
Lower and more stable cost and lighter weight than copper  
Lower electrical contact resistance than aluminium

# BEST Superconductors

## Product Range



NbTi based



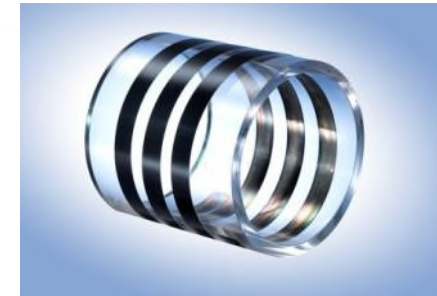
NbTi (Niobium-Titanium)

NbSn based

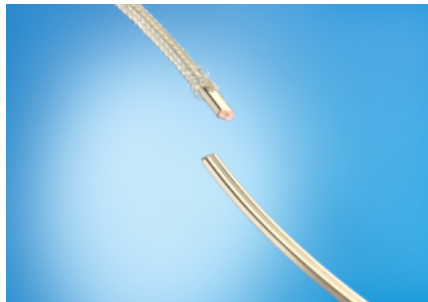


Nb<sub>3</sub>Sn Bronze route  
(Niobium-Tin)

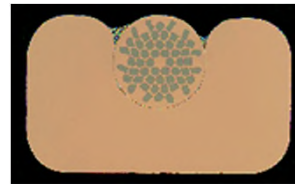
HTS based



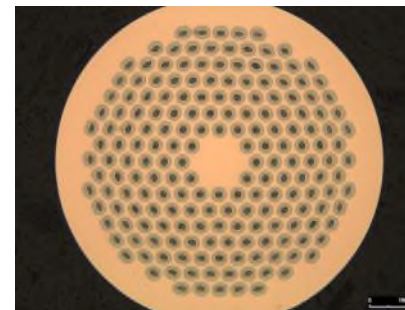
YBCO HTS



NbTi Wire in Channel (WIC)



$B < 9.5 \text{ T}$



Nb<sub>3</sub>Sn PIT (Niobium-Tin)

$B > 10 \text{ T}$

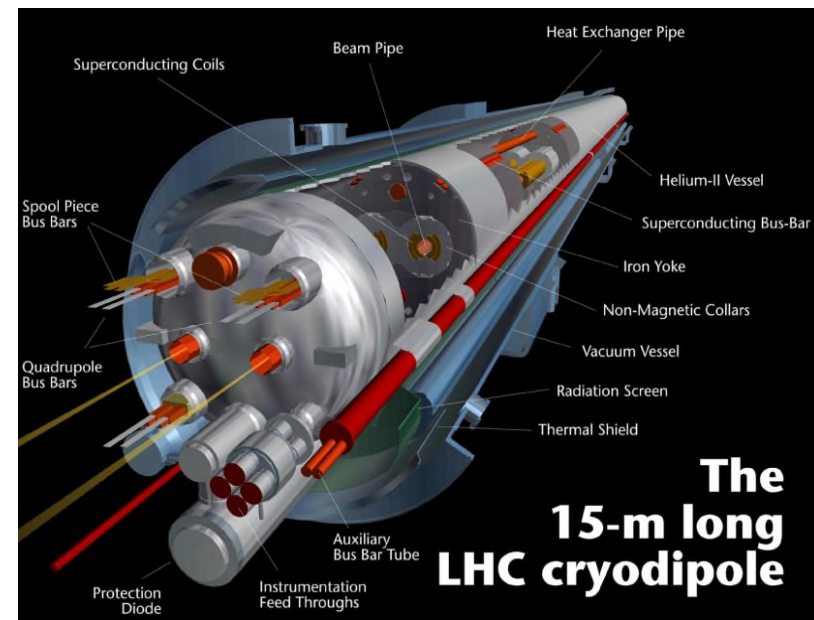
$B > 20 \text{ T}$   
or  
 $T > 4.2 \text{ K}$

# LTS Application Experience of BEST

## High Energy Physics



- BEST has long term experience in HEP supply
- BEST participated in the supply of superconducting wire and cable for the LHC
- BEST is currently also engaged in HEP grade NbSn wire for the HI-Lumi LHC upgrade
- In addition, BEST has participated in many other Science projects as superconducting wire supplier and has proven its capabilities as reliable long term partner for the supply of superconductors for Big Science projects like ITER.



Large Hadron Collider, LHC at CERN



# Further Information on BEST

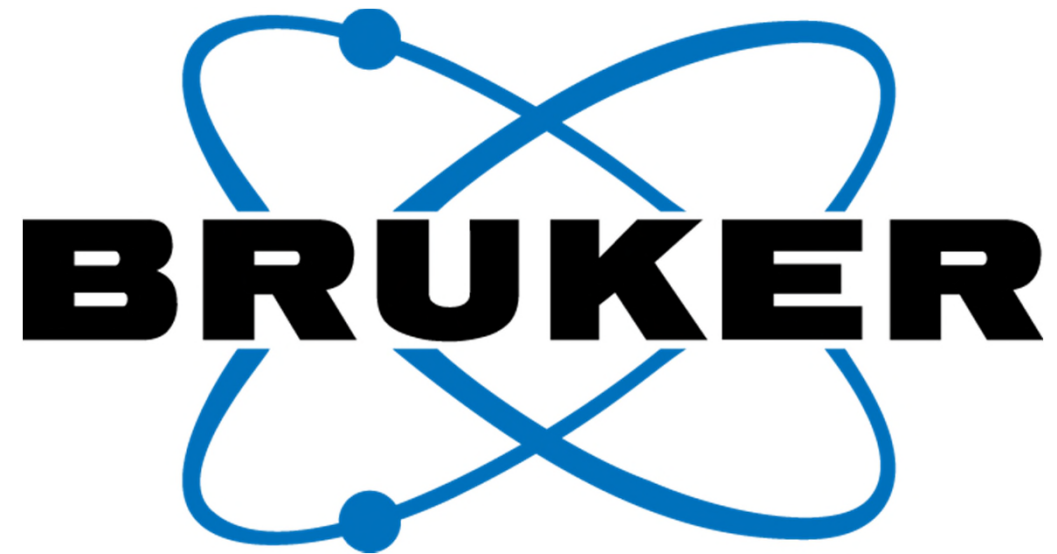


- **Bruker Website**

**[www.bruker.com/products.html](http://www.bruker.com/products.html)**

- **Further information on BEST:**

**[andre.aubele@bruker.com](mailto:andre.aubele@bruker.com)**



Innovation with Integrity