



## Customized cryosystems

**Cryostats (metal, glass/carbon fiber reinforced resin)**

**Cooling and liquefaction systems**

**Cryogenic actuators, sensors and pumps**

**Energy storing systems (H<sub>2</sub>, CH<sub>4</sub>, ...)**

**LNG technology**

**Sensor calibration**

**Customized electronics**

**Individual software and visualization**

**Engineering, calculation and simulation**

**Heat to Power**

**Thermal cycle and material tests ( $\lambda$ ,  $\alpha$ ,  $c$ ,  $P$ , ...)**

**Cryobiology – Life Sciences**

### Contact

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Certificate in accordance  
with the requirements of the  
Pressure Equipment Directive  
DGRL 97/23/EG, Modul A1  
for cryostats  
Ident-No. CE 0525



## Liquefaction systems



## High-Power Helium Refrigerators / Liquefiers

### Features

- Cooling power: 100 W up to several kW @ 4.4 K
- Fully automatic operation modes
- Automatic cool down mode
- Joule-Thomson-valve (JT) or wet turbo-expander
- Re-liquefaction rate more than 85 %
- With programmable logic controller (PLC)
- High pressure helium inlet up to 25 bar (abs)
- Support for shield and current leads cooling

### Applications

- Special designs on customers demand
- Cooling for superconductor applications e.g. magnets for JINR and GSI

JINR - Joint Institute for Nuclear Research, Dubna

GSI - Helmholtzzentrum für Schwerionenforschung, Darmstadt

## High power cryogenic test field at ILK

- LHe and LN<sub>2</sub> cooling
- High cooling power equipment
- Helium purification plant
- High pressure helium recovery



## Applications at customers place

### Test facility for superconducting magnets for NICA and FAIR

