ZABC24
Fundamentals of Nanometrology and Best Practices

- Module 1: Introduction to microscopy techniques
  - Major components of electron microscopes and their functions
  - Scanning electron microscopes (SEM)
  - Transmission electron microscopes (TEM)
  - Scanning tunneling microscopes (STM)
- Module 2: Atomic Force Microscopy (AFM) and Related Scanning Probe Techniques
  - Major components and basic principles of AFM
  - AFM cantilevers and tips
  - Piezoelectric scanners
  - Modes of operation of AFM
  - Sample preparation
  - Artifacts in AFM images
  - Force spectroscopy with AFM
  - Other related scanning probe techniques
- Module 3: Mass Spectrometry
  - Atomic mass
  - Mass spectrometer
  - Ionization methods
  - Fragmentation
  - Mass analyzers
  - Interpretation of mass spectra
- Module 4: Ionic Current Blockade Measurements Using Nanopores
  - Introduction to the Coulter Counter Principle
  - Emergence of α-Hemolysin pores
  - Advent of Solid State Nanopores
  - Mathematical Description
  - Chemical Modification
  - Conducting Nanopore Experiments