

Provexa and LayerOne Strengthen Scandinavian Leadership in Graphene-Enhanced Coatings Through GAIA Project

NOVEMBER 2025

GAIA - Graphene Adoption in Industrial Applications

Gothenburg, Sweden – 28 Nov 2025 — Provexa Technology and Norwegian graphene specialist LayerOne, including project partners Chalmers Industriteknik, Chalmers University of Technology and RISE announce major progress as the the GAIA project concludes. The three year initiative was a collaborative effort to advance graphene-enhanced industrial coatings and build a flexible pilot line capable of small-scale, real-world production.

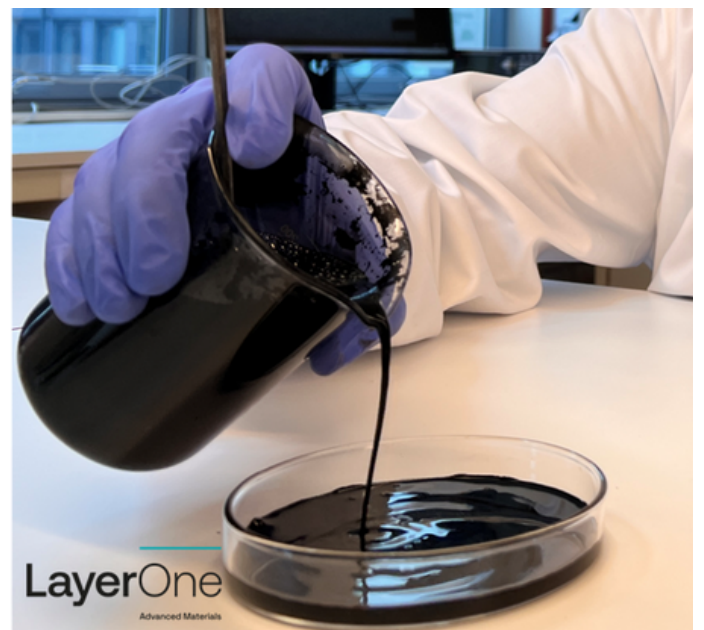
Provexa, long recognized as one of Sweden's most versatile surface-treatment providers, began exploring graphene in 2018 during a corrosion-protection project for Scania. What started as small-scale experimentation has now matured into a multi-year development pathway, supported through projects like Pluto Conductive and GAIA, aimed at creating next-generation coatings with improved electrical conductivity, corrosion resistance, and electromagnetic shielding.

A central milestone of GAIA is Provexa's new, highly adaptable electrolytic pilot plant—built with 40% funding support from Vinnova, Formas and Energimyndigheten (Swedish Energy Agency) and through the strategic innovation program SIO Grafen. The installation bridges the gap between laboratory research and industrial relevance, allowing realistic demonstration runs, customer evaluation, and testing of graphene-based processes. Designed to be flexible rather than product-specific, the line supports multiple workflows, including those evaluated within GAIA.

For LayerOne, GAIA came at a pivotal moment. Although the company—formerly Abalonyx—has produced graphene oxide since 2008, early production was limited to gram-scale batches. Industrial-scale manufacturing of graphene oxide and reduced graphene oxide began only after Aker acquired the company and established LayerOne in 2021. The same year, LayerOne joined the GAIA project.



GAIA Pilot Line. Photo: Provexa



Graphene in varnish. Photo: LayerOne

“

It was fantastic to work on a project where collaboration between industry, academia and research institutes so clearly drove innovation development forward.

Sofia Öiseth,
GAIA Project Coordinator,
Chalmers Industriteknik

”

GAIA - Graphene Adoption in Industrial Applications

“We had an inkling that our graphene materials would be a strong match for coatings, but GAIA was one of the earliest opportunities to test that in a real industrial environment,” says Bjørn Solemsli of LayerOne. “Safe to say, it was the right match. The project gave us the evidence and confidence that our graphene can truly add value in coatings. Since then, functional coatings have become one of our major verticals.”

The most difficult technical barrier for all partners was graphene dispersion—achieving a film with no lumps or agglomerates, especially within electrophoretic paint, one of the most sensitive coating systems used at industrial scale. As challenges emerged, the project structure evolved, though partner communication and agility: instead of singular, sequential workflows, all partners worked in parallel from different angles, accelerating breakthroughs.

“Dispersion is everything,” says Morten Eikenes of LayerOne. “If you cannot disperse graphene properly, you cannot unlock its benefits. This project strengthened our understanding and improved our materials.”

Christian Werdinius from Provexa agrees. “Halfway through the project, it became clear that dispersion was the key to everything. By shifting our approach and allowing partners to work in parallel, we finally moved past the roadblocks.”

The results speak to the value of collaboration. The consortium successfully demonstrated stable dispersion and functional performance, verifying electrical conductivity and identifying pathways for corrosion protection and electromagnetic interference (EMI) shielding. The project also provided LayerOne with an in-depth understanding of coating-industry needs, helping refine their product offerings for multiple sectors.

Both companies see GAIA not as a conclusion but a foundation. Discussions are already underway for continued Scandinavian collaboration beyond 2025.

“It’s always exciting to show how technologically advanced Scandinavians can be,” says Bjørn Solemsli of LayerOne.



With support from



Strategiska
innovations-
program