# AGH Research Offer

## Inductively Coupled Plasma Atomic Emission Spectrometer (ICP-OES)


**Technical description:**

The PlasmaQuant 9100 Elite (Analytik Jena) is a high-resolution ICP-OES emission spectrometer used in our laboratory for rapid, multi-element analysis of samples of varying complexity. The instrument utilizes High-Resolution Echelle optics with a wavelength range of 160–900 nm and a resolution of 0.002 nm, enabling efficient resolution of dense spectral lines and reducing spectral interference. Low-light-loss optics ensure high sensitivity, stability, and the ability to determine both trace and high-concentration elements. The integrated Dual View PLUS system enables simultaneous plasma observation in axial and radial modes, allowing for the combination of ultratrace analysis and percent concentration determinations within a single method. The vertical ICP torch position in the V Shuttle Torch system increases resistance to complex matrices and improves plasma stability, while the water-cooled, argon-purged cone ensures low background levels and high sensitivity, especially in axial observation. The Peltier-cooled CCD detector ensures low noise and wide signal dynamics, while automatic integration time adjustment enables simultaneous determination of trace and high-concentration elements. The short aerosol path ensures rapid rinsing and highly reproducible sample delivery. Thanks to the combination of high-resolution optics, an advanced plasma observation system, and a stable vertical ICP torch, the PlasmaQuant 9100 Elite enables precise, sensitive, and repeatable determinations even in challenging matrices, while ensuring high throughput and reliability for everyday analysis.

**Trade name:** ICP-OES Plasma Quant 9100 spectrometer with accessories

**More details:** /equipment/spektrometr-emisji-atomowej-ze-wzbudzeniem-w-plazm/

**Access type:** External

**Type of accreditation / certificate:** Not applicable

**Contact person:** Piech Robert

**Contact person url:** https://skos.agh.edu.pl/osoba/robert-piech-5957.html

**Responsible body:** Department of Analytical Chemistry and Biochemistry

**Group / laboratory / team:** Team of the Department of Analytical Chemistry / A3, 406 a

**Last update date:** Nov. 24, 2025, 2:45 p.m.

**Year of commissioning:** 2025

**IDUB research areas:**

(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:**

The spectrometer enables quick and extremely precise determination of elements in materials, raw materials and industrial samples.

**Measurement capabilities:**

Thanks to its high optical resolution, resistance to difficult matrices and wide detection range, it provides results that cannot be obtained with standard systems.

**Conditions for providing infrastructure:**

Under contracts and orders after prior approval by the Laboratory Manager.