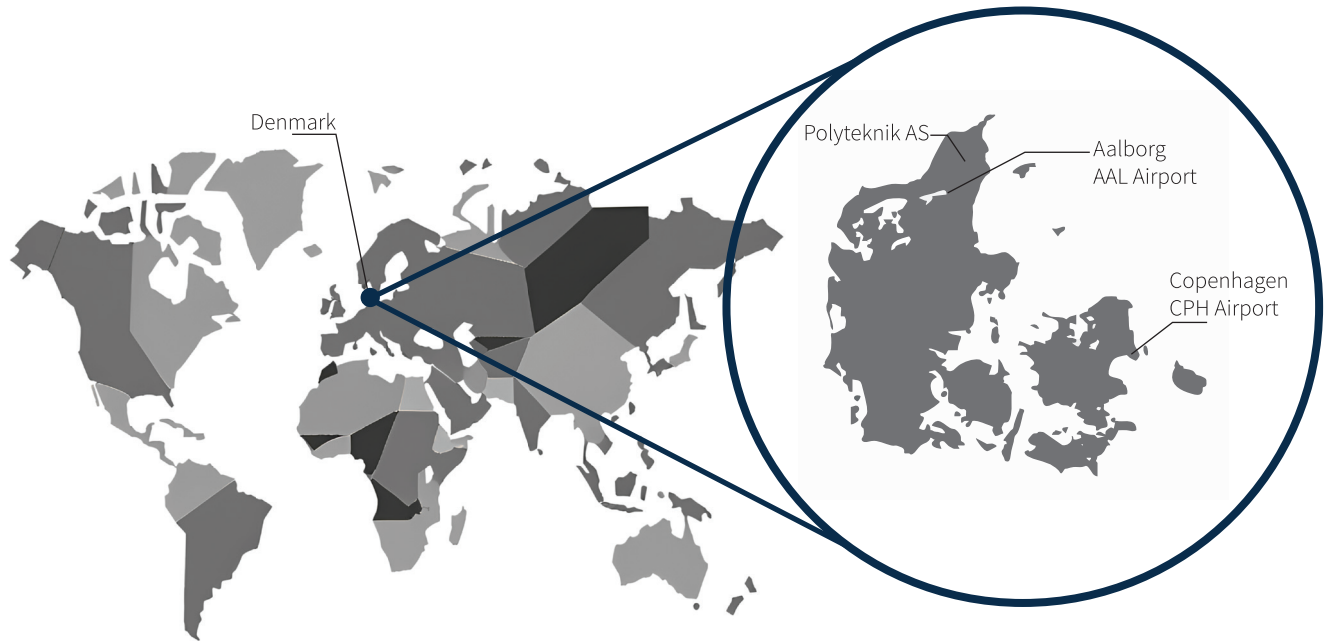




FLEXTURA® PVD PLATFORM
WHEN THIN FILM MATTERS

POLYTEKNIK 

ABOUT POLYTEKNIK AS WHEN THIN FILM MATTERS



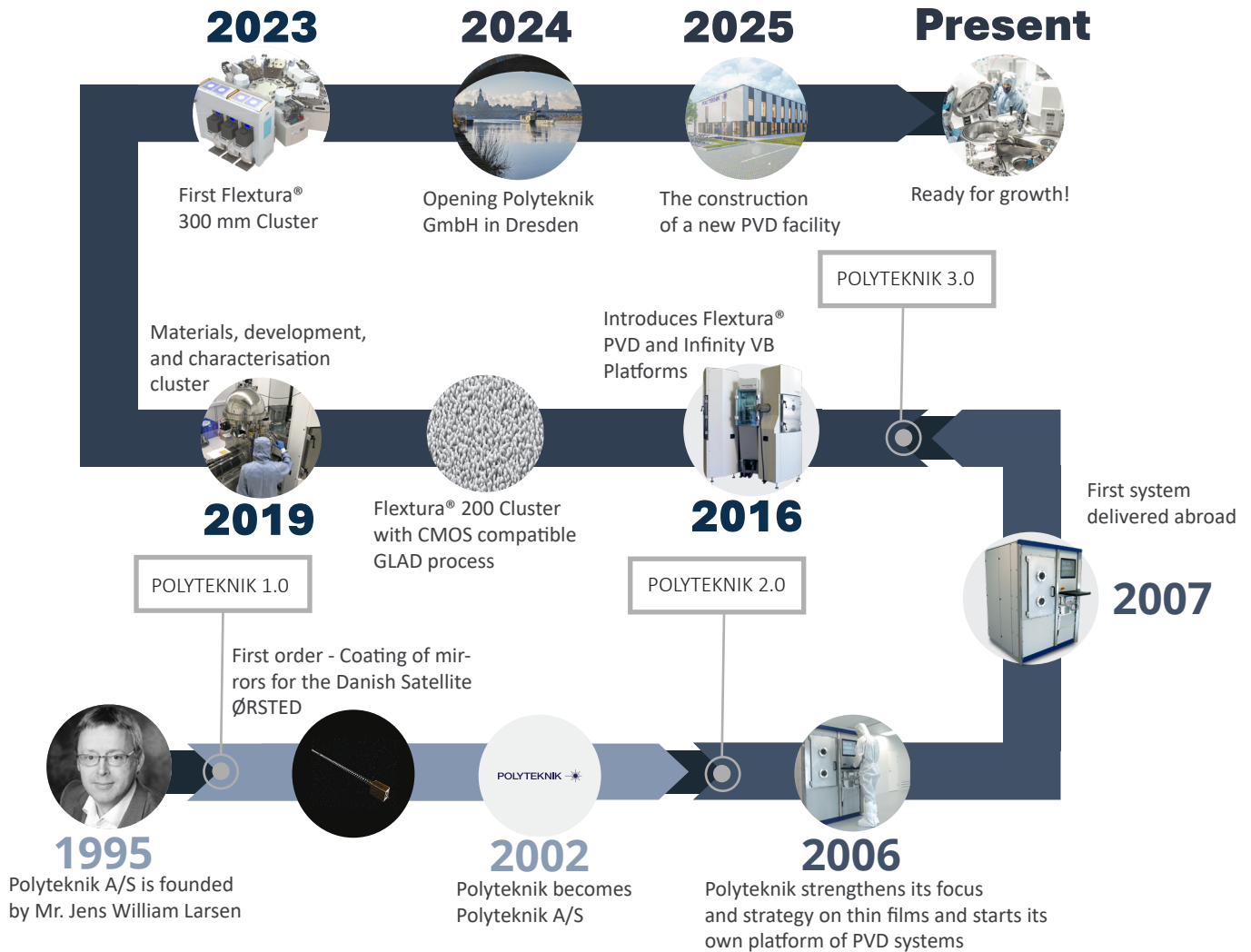
LOCAL COMPANY WORKING GLOBALLY

At Polyteknik AS, we don't just build PVD systems — we create opportunities. Headquartered in Denmark, with a sales office in Dresden, Germany, we deliver next-generation thin-film solutions through our Flextura® Platform; modular, flexible, and built to grow with your R&D and production

needs. Polyteknik AS is a family owned business since 1995 with more than 30 years of experience in vacuum technology. From our extensive know-how, we have been able to make innovative solutions based on a strong presence in the European semiconductor community.

MORE THAN 30 YEARS OF EXPERIENCE

HISTORY OF POLYTEKNIK



FLEXTURA® PVD PLATFORM

MOST FLEXIBLE PVD PLATFORM

PLATFORM HIGHLIGHTS

- High temperature deposition (1000°C)
- Magnetron sputter epitaxy
- Highly ionised sputtering
- Gradient sputtering
- Glancing angle deposition

FLEXIBILITY AND RELIABILITY

Combining different technologies from sputtering, evaporation, etch to annealing with opportunities for new dedicated process modules. Configured to handle 100mm, 150mm, 200mm, or 300mm substrates.

SCALABLE CAPACITY

From R&D to high volume manufacturing; the Flextura® PVD platform is fully upgradable from single module to full cluster with reliable 24/7 production

CMOS COMPATIBILITY

Built for CMOS-compatible processing, delivering the cleanliness and precision demanded by advanced semiconductor fabrication

SMART AUTOMATION

Fully automated process control with advanced data logging- SECS/GEM, MES integration optional, E84

MARKET AREAS

- Photonics & PIC
- Quantum
- MEMS & sensors
- Wireless devices
- Power electronics



CHOOSE SUBSTRATE LOADING

MODULARITY OF THE FLEXTURA®

BATCH SYSTEM



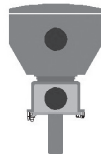
Start from a highly flexible standalone system

SINGLE SUBSTRATE LOAD LOCK



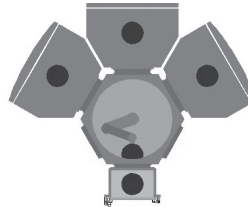
Add additional processes and analytics

CASSETTE LOAD LOCK



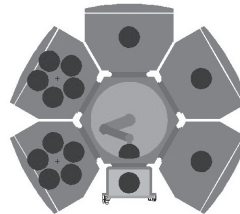
Fully automate your deposition process with cassette handling

FULLY AUTOMATED CLUSTER SYSTEM



Save valuable clean room space

ADD PROCESS MODULES WITH INCREASING CAPACITY



Without compromising flexibility!

FLEXTURA® PROCESS MODULES

EXPLORE THE FLEXIBILITY

DISCOVER A HIGHLY FLEXIBLE AND FULLY AUTOMATED PLATFORM DESIGNED FOR ADVANCED FILM PROCESSING.



The Flextura® PVD platform bridges research and production environments — supporting substrates from smaller R&D wafers to full 300 mm manufacturing standards, as well as alternative materials.

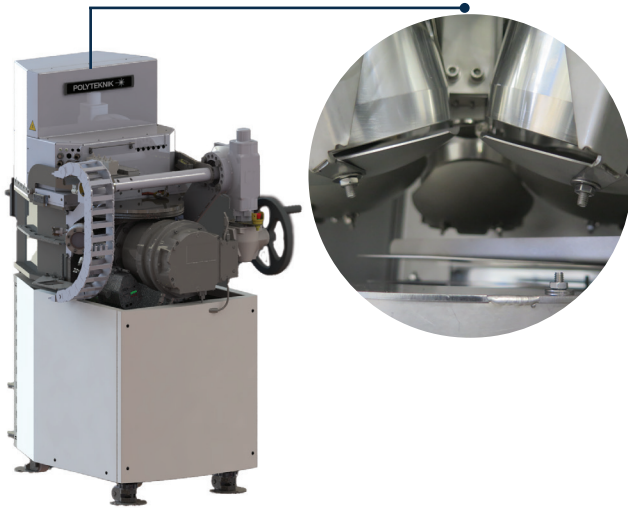
All process modules can be integrated into the Flextura® Cluster platform or delivered as standalone tools, with single-substrate, cassette, or batch load-lock configurations.



Designed for versatility, our systems are installed across both research and production environments, supporting everything from material exploration to high-volume manufacturing.

Contact our experienced sales team to configure your next PVD system, or **explore the process modules** on the following pages to discover the possibilities within the Flextura® platform.

CONFOCAL SPUTTERING



MULTIPLE MAGNETRON SETUP

Enabling high flexibility for **material combinations** or **multilayer** sputtering

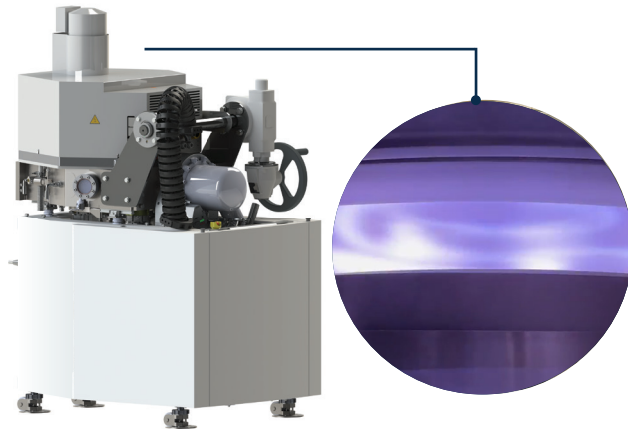
PRECISE COMPOSITION CONTROL

Enable deposition of alloys, doped materials, complex compounds or examine new exotic materials by true co-sputtering utilising DC, pulsed DC, RF, bipolar, and HiPIMS

MULTILAYER SPUTTERING

Create layer stacks or super lattices in the same module with up to 5 materials

CSM SPUTTERING



CIRCULAR SCANNING MAGNETRON

(CSM) technology for static wafer coating for **high volume manufacturing**

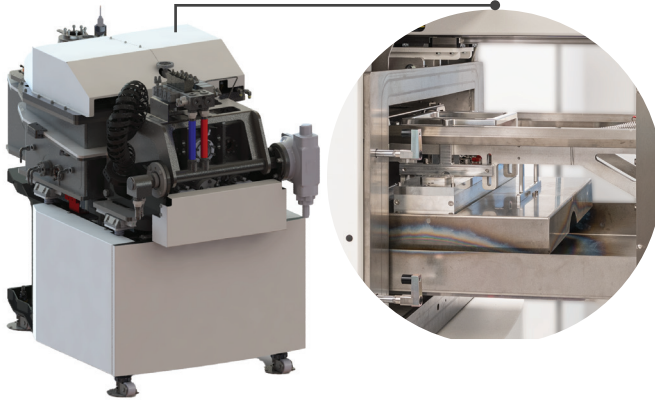
HIGH TARGET UTILISATION

Rotating magnets behind the target ensures high target utilisation – fewer target replacements for reduced cost-of-ownership

EXCEPTIONAL UNIFORMITY

Highly uniform thin film deposition with tuning abilities by adjusting RPM of magnet pack as well as magnet configuration

LINEAR SPUTTERING

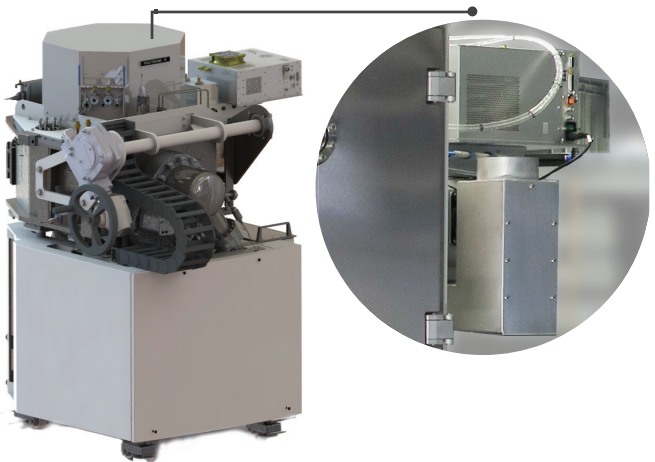


ADVANCED LINEAR DEPOSITION
Substrates shuttling underneath single or dual linear magnetrons- ideal for several materials used in **quantum** or **neuromorphic** computing

EXCELLENT UNIFORMITY
Linear magnetrons enable a well-controlled plasma distribution across the substrate, for excellent sheet resistance and thickness uniformity.

PLANAR OR ROTATABLE SETUP
Compatible with both planar or rotatable magnetrons, specifically interesting for materials such as NbTiN, Al₂O₃, or complex metal oxides

REMOTE PLASMA SPUTTERING

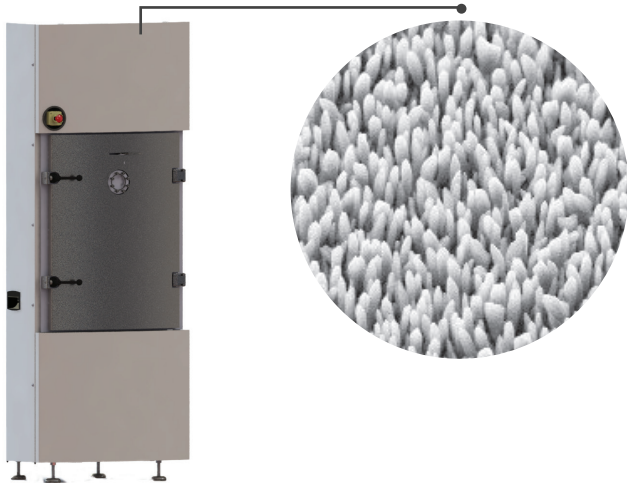


INNOVATIVE TECHNOLOGY
Remotely generated plasma directed toward the target by use of electromagnets - decoupling plasma energy and density for **controlled deposition**

TUNEABILITY OF FILM PROPERTIES
Independent control of plasma energy and density, enabling additional tuneability of film properties like stress and density

THICK MAGNETIC LAYERS
Remotely generated plasma removes the need for magnets, essentially removing the thickness limitation of targets – especially of interest for thick magnetic layers

GLAD EVAPORATION



GLANCING ANGLE DEPOSITION

Rotate and tilt your substrate during deposition, to promote columnar growth of your chosen material, **altering properties** of your thin film by changing geometry & surface area

CHANGING OPTICAL PROPERTIES

Avoid using expensive or challenging materials for optical sensor/absorber applications, by altering thin film properties of common materials

CMOS COMPATIBLE INDUSTRIAL PLATFORM

Scalable from small throughput R&D to fully automated 200mm CMOS compatible production system

EVAPORATION



E-BEAM OR THERMAL EVAPORATION

Compatible with both single wafer and batch configurations with fully automatic handling of substrates

DIRECTIONAL DEPOSITION

The directionality of the evaporation process is a key benefit for metallization and lift-off processes

FLEXIBLE CONFIGURATION

Supports multiple sources (thermal and/or e-beam) for sequential or co-deposition. Can be configured with ion gun for ion-beam assisted deposition (IBAD) or pre-cleaning capabilities

FLEXTURA® QUANTUM

FIELD PROVEN TECHNOLOGY

FLEXTURA® 200 QUANTUM CLUSTER

The Flextura® Cluster design provides exceptionally low base pressure and moisture levels through automated substrate transfer and isolation between modules. These controlled conditions minimize surface contamination and oxidation — essential for maintaining superconducting and quantum-layer integrity.

Integrated process control tools, such as plasma emission monitoring and residual gas analysis (RGA), continuously track plasma stability and background composition, ensuring consistent vacuum quality and reproducible thin-film deposition.

PRE-CLEAN PROCESS

In-situ pre-clean ensures atomically clean surfaces before deposition, preventing oxidation and securing the purity essential for reliable quantum device performance.

LINEAR SPUTTERING

Linear magnetron sputtering of NbTiN produces highly uniform, reproducible superconducting films optimized for qubit and resonator fabrication — delivering consistent critical temperature (T_c) across full wafers.



EFFUSION CELL EVAPORATION

Enable precise and low-energy deposition of ultra-pure aluminum films — ideal for Josephson junctions and other superconducting devices. Stable flux control ensures uniform, smooth, and reproducible films across the wafer.

CONFOCAL SPUTTERING

Our high temperature (1000°C) multi-material sputtering module enables deposition of α -Ta and related superconductors (Nb, Al, Hf or similar) under precise conditions, ensuring superior interface quality and qubit coherence.

MODULAR SOFTWARE PLATFORM

UNIQUE PROCESS CONTROL

SOFTWARE HIGHLIGHTS

Flexibility and automation for every Flextura® system through our in-house developed software.

With intuitive recipe-based processing, multi-user access, and advanced data logging, our software ensures reliable, repeatable, and intelligent thin-film deposition — from R&D to high-volume production.



SOFTWARE BY POLYTEKNIK AS



Recipe based processing, save load and edit recipes- layer, wafer, and cassette level



Modular software tailored to customer system



Access right management with multiple user levels, configurable to customer userbase



Remote system monitoring or operation



Advanced datalogging of all parameters- plot data easily with built in data viewer



Fully compatible with customer MES, SECS/GEM, E84, and GEM300 factory automation systems



WHO ARE WE

Polyteknik AS is a PVD equipment manufacturer with an innovative and best service approach. With more than 30 years in business, a global reference list, and an excellent platform of technology, Polyteknik AS has turned to be an appreciated partner in the thin film industry.



WHAT DO WE DO

The portfolio of platform systems ranges from small scale R&D to high volume or large area deposition systems. Polyteknik AS covers several deposition processes with our Flextura 200 and 300 Cluster, Tornado, and Infinity platforms. At Polyteknik AS you will meet a dedicated team interested in a strong co-operation towards the best solution.

WEB polyteknik.com
EMAIL sales@polyteknik.dk
PHONE +45 96892800

Polyteknik AS
Moellegade 21
DK9750 Oestervraa
Denmark