

# Consultancy in magnetics and cryogenics



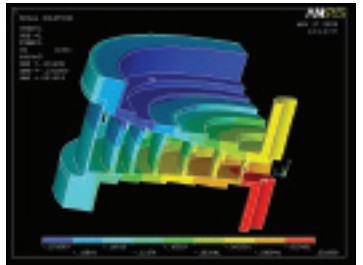
Looking for leading expertise **to model and design magnet options** for your new product concept?

Or do you need **efficient cryogen-free cooling** for your new application, but lack the know-how to design it in-house?

Oxford Instruments is your ideal consultancy partner, providing:

- Modelling and design of systems and their components for cryogenic and magnet applications, using in-house software and proprietary products such as ANSYS, OPERA and COMSOL
- The development of new processes and device concepts, prototyping and testing
- Materials and technology feasibility assessments and project management

When you use Oxford Instruments as your consultancy partner, you access both the immense personal expertise of our engineers and scientists - many of them leading experts in their own right - and 50 years of manufacturing and innovation experience as a world-leading company.



## Unrivalled expertise & experience

### Hardware systems and applications

Magnets  
Cryogen-free cooling  
Sub 10K refrigerators  
Recondensing helium  
Active shielding  
Design for manufacture

### Modelling and design expertise

FE modelling  
Thermal design  
Quench analysis & protection schemes  
Stress analysis  
Eddy currents

### Materials at high fields and low temperatures

NbTi and Nb<sub>3</sub>Sn wires  
HTS conductors  
Metals & Alloys  
Epoxy resins  
Insulators  
Cryogenics

**UK**

Tubney Woods, Abingdon  
Oxfordshire OX13 5QX  
Tel: +44 1865 393 200  
Fax: +44 1865 393 333

**China**

Rm. 14-F, No.1 Plaza  
No. 800 Nanjing East Road  
Shanghai 200001  
Tel: +86 21 63608530/1/2/3  
Fax: +86 21 63608535

**Germany**

Otto-von Guericke Ring 10  
65205 Wiesbaden  
Tel: +49 6122 937 171  
Fax: +49 6122 937 175

**Italy**

Pieve Emanuele, Milan  
Tel: +39 335 7378794

**Japan**

Haseman Building  
2-11-6 Tomioka, Koto-ku  
Tokyo 135-0047  
Tel: +81 03 5245 3261  
Fax: +81 03 5245 4472

**Spain**

Majadahonda, Madrid  
Tel: +34 91 602 7337  
Fax: +34 91 602 7337

**USA**

300 Baker Ave., Suite 150,  
Concord, MA 01742, USA  
Tel: +1 978 369 9933  
Fax: +1 978 369 8287

Email:

[nanoscience@oxinst.com](mailto:nanoscience@oxinst.com)

Visit our website:

[www.oxford-instruments.com](http://www.oxford-instruments.com)



## Customer-focused projects

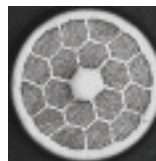
Our consultants will work with you to confirm your requirements and to produce a proposal focused on achieving your objectives. You choose the initial level of contribution you want and can extend it further as your needs develop.

## Examples of previous consultancy projects

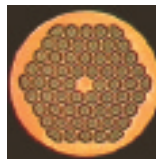
- **Feasibility design studies** for novel magnet applications with comparison of alternative cooling options and analysis of the impact of ac losses
- **Developing models** of the dynamic thermal, mechanical and electromagnetic behaviour of new superconductor devices
- Reporting on the **technical benefits and cost-performance analyses** of competing superconducting materials for an emerging application
- Designing solutions for **reducing the use of liquid helium** in cooling existing products

### Work with a world leader - technology and product milestones from Oxford Instruments

- World's first Active Shielded NMR and MRI magnets
- World's first 900 and 950 MHz NMR magnets
- 15 T split pair magnets for neutron and X-ray scattering
- Patented adiabatic multi-expansion technology for cryogen-free <sup>3</sup>He and dilution refrigerators
- 22.07 T at 4 K fully superconducting magnet using HTS insert



Oxford Instruments is the leading manufacturer of superconducting wires



click onto [www.oxford-instruments.com/consultancy](http://www.oxford-instruments.com/consultancy) for more information

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