



Press release Smoltek Nanotech Holding AB (publ)

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This press release is an English version of the previously published Swedish version, which has interpretive precedence.

Smoltek Semi Brings ALD In-House to Accelerate Innovation and Shorten Time to Market

Smoltek Nanotech Holding AB (publ) (“Smoltek” or the “Company”) announces that the subsidiary Smoltek Semi AB has acquired a plasma-enhanced Atomic Layer Deposition (ALD) system to implement its advanced dielectric stack on carbon nanofibers. The acquisition will significantly accelerate development – reducing iteration time from up to a month to a single day, while enabling in-house innovation and IP generation in dielectric stack technology for carbon nanofiber electrodes.

Smoltek Semi has acquired and commissioned a plasma-enhanced Atomic Layer Deposition (ALD) system in the cleanroom of Chalmers MC2 laboratory, enabling high-quality, in-house ALD film deposition. With this capability, Smoltek Semi can now complete a full coating cycle within a single day – reducing development time for its CNF-MIM capacitors from up to a month to a single day.

“By bringing ALD in-house, we gain the freedom to innovate and develop proprietary dielectric stacks, tailored to our technology. This is a key step toward building our own intellectual property within dielectric stacks and strengthening Smoltek’s long-term competitive position,” said Farzan Ghavanini, CTO at Smoltek.

Previously, ALD coatings were performed by external service providers, a process that was both time-consuming and costly. Bringing this capability in-house dramatically increases iteration speed and shortens time to market.

The acquisition marks an important strategic milestone, giving Smoltek full control over its process development and enabling the creation of proprietary ALD recipes optimized for carbon nanofibers—an expertise not available externally. This strengthens the company’s technology leadership and expands its IP portfolio within advanced dielectric stack development.

Brief background

Smoltek’s CNF-MIM™ technology enables the fabrication of ultra-thin capacitors for high-performance applications such as AI and HPC. The ALD process is crucial as it creates the insulating dielectric layer that determines the capacitor’s performance and capacitance.

Facts: ALD and PEALD

Atomic Layer Deposition (ALD) is a thin-film deposition method that enables extremely thin and uniform material films, where material is built up atomic layer by atomic layer. Plasma-enhanced ALD (PEALD) uses plasma to activate the so-called 'precursors', which enables deposition at lower temperatures without compromising film quality. This opens more material choices and makes it possible to coat more types of surfaces.

For further information

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Smoltek Nanotech Holding is a deeptech company that provides a technology that enables the production of conductive nanostructures on various materials. The company's nanostructure manufacturing technology can be used in several industrial sectors. Customers are found in the global process industry and semiconductors. The products that the company develops are used in equipment to produce fossil-free hydrogen and in semiconductors to further miniaturize microchips. The company protects its unique carbon nanotechnology through an extensive patent portfolio consisting of more than 120 patents, of which 97 are currently granted. Smoltek's share is listed on the Spotlight Stock Market under the ticker SMOL. Smoltek is a development company and forward-looking statements regarding time to market, production volume and price levels should be interpreted as forecasts and not commitments.