Powering the world through nanoscale innovation

Smoltek Nanotech Holding AB

Annual General Meeting, 2026-05-12

www.smoltek.com

FROM LAB TO FAB – INVESTMENT HIGHLIGHTS

Timing is right for Industrialization
– strong macro drivers in main markets

Innovative deep-tech company
– with patented and proven effective nanotechnology

Experienced & competent team
– deep know-how and experience of industrialization

Major potential upside in two business areas
– with unique technology solutions

Opportunities to expand the technology platform
– to more application areas and markets

TWO SOLUTIONS FOR A BETTER TOMORROW

Smoltek addresses two global macro trends – the ever-increasing computing power of processors and the enormous demand for more energy that follows in its wake

Smoltek Semi offers energy- and cost-efficient capacitors with high electrical performance for power supply for AI and HPC processors and for Radio Frequency and Opto-electronics

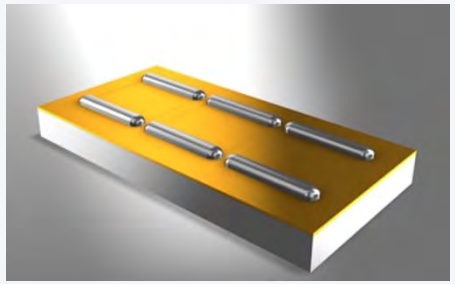
- **$500 billion to $1 trillion in annual investments in data centers/AI with increasing energy needs, capacitors with specific properties**
- **Miniaturization require light & ultra-thin components**

Smoltek Hydrogen offers PGM material savings and cost-effective electrodes with high catalytic performance for PEM electrolyzer and fuel cells

- **Energy resilience require EUR 900bn to be invested in H2 in Germany alone the next 25 years**
  - Data centers are hungry for uninterrupted GW energy solutions
  - EU and major defense players invest in resilient hydrogen systems

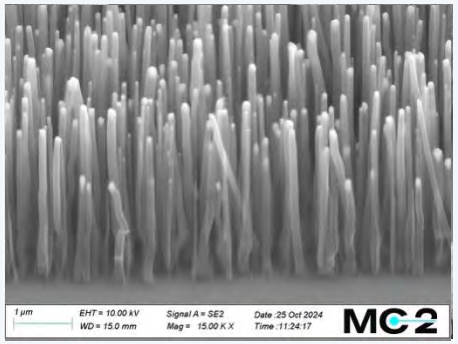
CARBON NANOFIBER TECHNOLOGY PLATFORM

CNF-MIM capacitors



Integrated circuits (chips)

Core technology (SmolGROW™)



- Growth of carbon nanofibers on almost **any substrate**
- 3D Nanostructures provides an **X factor larger** conductive surface area for electrical and chemical processes

PTE electrodes

PEM electrolyzers

PEM fuel cells

SUSTAINABLE COMPETITIVE ADVANTAGE

Smoltek's "moat" is a combination of several dimensions:

- Strong and growing global IP Portfolio with 97 granted patents in 21 families
- Industrial partnerships with key players – creating eco-system
- Critical manufacturing know-how
- Innovative team with state-of the-art lab resources
- Continuous IP filing from product innovation

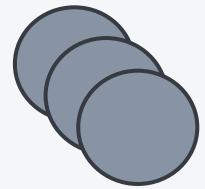
Smoltek uses a global patent strategy to protect the technology platform in all important markets. This includes core patents as well as patent protection at application level.

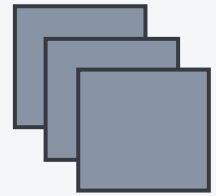
CORE PATENT

SmolGROW™

SmolGROW™ is the core process technology, It's the foundation of how to grow conductive carbon nanofibers into structures in various ways – as single, exactly located fibers or in "forests".

CNF-MIM* TECHNOLOGY



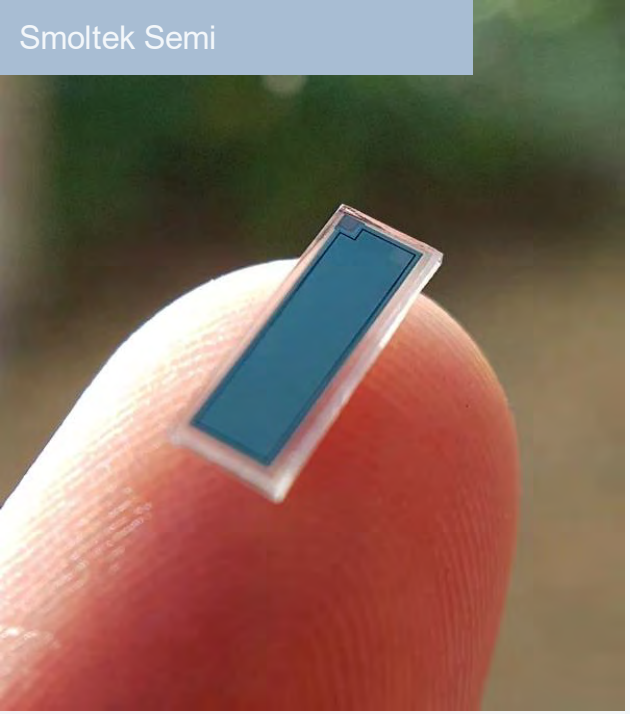


CNF-ASC** TECHNOLOGY

Application-level patents protects our business areas. Application patents includes methods for manufacturing devices (capacitors/electrodes).

Strategy to continuously secure IP on fiber morphology and function towards applications.

** MIM: Metal-Inslutator–Metal | **ASC: Anisotropic Surface Coating*



More data …

More power …

More capacitors!

ULTRA-THIN CAPACITORS

Smoltek Semi develops CNF-MIM – a proprietary capacitor technology based on carbon nanofibers, that meet the demands of next-generation electronics, including applications in AI, smartphones and automotive electronics.

Smoltek Semi solves industry problems:

- Power-integrity failures in AI/HPC chips from low near-die capacitance and high parasitics
- Leakage-driven reliability issues in ultra-thin capacitors at higher V/T/speed
- 2.5D/3D and chiplet integration limits for conventional capacitors
- Manufacturing barriers for next-gen high-density capacitors
- Rising PDN cost and complexity from discrete caps and routing

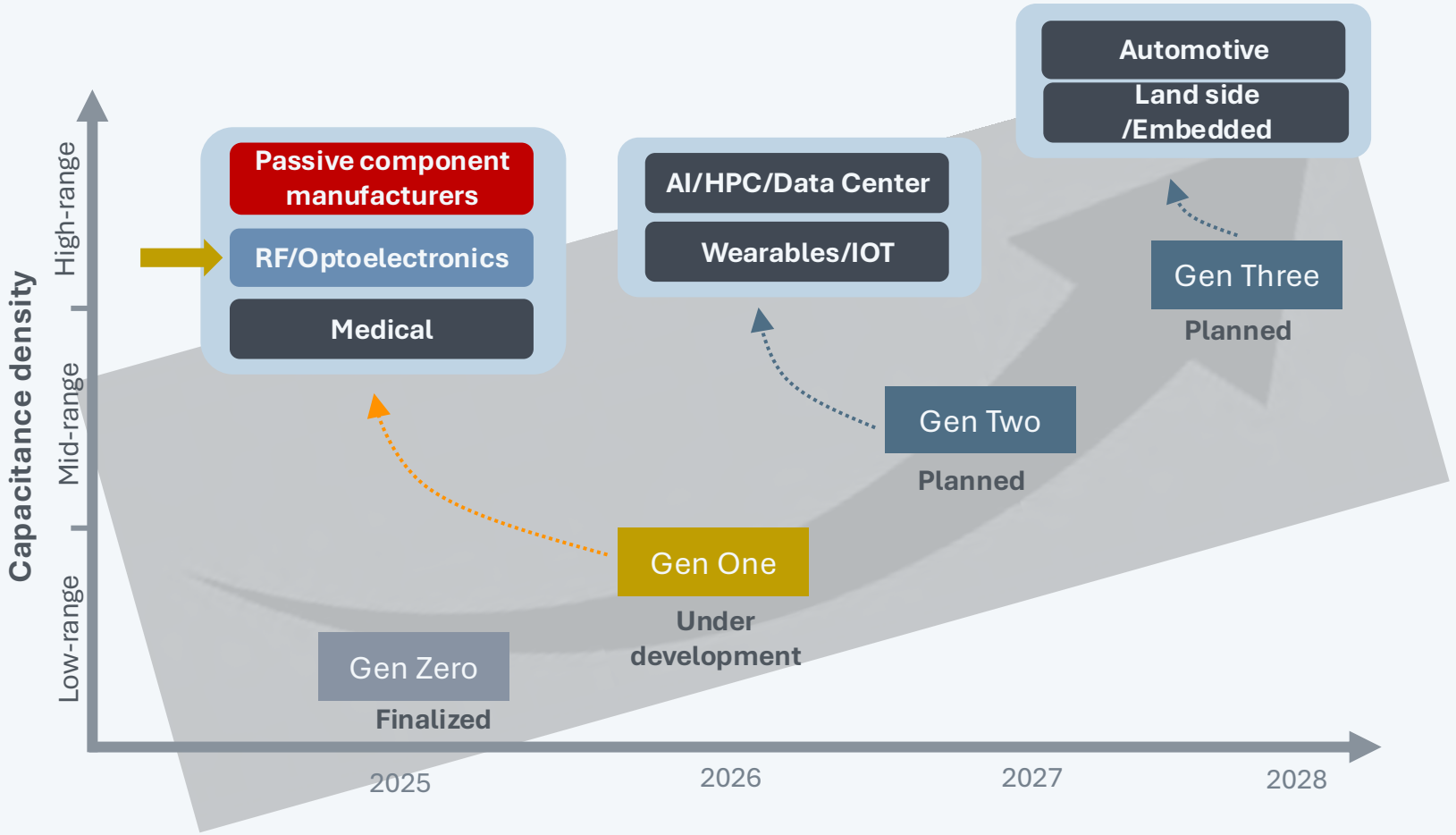
CNF-MIM capacitor technology offers:

- Ultra-thin profile
- High Breakdown voltage
- Very low ESL/ESR
- Technology s-curve for increasing capacitance density
- Lower cost potential

Target customers:

- Passive components: Yageo, TDK, Kyocera/AVX, Vishay, LG, Samsung
- RF/Opto-electronics: Hitachi High-Tech, Ericsson, Qorvo, NXP Semiconductors

SEMICONDUCTOR GO-TO-MARKET STRATEGY

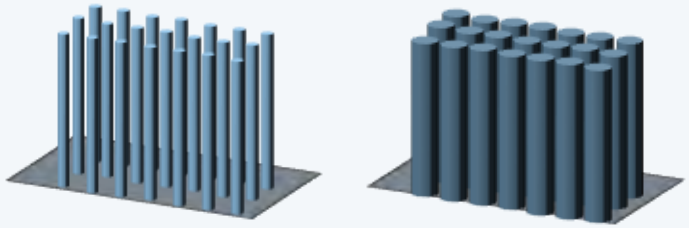


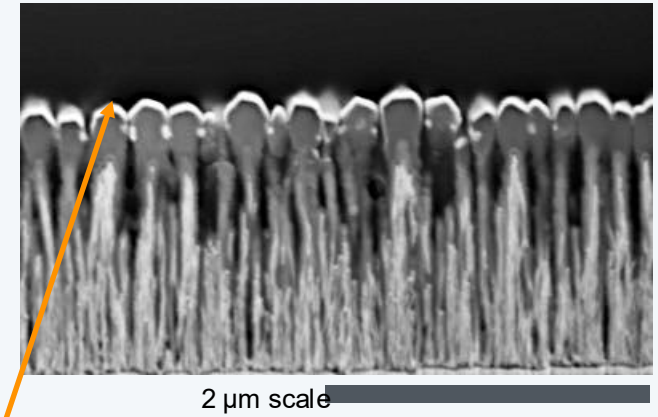
- ✓ **Early 2026: Successful reliability tests**
- ✓ **Gen-One capacitors are in final processing**
- ✓ Collaboration with ITRI in an industrial ecosystem for commercial manufacturing
- ✓ State-of-the-art cleanroom laboratory at Chalmers with in-house developed equipment for initial production steps
- ✓ Production capacity established to manufacture more than one million capacitor devices per year.
- ✓ With installation of the industrial PECVD system production capacity can be scaled-up significantly

Smoltek's target market entry is RF domain for GenOne, followed by AI/HPC/Data Centers for GenTwo

SMOLTEK'S CAPACITOR VS. INDUSTRY LEADER

Smoltek – CNF-MIM Capacitors





VS.

Industry leaders – Deep Trench Capacitors

In production, the Atomic Layer deposition (ALD) stack process is largest cost driver that represents about **54%** of the costs (COGS analysis).

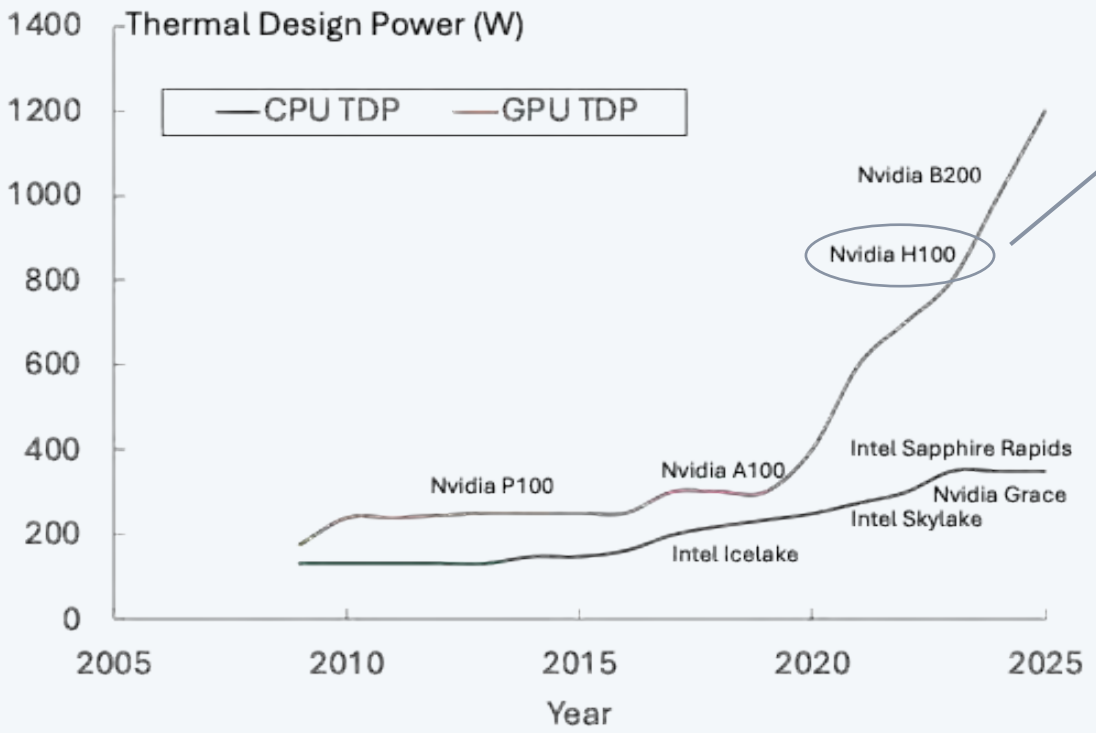
Smoltek uses 1 ALD process step, while competitors, **TSMC,** Samsung etc. uses 3-4 ALD process steps, which makes Smoltek's solution both faster and much more cost-effective.

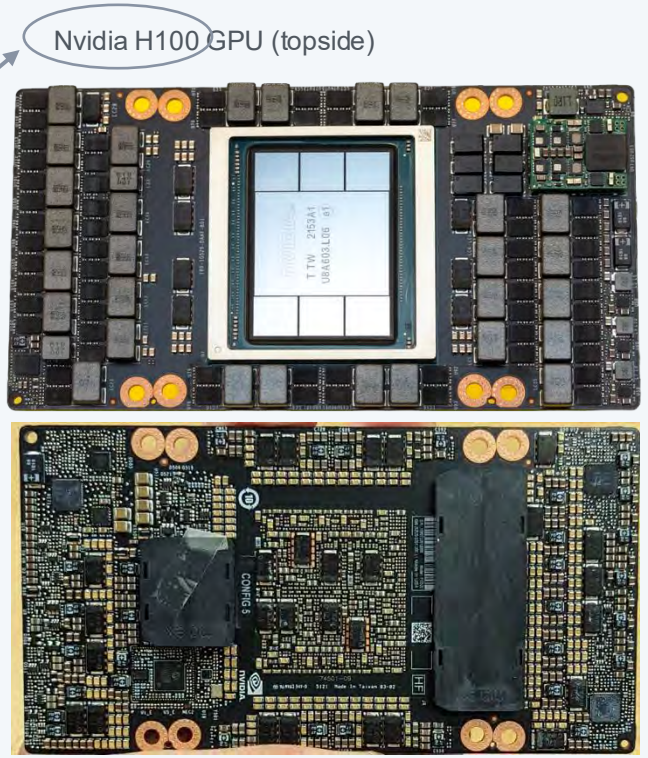
Smoltek's manufacturing process reduces cost with about 30%.

AI DATA PROCESSING CREATE CHALLENGES

CPUs/GPUs/TPUs consumes rapidly higher amounts of electricity results in:

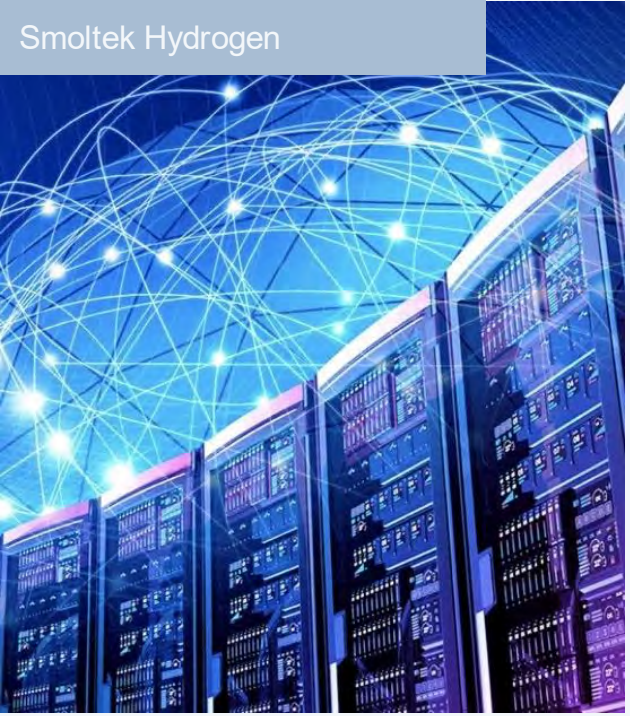
- Draw hundreds of watts per package
- Have aggressive transient currents (many tens of amps/µs)
- Run at tight supply tolerances (tens of mV noise budget)

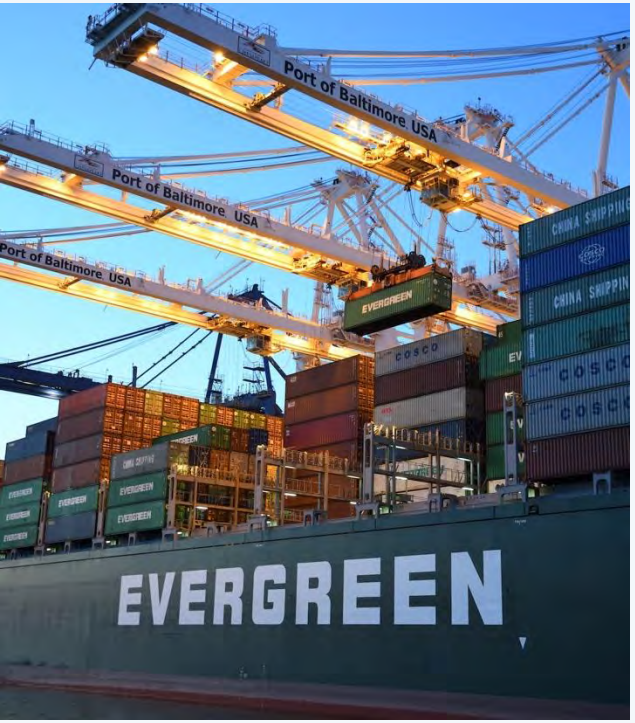




Nvidia H100 GPU (landside): About 75% of the landside area is power supply, mainly capacitors 60-80% of the total component count.

Ultra-thin, high-density capacitors close to the die can keep rail noise, di/dt events, and package resonances under control.





Key growth sectors for Hydrogen adoption

Smoltek's low-ir PTE:

Better performance & value.

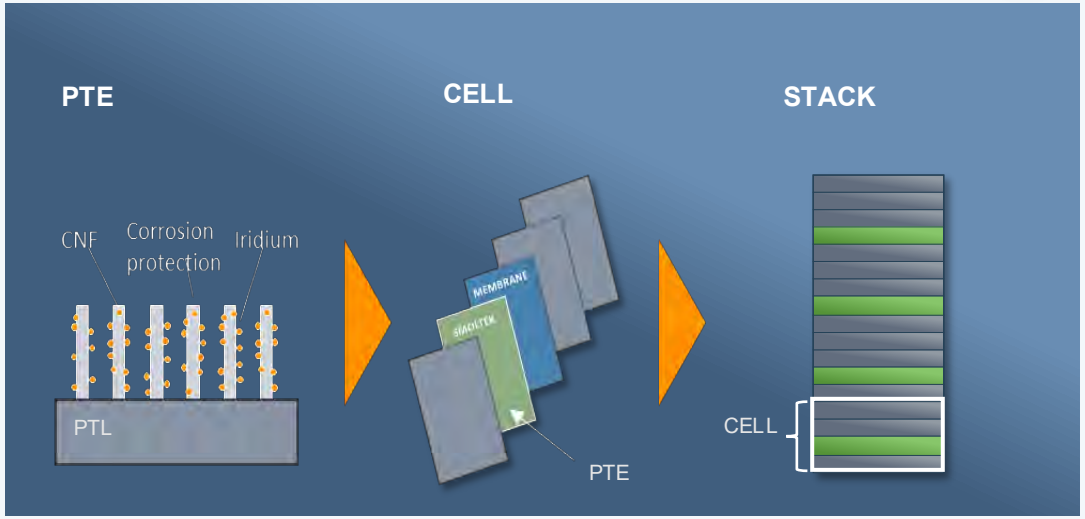
Less precious metal.

SMOLTEK'S SOLUTION FOR ELECTROLYZERS

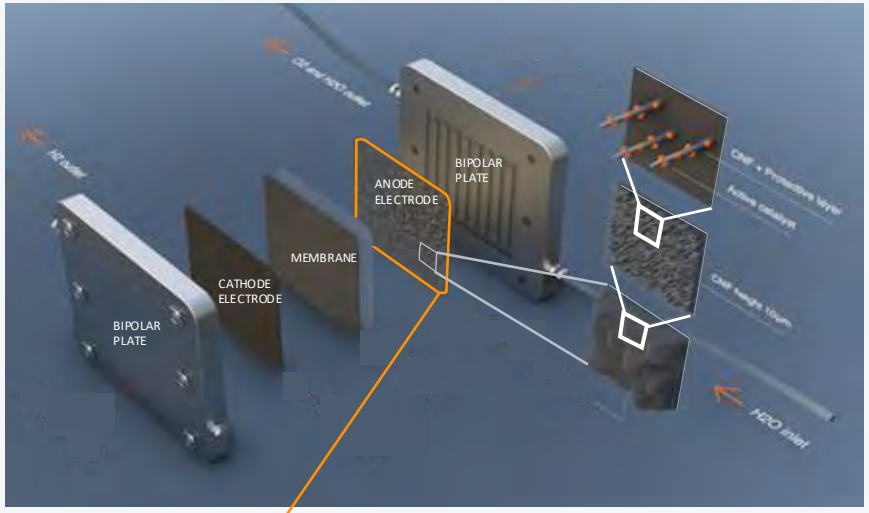
Smoltek's PTE is solving industry problems – hydrogen production cost, precious metal loading and power density.

- Smoltek has developed a porous transport electrode (PTE) with low precious metals loading » reducing production costs
- Smoltek enables a technology shift from iridium coated polymer membrane (standard today) to iridium coated substrate (PTE)

Smoltek's PTE is a component used in a PEM electrolyzer stacks



Components of an PEM electrolyzer cell

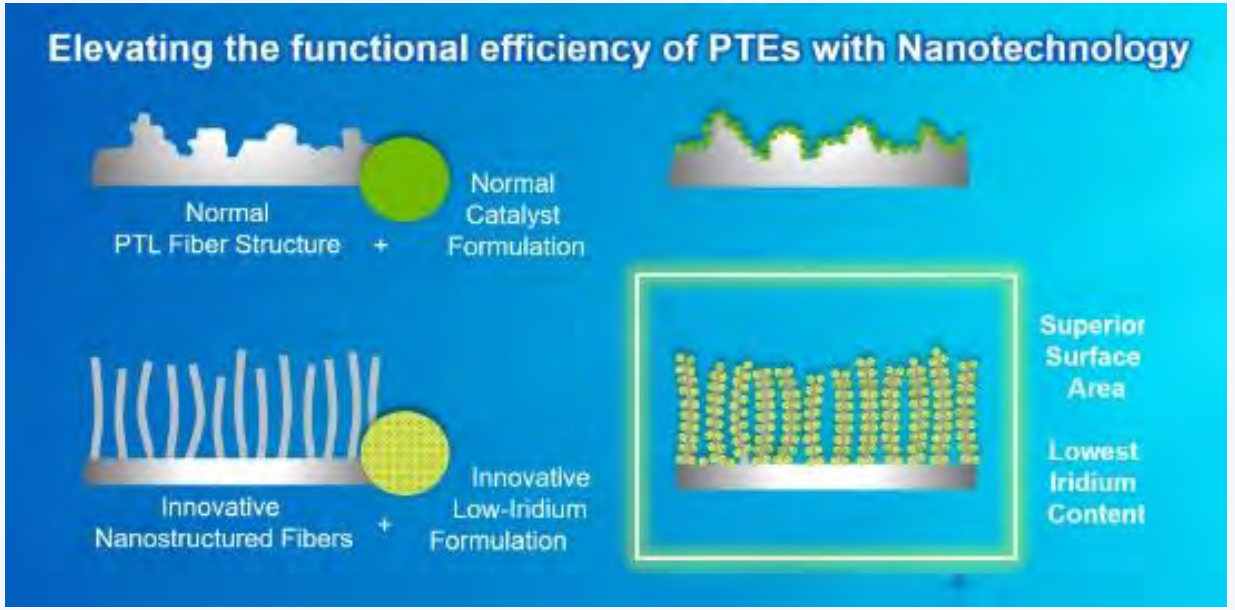


PTE: Anode porous titanium panel with an iridium coated nanostructure

- **PLUS:** Potential to minimize stacks based on higher power density » Minimizing and reducing costs further

SMOLTEK & HERAEUS LOW-IRIDIUM PTE

- Smoltek develops an innovative porous transport electrode (PTE) that reduces use of precious metals which is a major cost driver
- Smoltek's carbon nanofibers are used to expand the surface area, before the thin iridium layer is deposited on the structure providing a superior surface area, which is key in the catalytic process
- Smoltek, and Heraeus Precious Metals*, a global market leader in catalysts based PGM-group metals, aims to develop a PTE for PEM electrolyzers that produces more green hydrogen per milligram iridium (less than 0.1 mg iridium/cm^2)



** Heraeus Precious Metals is part of the Heraeus Group, one of Europe's largest privately held companies with sales of around €30 billion (2025). Heraeus Hydrogen is a major player in the hydrogen transition.*

Smoltek and Heraeus Precious Metals redefine iridium efficiency in PEM electrolyzers.

SMOLTEK HYDROGEN – COATING TECHNOLOGY

Smoltek Hydrogen is developing Smoltek CNF-ASC™ – a proprietary coating technology for the hydrogen industry. The products are aimed for PEM electrolyzers and PEM fuel cells.

Smoltek Hydrogen solves vital industry problems:

- Iridium scarcity is the main bottleneck for PEM electrolyzer scaling
- Electrode cost dominates green hydrogen economics
- Lowering Interfacial Contact Resistance (ICR) for Bipolar Plates (BPP)

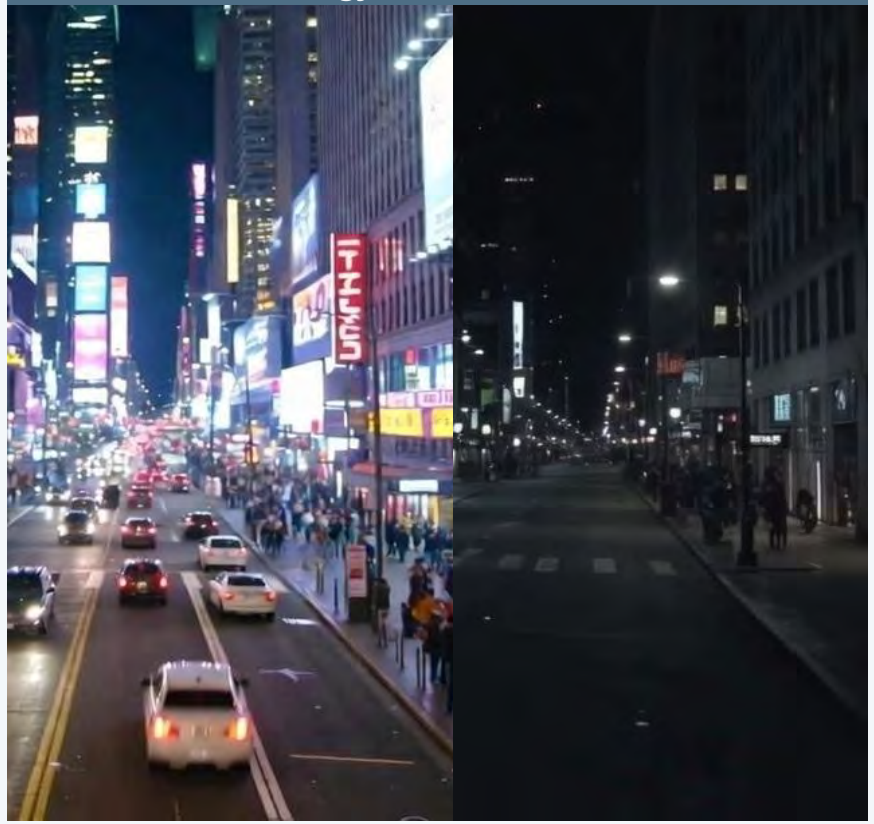
CNF-ASC coating technology offers:

- PTE offers a 95% reduction of iridium loading
- 2-3x higher current density enable miniaturization of PEMWE
- CNF-ASC low ICR enables higher efficiency and lower cost for BPP
- 30x higher electrochemical surface area (ECSA)
- PTE substantially reduces cost per m^2 of electrode

Target customers:

- PTE: Heraeus, Plug Power, Siemens, Bosch
- BPP: Toyota, Cummings, Plug Power, Ballard Systems

Reliable electricity is critical
Hydrogen enables resilience, storage and ability to move energy to where it is needed



STRATEGY AND MILESTONES

- ✓ Uniform CNF growth
- ✓ Move from lab to foundry processes
- ✓ Optimize Dielectric stack
- ✓ Grow longer fibers
- ✓ Improved device design concepts

- ▪ Perform external reliability testing at high temperature and high voltages
- ▪ Distribute samples and characterization data to partners and customers
- ▪ Low volume sales

- ▪ Production feasibility
- ▪ Foundry process established

- ▪ Scale up to mass production with industrial partner
- ▪ Implement manufacturing processes for high volume manufacturing
- ▪ Increase capacitance density
- ▪ Develop more products/applications to address multiple customer needs
- ▪ Optimize manufacturing for further cost reduction

RUNWAY VALUE TRIGGERS (2026–2027)

➢ Technology Validation

Value drivers:
- ▪ Finalizing CNF-MIM Gen 1 capacitors
- ▪ Delivering successful durability tests

➢ Commercial validation

Revenue generation:
- ▪ Low volume production
- ▪ Engineering Projects
- ▪ Industrial partners

➢ Exit/License(s) to large players

Revenue generation:
- ▪ Licenses: Right-of–use (Up-front) fee
- ▪ Joint development fees

➢ Scale-up + Royalties

Revenue generation:
- ▪ Volume based royalties on production
- ▪ Several new license deals
- ▪ Scale-up of own or JV production

VALUE FOR INDUSTRIAL PARTNERS

Market Entry

Semiconductor industry: Smoltek Semi

- **TAM:** The market for ultra-thin silicon capacitors is estimated to be worth approximately $4 billion by 2026 and grow to nearly $6 billion by 2030. where, the current RF market alone is $1.85 billion, with strong growth prospects
- **Partners:** primarily targets passive component manufacturers, where Smoltek's capacitor technology and strong IP footprint will provide significant market share and value over time.
- **Market entry:** Smoltek proves relevance in two important segments, (a) ***Radio Frequency*** (RF) and (b) ***optoelectronics***, based on ongoing dialogues with industry players this is ideal entry-level segments
- **Value propositions:**
  - Ultra-thin profile
  - Low ESL and ESR
  - Suitable for high Frequency applications
  - Smoltek Gen-One product already fulfils capacitance density

Hydrogen industry: Smoltek Hydrogen

- **TAM:** The PTE electrolyzer market is estimated to be 33 GW by 2030, corresponding to a value of 1.5 billion euros. The PEMFC market is reported to be worth $5.6 billion in 2025. Both market with strong growth.
- **Partners:** Primary targeting PGM metal providers, where Smoltek's surface coating technology (CNF-ASC) and strong IP footprint will provide significant market share and value over time. On-going projects with Heraeus towards an MVP.
- **Market entry:** Smoltek proves relevance in two important segments, (a) PTE electrolyzer and (b) bi-polar plate (BPP) for PEMFC. PTE as the first product, followed by many others.
- **Value propositions:**
  - 95% reduction of iridium loading towards 0.1 mg/cm2 and beyond.
  - 2-3x higher current density can enable miniaturization of PEMWE
  - CNF-ASC low ICR enables higher efficiency and lower cost for BPP
  - 30x higher electrochemical surface area (ECSA) provides a platform for future applications in chemical industry, MMO, etc.

Shareholder value directly links to value for industrial partners, either through license or M&A.

FABLESS BUSINESS MODEL

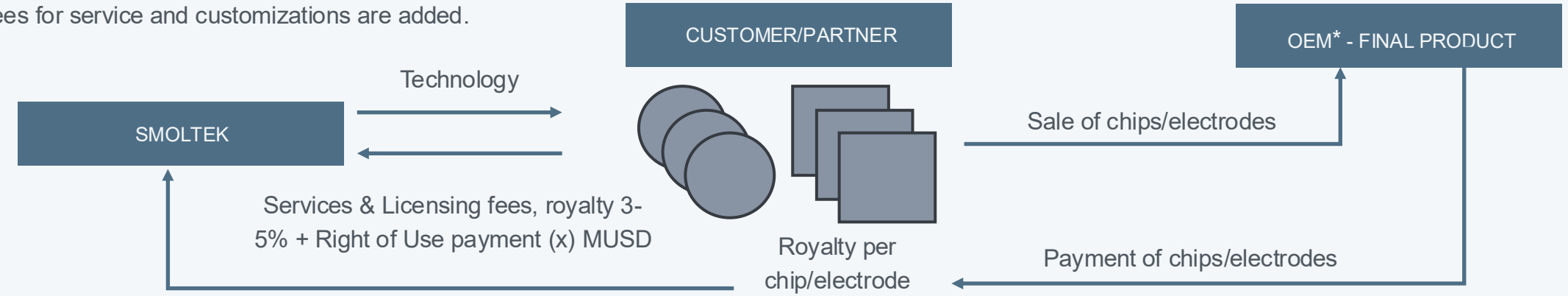
Smoltek engages in dialogues with industrial partners, which often results in: Pre-study, NRE projects, engineering samples, prototyping/customization and then into a Licensing discussion as described below:

1. Smoltek licenses the technology (IP) to the semiconductor industry (usually capacitor manufacturers) and the hydrogen industry (usually electrode manufacturers).

Fees for service and customizations are added.

2. Partners are involved in developing the final product and manufacturing, alternatively outsourcing the manufacturing of capacitors/electrodes.

3. OEM final products includes Smoltek's capacitors or electrodes.



Key benefits with business model based on Services and Licensing Agreements:

- Possibility to cover costs from day one and a large financial upside over time
- Quicker scaling with industrial players with existing marker presence with minimum capex for Smoltek
  - ➢ Industrial agreements already signed in 2022. Key technical milestones achieved » new agreements are within reach

** Original equipment manufacturer*

THANK YOU FOR LISTENING!

Do you want to know more?

Tune in to our podcasts!

Smoltek Semi podcast

Smoltek Hydrogen podcast

Contact us: Magnus Andersson, CEO Smoltek Nanotech Holding AB

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