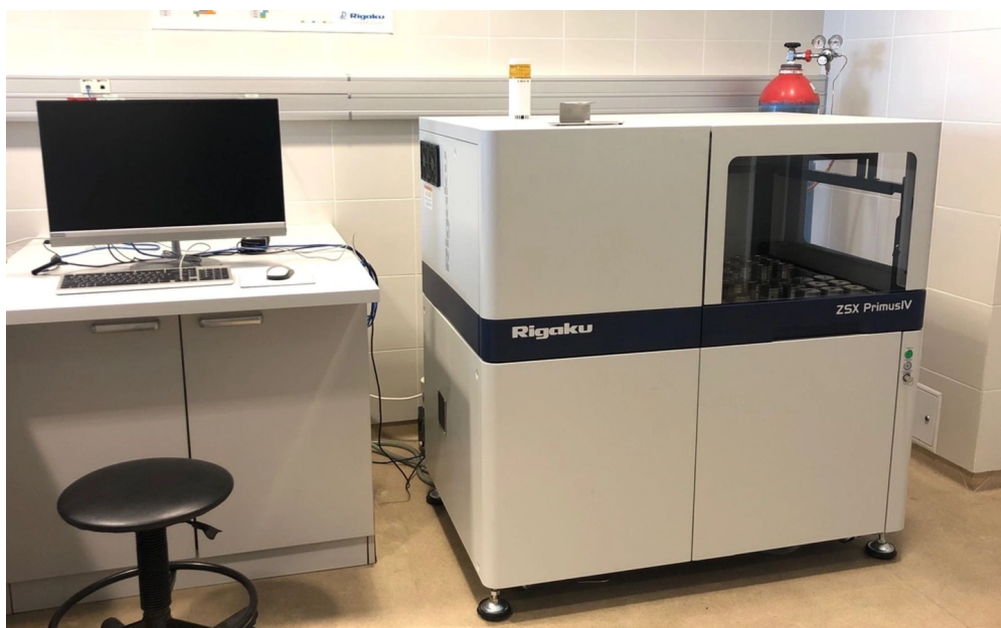


Wavelength dispersive X-ray fluorescence spectrometry (WD-XRF) Rigaku ZSX Primus IV



Technical description:

The ZSX Primus IV is a wavelength dispersion XRF spectrometer for qualitative, semi-quantitative and quantitative elemental analysis. It is able to detect elements from Be to U.

Specification:

Analyzed elements range: Be - U (Z = 4 - 92)

X-ray source parameters:

lamp Rh 4 kW
accelerating voltage: 60 kV
maximum electron beam current: 150 mA
automatic lamp heating function
an X-ray tube placed over the sample to be analyzed

Primary beam system:

automatic beam attenuation system
selectable primary beam filter (four filters available (Al-125, Al-25, Ni-40, Ni-400))
six-position collimator changer (35, 30, 20, 10, 1 oraz 0.5 mm)

Sample system:

automatic sample changer (48 holders)
the ability to rotate the sample during measurement
hermetic chamber enabling the measurement of powder and liquid samples in a helium atmosphere
the ability to measure at a fixed angle

Analyzer and detection system:

automatic analysis crystal changer
8 analysis crystals for measurements in B - U range: LiF(200) : ^{22}Ti - ^{92}U PET: ^{13}Al - ^{21}Sc Ge: ^{15}P - ^{21}Sc RX-25: ^9F - ^{12}Mg RX-35: ^8O - ^{12}Mg RX-40: ^7N - ^8O RX-61: ^5B - ^6C LiF(220): a crystal cooperating with a scintillation counter
proportional and scintillation detector
mapping system (spot measurement) with CCD camera

Trade name: WD-XRF Rigaku ZSX Primus IV

More details: </equipment/spektrometr-fluorescencji-rentgenowskiej-z-dyspers/>

Access type: External

Type of accreditation / certificate: Not applicable

Contact person: Mech Krzysztof

Contact person url: <https://skos.agh.edu.pl/osoba/krzysztof-mech-7959.html>

Responsible body: Academic Centre for Materials and Nanotechnology

Group / laboratory / team: Department of Semiconductors Photophysics and Electrochemistry

Last update date: March 10, 2025, 1:32 p.m.

Year of commissioning: 2020

IDUB research areas:

(PRA 5) Materials, technologies, and processes inspired by nature: biotechnology, bioinspirations in engineering and materials science, biosensors, bioenergetics, biocatalysis, biocomputers, and biocomputation

(PRA 7) Design, production, and testing of modern materials and the technologies of the future based on a multidisciplinary approach combining materials engineering with chemistry, physics, mathematics, and medicine

Research capabilities:

qualitative and quantitative analysis of the elemental composition

standardless analysis of the chemical composition

macroscopic and spot analysis of the chemical composition

possibility of fixed angle measurement

analysis of the composition of solid and powder samples

Conditions for providing infrastructure:

Equipment is available in accordance with the Regulations for the Use of ACMiN's Research Infrastructure. (https://acmin.agh.edu.pl/home/acmin/5_Wspolpraca/Aparatura/Zasady_i_koszty_korzystania_z_infrastruktury_badawczej_ACMiN.pdf)