Following to our long-term experiences, we offer complete Mössbauer spectroscopy instrumental support.

MS-96

THE 3RD
GENERATION

MÖSSBAUER
SPECTROMETER

REGIONAL CENTRE
OF ADVANCED TECHNOLOGIES
AND MATERIALS

Palacký University
Olomouc
Mössbauer spectroscopy (MS) is based on resonant emission and absorption of gamma rays.

MS is used to study various sample types (including both nano-sized objects and bulk materials) with specific nuclei.

MS gives both physical and chemical structure information.

MS is extremely precise, non-destructive analysis technique.

MS is capable to analyze samples with low-concentration of specific nuclei.

MS is limited on solid samples only (frozen liquids are also suitable).

Radioactive source is required for MS.
COMPLETE MÖSSBAUER SPECTROSCOPY SOLUTION

> Transmission Mössbauer Spectrometer typical experimental setups are described below.
> We are capable of experimental setup customization like:
  — Low-temperature measurements.
  — High-temperature measurements.
  — Conversion Electron/X-Ray measurements (in combination with transmission spectrometer a simultaneous conversion and transmission measurement is possible).
  — And more…

MS96 — THE 3RD GENERATION
HARDWARE BASED MÖSSBAUER SPECTROMETER

> This represents third-in-row design of Mössbauer spectrometer.
> Complete signal processing and spectra accumulation is provided by specialized hardware units.
> Designed as stand-alone device, with all necessary components integrated in one body (including personal computer), or as standard NIM module.
> Stand-alone version includes:
  — Intelligent Nuclear Detector Mark II.
  — Neodymium Velocity Transducer with built-in analog velocity feed-back PID controller.
  — Spectrometric bench.
  — Stand-Alone Main Unit.
> NIM version includes:
  — Intelligent Nuclear Detector Mark II.
  — Neodymium velocity transducer with built-in analog velocity feed-back PID controller.
  — Spectrometric bench.
  — NIM Main Unit.

MS96 — VI
VIRTUAL INSTRUMENT BASED MÖSSBAUER SPECTROMETER

> Complete signal processing is provided by software application on personal computer equipped with specialized digitizers and signal generators.
> Virtual Instrument version includes:
  — Intelligent Nuclear Detector Mark I.
  — Neodymium velocity transducer with built-in analog velocity feed-back PID controller.
  — Spectrometric bench.
  — National Instruments fast digitizer.
  — National Instruments generator.
  — Personal computer (on request).
INDIVIDUAL MÖSSBAUER SPECTROSCOPY COMPONENTS

MS96 – THE 3RD GENERATION STAND-ALONE MAIN UNIT

> Complete Mössbauer spectrometer main unit solution, including:
  > Spectrum registration unit, velocity generator unit, input signal processing unit, personal computer and power supply.

MS96 – THE 3RD GENERATION NIM MAIN UNIT

> Mössbauer spectrometer main unit in standard NIM housing (2 unit), including:
  > Spectrum registration unit, velocity generator unit, input signal processing unit.
> Controlled by personal computer (has to be connected externally via standard USB interface).

MS96 – THE 3RD GENERATION NIM UNIVERSAL SPECTRUM REGISTRATION UNIT

> Separated spectrum registration unit in standard NIM housing (1 unit).
> Spectrum registration unit is compatible with all known Mössbauer spectrometers.
> Controlled by personal computer (has to be connected externally via standard USB interface).
INTELLIGENT NUCLEAR DETECTOR MARK I. AND MARK II.

> Complete detection unit for transmission measurements equipped with signal processing units.
> Transmission measurement provides information about sample’s volume.
> Based on scintillation detector, with electronically controllable both amplification and high-voltage level (I2C or USB Interface).
> Internal function is controlled and all operating parameters are stored by a microcontroller.
> In a single small-sized body Mark I. includes:
  — Scintillation detector
  — High-Voltage power supply
  — Preamplifier and Amplifier
  — Internal temperature monitor.
> Mark II. additionally includes Single-Channel Analyzer unit and two signal outputs (analog and logic).

CONVERSION ELECTRON/X-RAY DETECTOR

> Conversion Electron/X-Ray measurement provides information about sample’s surface.
> Gas flow detector for conversion measurements is designed to combine it with transmission detector (thus two spectra can be obtained simultaneously).
> Multi-wire anode is used in this detector.

LOW-TEMPERATURE EQUIPMENT

> Liquid nitrogen bath cryostat with vacuum experimental cell usable for frozen liquid samples.
> Helium cryostat on request.

AND MORE...

> We offer complete Mössbauer spectroscopy instrumental and scientific support.
> Detailed information and all parameters at www.mossbauer-spectrometers.com
> Any additional information on request.

Www.mossbauer-spectrometers.com