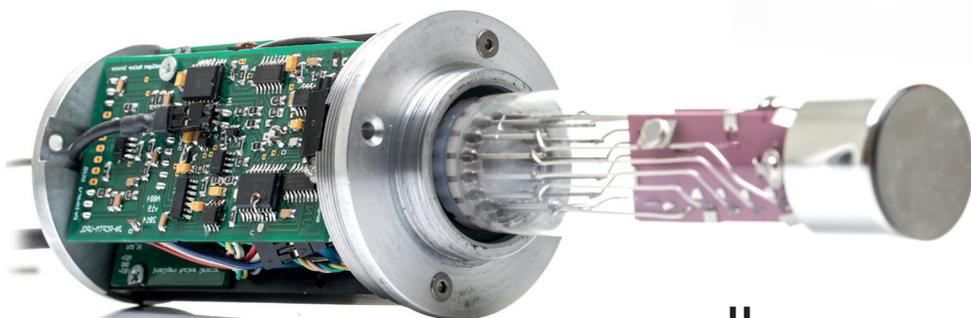


> MS ~ 96 < THE 3RD GENERATION



MÖSSBAUER ~ SPECTROMETER

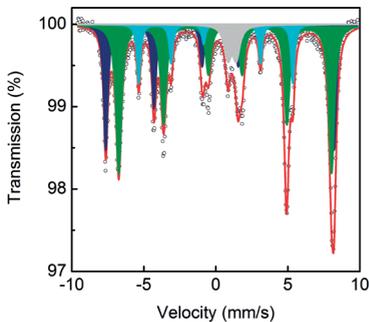
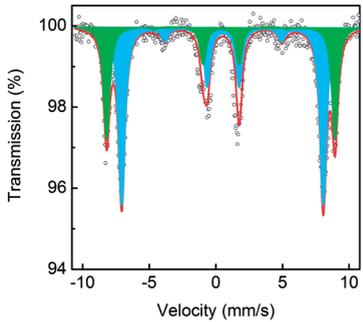
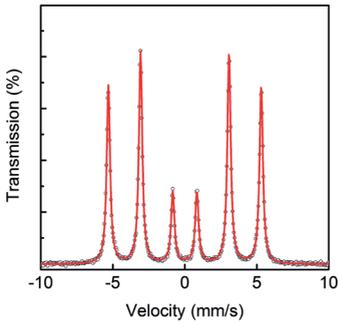
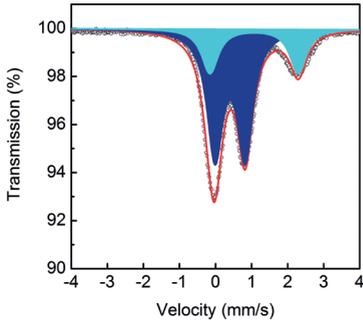
FOLLOWING TO OUR LONG-TERM EXPERIENCES,
WE OFFER COMPLETE MÖSSBAUER SPECTROSCOPY
INSTRUMENTAL SUPPORT



REGIONAL CENTRE
OF ADVANCED TECHNOLOGIES
AND MATERIALS



Palacký University
Olomouc

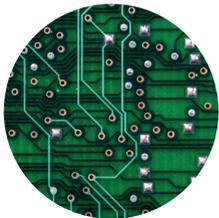


> MS ~ 96 THE 3RD GENERATION <

MÖSSBAUER ~ SPECTROMETER

- > 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.



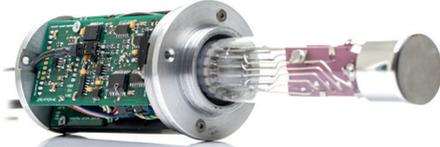
MS96 – THE 3RD GENERATION NIM MAIN UNIT

- > 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).



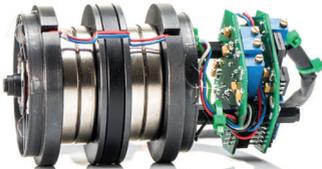
MS96 – THE 3RD GENERATION NIM UNIVERSAL SPECTRUM REGISTRATION UNIT

- > 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).



NEODYMIUM VELOCITY TRANSDUCER

- > Electrodynamic velocity transducer based on neodymium magnets.
- > Includes integrated velocity feedback PID controller.



ELECTRONICALLY CONTROLLABLE HIGH-VOLTAGE POWER SUPPLY AND SIGNAL AMPLIFIER

- > Standard NIM or individual housing, standard SHV connection.
- > Function is controlled using USB interface.



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.



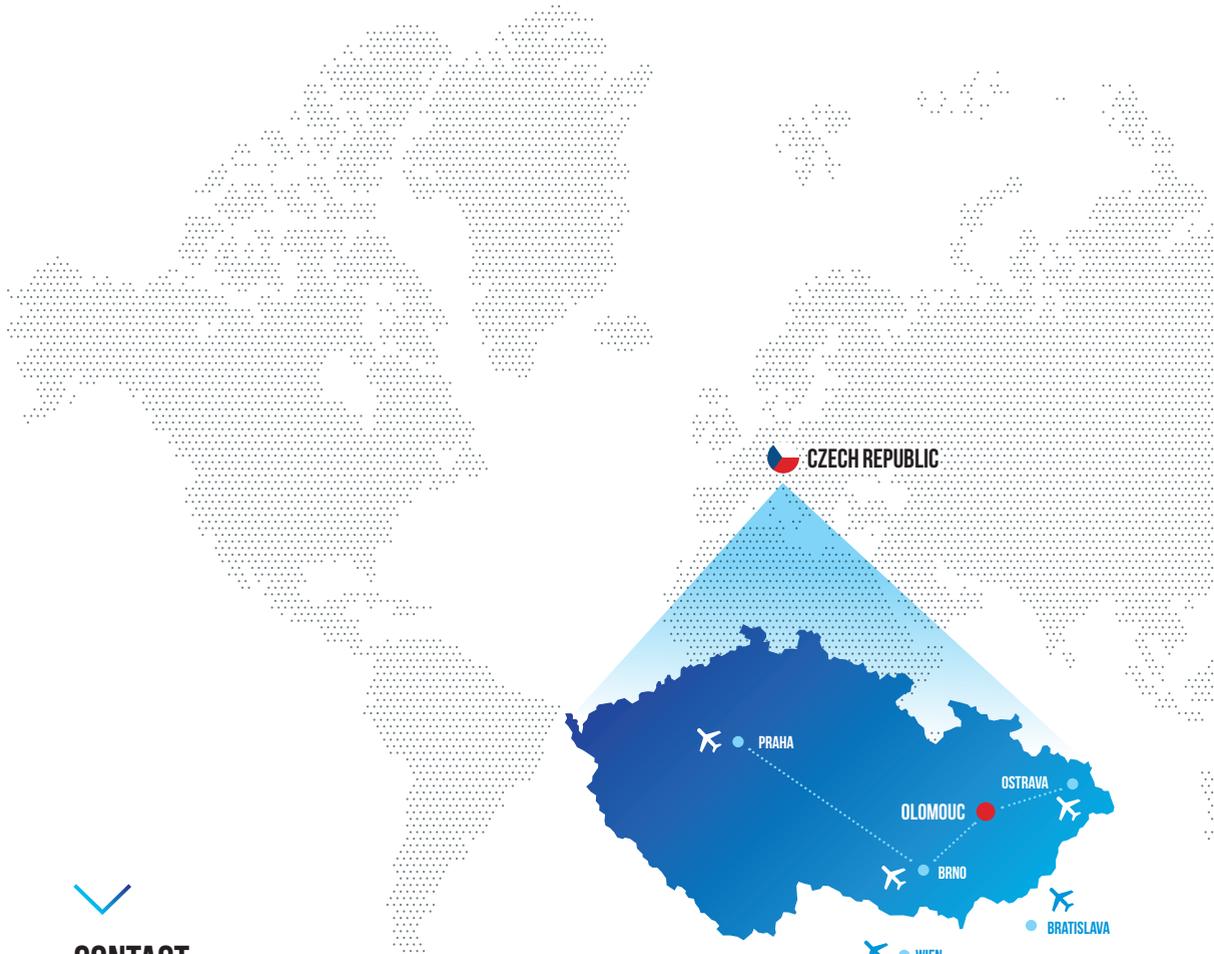
LOW-TEMPERATURE EQUIPMENT

- > Liquid nitrogen bath cryostat with vacuum experimental cell usable for frozen liquid samples.
- > Conversion Electron/X-Ray detector for low temperature measurements.
- > 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.



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