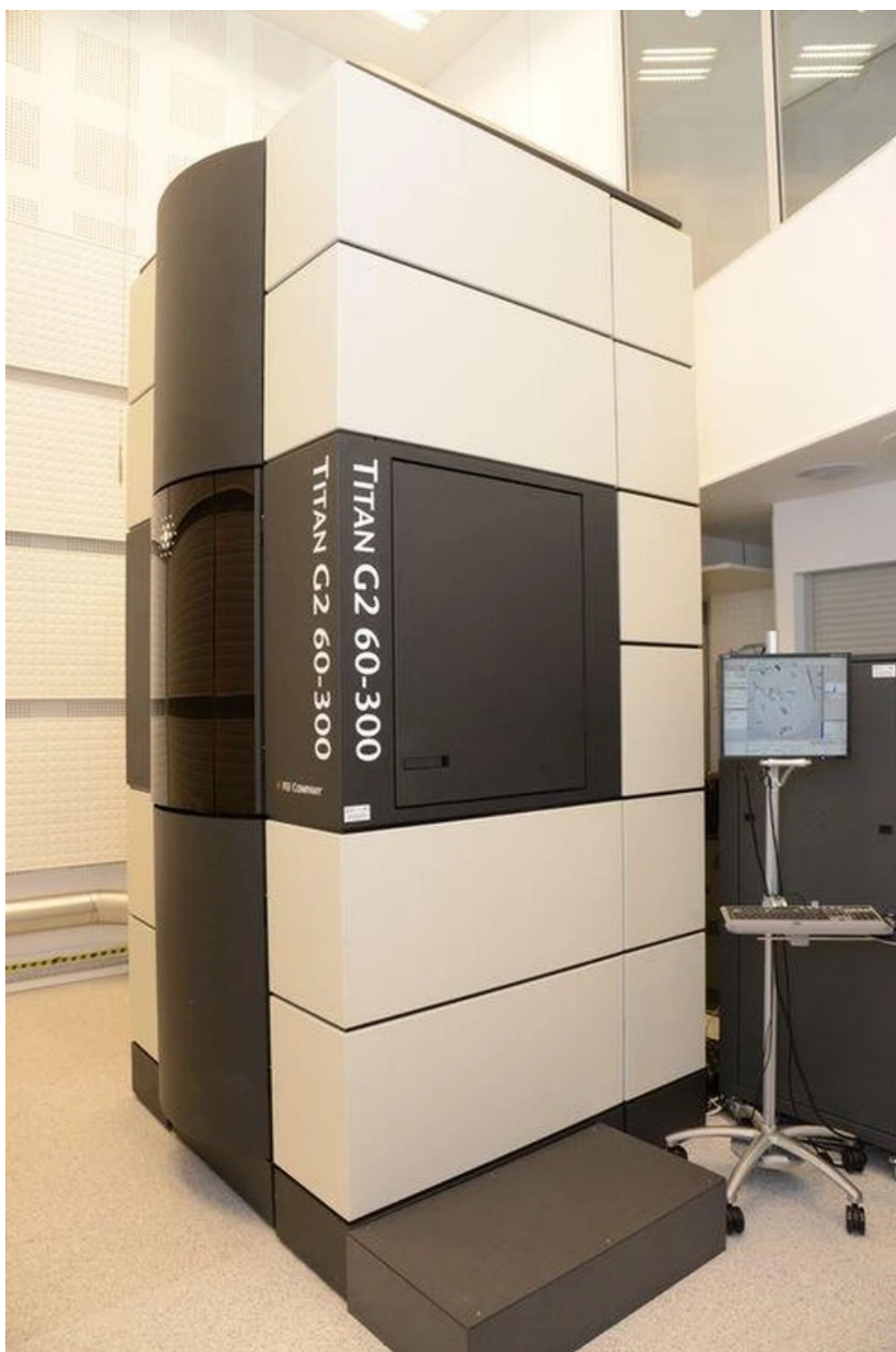


## High-resolution transmission electron microscope



**Technical description:**

High-resolution analytical transmission electron microscope (resolution equal to 70 pm) with unique instrumentation. It is equipped with an X-FEG electron gun, a monochromator, a corrector for spherical aberration of the condenser system and the latest energy-dispersive X-ray spectrometer (X-FEG). It is characterized by the most extensive range of accelerating voltages - from 60 to 300 kV. Its unique scientific and research capabilities are determined by, among others: the latest X-FEG electron gun with high brightness and monochromator, a new corrector for spherical aberration of the condenser system, DCOR (dodecapole probe corrector), the latest energy dispersive X-ray spectrometer Super-X (4 SDD detectors ) enabling the study of the chemical composition of phases with an atomic resolution (0.7Å) based on the ChemiSTEM technology, a new GIF Quantum 963 electron energy filter, a holder with a bi-prism, instrumentation and software for electron holography, a two-tilt tomographic holder and software for electron tomography. Despite the passage of almost ten years since the installation of the analytical transmission electron microscope (S)TEM Titan Cubed G2 60-300, thanks to continuous software updates, maintenance continuity from the beginning of the operation, the level of technical advancement, and therefore research capabilities, are still at the level of the best currently produced advanced transmission electron microscopes.

**Trade name:** Titan Cubed 2 60-300 (FEI)

**More details:** </equipment/wysokorozdzielczy-transmisyjny-mikroskop-elektrono/>

**Access type:** External

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

**Contact person:** Kruk Adam

**Contact person url:** <https://skos.agh.edu.pl/osoba/adam-kruk-1679.html>

**Responsible body:** Faculty of Metals Engineering and Industrial Computer Science

**Group / laboratory / team:** Department of Physical Metallurgy and Powder Metallurgy. Centre of Electron Microscopy for Materials Science

**Last update date:** Aug. 29, 2023, 11:39 a.m.

**Year of commissioning:** 2012

**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:**

TEM, BF-TEM, STEM, HAADF-STEM, STEM-EDX, EELS, Electron Tomography, Electron Holography TEM, EF-TEM

**Measurement capabilities:**

Chemical analysis, high resolution, nanoscale measurements

**Conditions for providing infrastructure:**

On terms agreed with the Head of the Laboratory - dr hab. Eng. Adam Kruk, prof. AGH