

Mendel
University
in Brno



Department of Chemistry and Biochemistry

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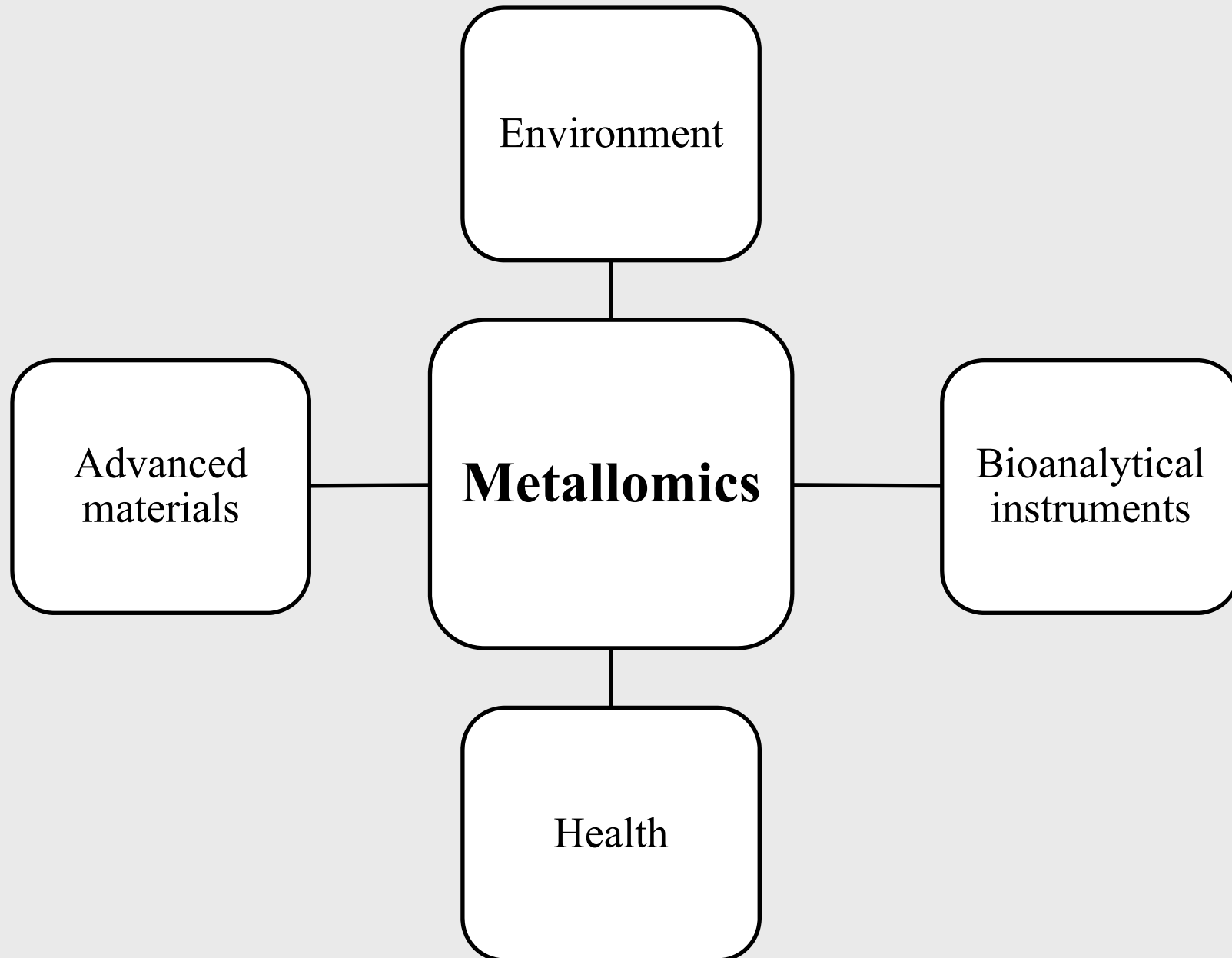
- ✓ 72 employees
- ✓ More than 350 m² of laboratories
- ✓ The instrumentation on the world level
- ✓ Part of the Central European Institute of Technology (CEITEC)



Department of Chemistry and Biochemistry - Equipment

- ✓ Livestock equipment and cell cultivation equipment
- ✓ *In vivo* imaging system
- ✓ Mass spectrometers
- ✓ Capillary electrophoresis with UV-Vis and laser-induced fluorescence detection
- ✓ Gel electrophoresis (1D and 2D systems)
- ✓ Fluorescence and confocal microscope
- ✓ High performance liquid chromatography with electrochemical, UV-Vis and mass spectrometry detection
- ✓ Automatic pipetting robot
- ✓ Stationary electrochemical analyzers and electrode array
- ✓ Devices for clinical biochemistry

The main scientific focus



Laboratories and their scientific directions

- cancer biology and nanomedicine
 - » mechanisms of cancer processes (eg. prostate cancer)
 - » using of nanomaterials in medicine (eg. protein cages)
- metals and metallomics
 - » element and speciation analysis
 - » food analysis by AAS and LC-CV-AFS
- biomarkers and flow techniques
 - » separation and detection of biomarkers
 - » mass spectrometry for proteomics and MALDI imaging

Laboratories and their scientific directions

- microbiology and enzymology
 - » identification of microorganisms
 - » production and characterization of enzymes
 - » immobilization of enzymes
- sensors and imaging
 - » electromigration separation techniques
 - » development of miniaturized instrumentation (lab on chip)
 - » fluorescence imaging
- electrochemistry
 - » detection of heavy metals in living organisms and the environment
 - » electrochemistry of nucleic acids

Laboratories and their scientific directions

- clinical biochemistry
 - » monitoring of stress markers in biological material
 - » development of modern methods for monitoring
- inorganic and bioanorganic syntheses
 - » synthesis of quantum dots, magnetic particles, nanomaterials, peptides, complexes
- plant metabolomics and epigenetics
 - » monitoring of secondary metabolites and non-coding RNA in plants