

The Danish National Cryo-EM Facility

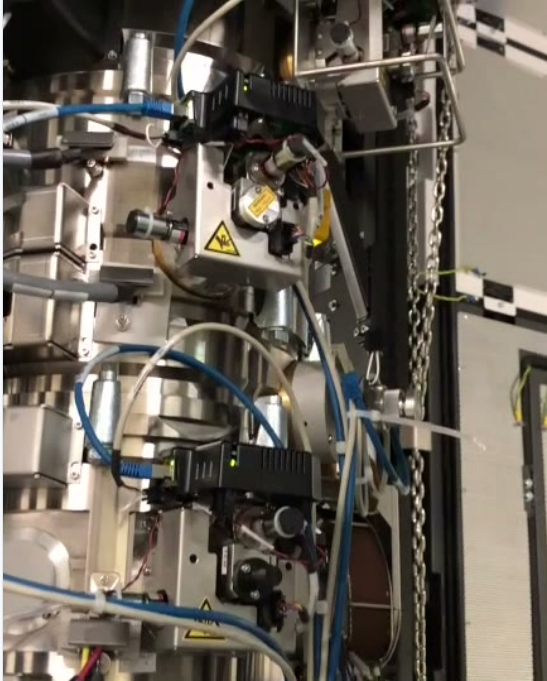
Aarhus Node. Small things can have a great impact

Presenter Name Event name 12 November 2026

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Instruments

Six microscopes for high-resolution cryo-EM, tomography and sample preparation



What the facility offers

Single-particle cryo-EM
High-resolution data collection on two Titan Krios 300 kV microscopes

Cryo-electron tomography
Lamella milling on the Aquilos 2 Cryo FIB

Screening and training
Tecnai Spirit 120 kV TEM for grid screening and introductory TEM training

Access through the portal
Apply for microscope time through the EMBION portal



Two Titan Krios microscopes

Titan Krios G3i

300 keV

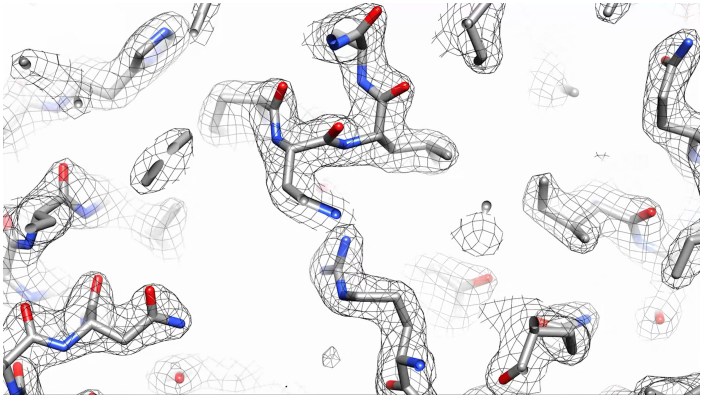
- 967 Bioquantum energy filter
- K3 detector
- Ceta-D detector
- Single tilt stage
- EPU/Tomo5/EPU-D automated data collection software

Titan Krios

300 kV TEM

- 967 Bioquantum special energy filter with full spectroscopy
- K2 Summit detector
- Volta Phase Plate
- Cs corrector
- Double tilt stage

From grid to map



Side chains resolved in a cryo-EM density map, with the fitted atomic model.

Figure 1. Density map rendered at the facility. Replace with your own figure and source.



Sample preparation

Vitrifying grids on the Leica EM GP2

Small things can have a great impact

Images processed	Applications	Users	Publications
4,160,000	626	149	51

Figures are approximate



Cryogenic electron microscopy allows for collection of high resolution data from a range of samples including protein molecules, macromolecular complexes or cells.

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Instruments at the facility

Instrument	Type	Voltage	Key detectors and features
Titan Krios G3i	TEM	300 kV	K3, Ceta-D, 967 Bioquantum energy filter
Titan Krios	TEM	300 kV	K2 Summit, Volta Phase Plate, Cs corrector
Tecnai Spirit	TEM	120 kV	TemCam-F416 CMOS, Veleta CCD, cryo-box
Aquilos 2	Cryo FIB	—	EasyLift Cryo, iFLM, integrated sputter coater and GIS
Versa 3D	FIB-SEM	—	Cryo-stage, Auto Slice and View, BSED
Nova NanoSEM	SEM	—	EDAX EDS, in-lens SE, Helix low-vacuum detector

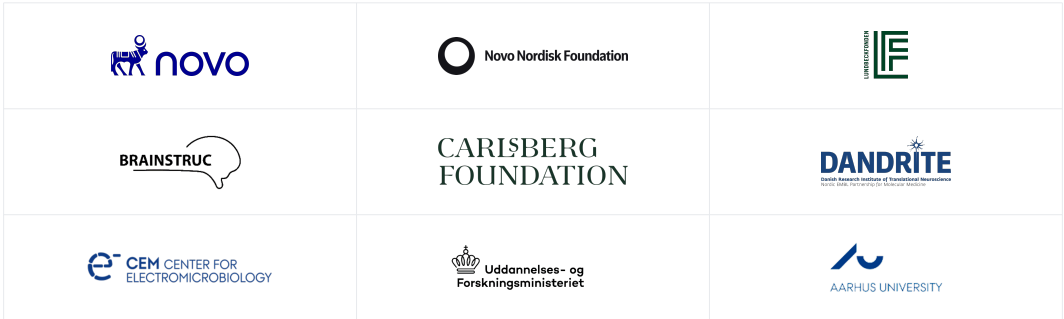
Electron wavelength at 300 kV

$$\lambda = \frac{h}{\sqrt{2m_0 eU\left(1 + \frac{eU}{2m_0 c^2}\right)}}$$

With $U = 300$ kV: $\lambda \approx 1.97$ **pm** about 1/80 of a C–C bond (154 pm)

Acknowledgements

We acknowledge the EMBION Cryo-EM Facility at iNANO, Aarhus University, for time under application ID XXXX.



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Thank you

Apply for microscope time through the EMBION portal.

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