

Ion Milling



Technical description:

Penning-type Ar ion gun, operating at a voltage in the range from 0kV to 6kV
Ability to observe the sample during the polishing and cutting process using a stereoscope
Sample polishing range: diameter 50 mm, height 25 mm
Flat milling mode: -maximum sample size in polishing mode 50mm - range of motion (diameter of the polished area) - X axis: 0-5 mm -beam incidence angle 0°-90° - sample rotation angle $\pm 90^\circ$ -possibility of sample rotation with selection of rotational speed -possibility of sample oscillation with choice of oscillation angle
Cross-section milling mode: - maximum sample size 20mmx20mmx7mm - range of motion - X axis ± 7 mm - range of motion - Y axis ± 3 mm - angle of rotation ± 3 mm - rotation speed of the sample 1 rpm, 25 rpm - cutting speed/efficiency: 500 $\mu\text{m/h}$ (for silicon)

Trade name: IM4000 Plus

More details: </equipment/zestaw-do-jonowego-polerowania-i-trawienia-materia/>

Access type: External

Type of accreditation / certificate: Not applicable

Contact person: Kopyściański Mateusz

Contact person url: <https://skos.agh.edu.pl/osoba/mateusz-kopyscianski-7513.html>

Responsible body: Faculty of Metals Engineering and Industrial Computer Science

Group / laboratory / team: Metallographic laboratory KIPiAM <https://kipiam.agh.edu.pl/>

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Year of commissioning: 2020

IDUB research areas:

(PRA 1) Sustainable energy technologies, renewable sources of energy, energy storage, and resource management. Design, production, application, synergy, and process integration

(PRA 2) New technologies for the circular economy: merging business models with ecoinnovations to improve productivity and minimise waste, as well as to create knowledge and use it

(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:

final polishing, for EBSD, with low-angle shearing (FlatMilling) or for contrasting by high-angle thinning in a few minutes High-quality distortion-free cross-sections for analysis of subsurface structures

Conditions for providing infrastructure:

Under contracts and commissioned research tasks/authorization of the head of the IPiAM Department