Bruker Magnet Advantage

Ascend™ Magnet Series
Advanced technology in the Ascend magnet series enables superior performance with low drift and outstanding field stability in a reduced size and weight. The Ascend Race™ magnet series integrates Bruker’s proprietary active refrigeration for oxygen savings of up to 44%, providing years of convenient, care-free operation with scheduled refrigeration maintenance service from Bruker.

Bruker Console Advantage

AVANCE® Console and AVANCE System
For demanding applications, AVANCE consoles offer unparalleled speed, flexibility, and power. Compact AVANCE consoles fit under any standard table, saving valuable lab space. Combined with an actively shielded Ascend 300 magnet, this spectrometer brings high-end technology and performance to every lab.

Bruker Software Advantage

Supporting Complete Workflow
Bruker provides a complete software portfolio for both casual and expert users, supporting a wide array of applications and customer needs. Automated data acquisition, processing, and analysis provides high-quality, fast results for any user. Advanced users have the freedom to customize tools to develop NMR experiments to push the edge of scientific discovery.

Bruker Service Advantage

Reliable Trustworthy Service
Bruker offers training courses worldwide. Instructional engineers explain the basics of all instruments. Application experts guide you through setting up experiments and interpreting results in an easy and straightforward way. Bruker specialists are only a call or email away, ready to help your lab leverage the power of NMR easily and quickly.

How NMR Works

A step-by-step look inside NMR from sample to analysis

STEP 1: Samples are placed inside a powerful magnet

STEP 2: Atomic nuclei within the sample align with the magnetic field

STEP 3: Electronic coil surrounding the sample generates a radio-frequency pulse Field that moves the nuclei out of alignment with the magnetic field

STEP 4: Electronic coil then detects tiny differences in response as nuclei return to their alignment with magnetic field

STEP 5: Differences in response reflect influences of nearby nuclei and electrons, providing detailed information about molecular makeup, structure, and more

STEP 6: Bruker’s software interprets the response and generates a spectrum, which is then analyzed for chemical structure and composition.

Bruker’s Everyday NMR Portfolio

The best technology for your investment, low- to high-field

Get the features you need with a footprint and price that fit your lab. Only Bruker provides the world’s most easy-to-own and easy-to-operate suite of NMR systems. With Bruker’s accessible and user-focused technology, you can bring the confidence of NMR into your lab workflow easily and affordably, without sacrificing performance.

BRUKER.COM // info@bruker.com
Only NMR gives you definitive answers, on your terms.

Over the past half-century, scientists have used nuclear magnetic resonance (NMR) to directly identify, quantify, and characterize molecules, from small organic molecules to large protein complexes. Highly valued for its unparalleled view into intact molecules, NMR reveals rich details of molecular dynamics and structural architecture, inaccessible by other analytical methods. NMR is a non-destructive technique requiring minimal sample amounts, so you can go on to do additional analyses.

Today’s scientists often choose NMR as it offers a variety of methods for research and quality control in biology, chemistry, physics, medicine, and materials science. The range of applications is broad, including materials, environmental, and food science, medical and pharmaceutical research, and more. Whether for routine analyses or groundbreaking research, even small laboratories can now easily adopt NMR in-house for definitive answers to molecular questions, every day.

Why Bruker NMR?

For more than 50 years, Bruker has been dedicated to providing the best solutions for analytical tasks. With more than 90 locations around the globe, Bruker is strongly committed to meeting customers’ needs, and continuing to develop state-of-the-art, innovative technologies for today’s most challenging questions.

ACCESSIBLE TECHNOLOGY
- Customizable operation and convenient automation
- Compact and robust magnets with minimal system size, easy installation, and low cost of operation
- Expandable with optional software packages and scripting for a custom fit to your lab

HIGHEST QUALITY STANDARDS
- Constructed to deliver optimum performance and superior reliability
- Every instrument thoroughly tested before leaving production facilities
- Comprehensive customer service providing sales, applications, and engineering support for all Bruker products

FOCUSED ON EASE-OF-USE
- Minimal sample preparation or separation needed
- Easy and fast sample loading
- Automated sample changing options
- Ability to evaluate mixtures

STREAMLINED DATA ANALYSIS
- Ready-to-use analysis options that extract only essential data
- Industry-leading software with predefined experiments and interactive, automated processing and reporting tools

Everyday NMR Applications

SMALL MOLECULE STRUCTURE AND QUANTIFICATION
Determine the detailed arrangement of atoms and distances between atoms
Identify new compounds and trace impurities
Discover molecular structures of RNA, DNA, and even large complexes
Evaluate relationship between conformation and biological activity

MACROMOLECULAR STRUCTURE
See how proteins fold and bind to ligands
Discover molecular structures of RNA, DNA, and even large complexes
Evaluate relationship between conformation and biological activity

CHEMICAL AND MOLECULAR DYNAMICS
View how atoms move
Observe slight changes due to conformational change
Understand kinetics of chemical reactions and chemical ecosystems

MIXTURE ANALYSIS
Evaluate complex mixtures to explore metabolism
Test the makeup and origin of natural health products
Confirm quality and safety in foods and beverages

MATERIALS
Study polymers, composites, and polymeric systems
Explore material properties

IMAGING
See inside living organisms
Evaluate candidate therapeutics

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