

ASX Announcement

9 June 2026

Repeatable Graphene Deposition Below 300°C

Independent Expert verification by UNSW Sydney Graphene Research Leader opens door to Tier 1 semiconductor engagement and process scale-up

Highlights

- Associate Professor Rakesh Joshi, leader of the Graphene Research Group at University of NSW Sydney's School of Materials Science and Engineering, independently verified that Adisyn has achieved reliable graphene deposition below 300°C
- Three independent experimental runs on separate days, each verified across 10 Raman Spectroscopy measurement spots highlights process consistency
- Three UHR-TEM cross-sections confirm continuous graphene layer formation across the full 1x1 cm² coupon
- Results have proven a very wide process window temperature range, which makes it much easier to be adopted by fabs. Process operates well below the semiconductor industry's thermal limit, where no previous graphene process deposited on an industrial scale deposition system has managed to reliably operate
- Milestone 2 confirms successful deposition of an organic substrate capping layer on 1cm² copper coupons at below 300°C
- The Global Semiconductor Market is forecast to reach approximately US1T by 2030¹
- Adisyn now moves to engagement with Tier 1 Global Semiconductor Companies, alongside scale-up to wafer-level formats

Adisyn Ltd (ASX: AI1) ("Adisyn" or "the Company") is pleased to confirm that it has achieved Independent Expert verification of the repeatability of its graphene deposition process for next-generation semiconductors by Associate Professor Rakesh Joshi of UNSW Sydney's School of Materials Science and Engineering.

Under the Share Sale and Purchase Agreement ("SPA") relating to its acquisition of 2D Generation Ltd ("2DG") has successfully achieved Milestone 2 which required reliable, repeatable graphene deposition at temperatures below 300°C². That bar has now been cleared consistently across multiple independent experimental runs with results confirming uniformity across the coupon surface.

With this milestone independently verified, Adisyn transitions from R&D proof-of-concept to active industry engagement and process scale-up.

Program Milestones

- **Milestone 1 (achieved - 6 January 2026):** Demonstration of continuous graphene formation on a 1cm² coupon using an industrial ALD system at temperatures below 300°C

¹ Kevin Zhang, TSMC, Semiconductor Industry: Present and Future, IEEE solid state Circuit Conference, Feb 2024

² Refer to ASX announcement dated: 4 November 2024

- **Milestone 2 (achieved - today):** Reliable, repeatable graphene deposition confirmed below 300°C across multiple independent runs, with uniform coverage across the full 1cm² coupon
- **Milestone 3 (next):** binding agreement with a global semiconductor corporation and AI1 receiving income of more than AUD1M

Commenting on the milestone, Adisyn Managing Director Arye Kohavi said:

“Achieving Milestone 2 with independent expert verification is a defining moment for Adisyn. Repeatability is what separates an interesting laboratory result from a process that the semiconductor industry can actually use. We have now demonstrated that our graphene deposition process works consistently, run after run, with uniform coverage across the coupon - and we have done so at temperatures that are fully compatible with existing chip fabrication environments.

This result, combined with our granted US patent³, gives us a strong foundation to begin meaningful conversations with Tier 1 semiconductor companies. The Company is now positioned to commence engagement with Tier 1 semiconductor manufacturers.”

The Result: Graphene on Copper, Confirmed Below 300°C

Through its wholly owned subsidiary 2D Generation, Adisyn has demonstrated continuous graphene film formation on a copper substrate using an industrial Atomic Layer Deposition (ALD) system with all process steps maintained below 300°C.

The choice of ALD is not incidental. ALD is already one of the standard deposition methods in leading-edge semiconductor fabs across the world. TSMC, Samsung and Intel all operate ALD systems as core production infrastructure for their most advanced transistor and interconnect processes.

A chipmaker evaluating Adisyn’s graphene process is anticipated to already have years of experience running ALD systems and will have detailed understanding of the requirements to implement the new technology. This understanding breaks down the barriers to adoption and is critical to surpassing commercial thresholds.

The graphene layer, confirmed at approximately 1-2 nm thickness was verified by two independent characterisation methods:

- **Raman spectroscopy:** 10 measurement spots per coupon confirmed consistent graphene spectral signatures across the full sample surface
- **UHR-TEM imaging:** cross-section electron microscopy at the Hebrew University of Jerusalem confirmed a continuous graphene layer with interlayer spacing of $3.4 \pm 0.3 \text{ \AA}$ - consistent with characteristic graphite structure - and lateral continuity across several micrometres

³ Refer to ASX announcement dated 7 May 2026

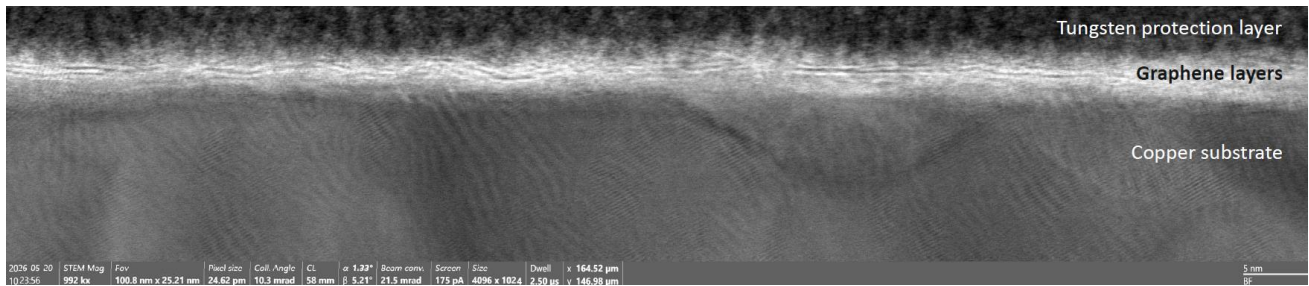


Figure 1: UHR-TEM cross-section showing the continuous graphene layer (bright band) between the copper substrate and tungsten protection layer. Scale bar: 5 nm. Hebrew University of Jerusalem.

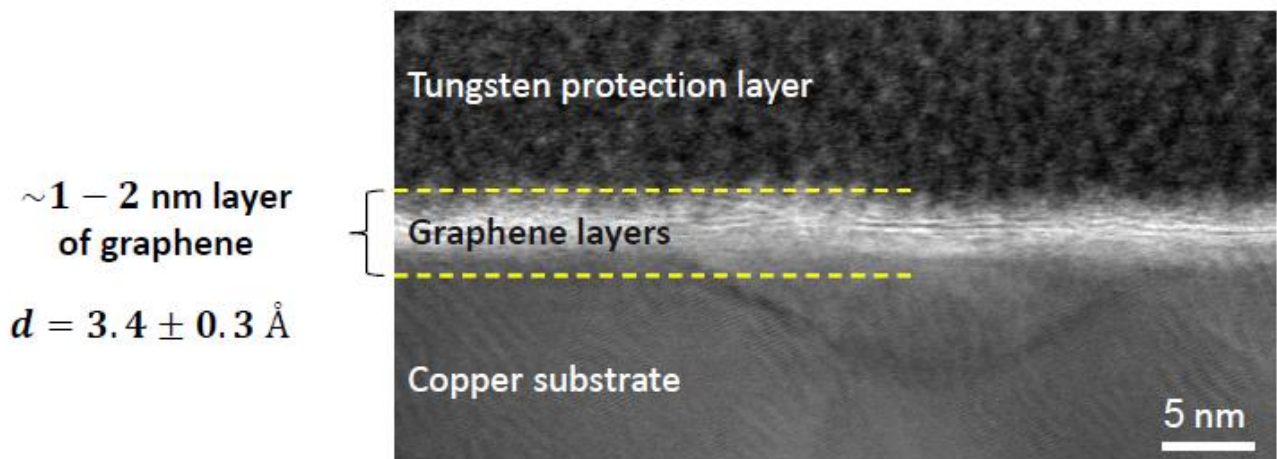


Figure 2: Close-up UHR-TEM view showing interlayer spacing of $3.4 \pm 0.3 \text{ \AA}$ and 1-2 nm total graphene layer thickness

Repeatability: The Key to Commercial Credibility

Adisyn ran the same deposition recipe (YBPD-391) three times, on separate days. Each run produced consistent graphene layer formation, confirmed across 10 Raman measurement spots per sample. The same layer structure appeared every time.

Critically, the layer was also confirmed uniform across the coupon itself. Three separate cross-section samples taken from different positions across the same 1 cm² coupon produced identical results - demonstrating that the deposition process covers the substrate evenly, not just in isolated patches.

The results demonstrate repeatability across independent runs and uniformity across the coupon surface.

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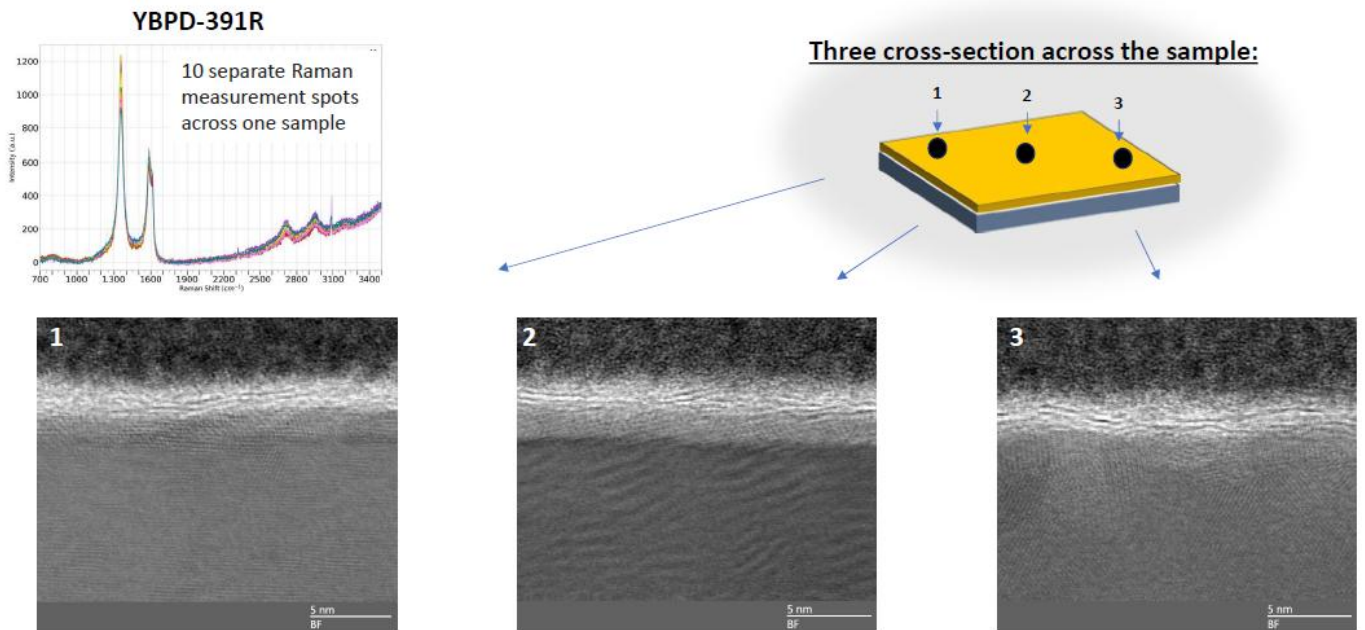


Figure 3: Three UHR-TEM cross-sections taken at positions 1, 2 and 3 across the same 1x1 cm² coupon (YBPD-391R). The same continuous graphene layer structure appears at every sampling position, confirming full-coupon uniformity.

Independent Verification: Associate Professor Rakesh Joshi, UNSW Sydney

Associate Professor Rakesh Joshi leads the Graphene Research Group at UNSW Sydney and serves as Theme Leader for Energy and Environment at the School of Materials Science and Engineering. He is a Chief Investigator in the ARC Centre of Excellence for Carbon Science and Innovation, has published over 130 peer-reviewed journal articles in the field, co-authored work with Nobel Laureate Sir Andre Geim at the University of Manchester, holds five international patents and is a Fellow of the Royal Society of Chemistry.

Associate Professor Joshi was provided with the full Milestone 2 results dataset, comprising the three-run Raman repeatability data and UHR-TEM cross-section imaging, and has confirmed the results meet the Milestone 2 standard.

Milestone outcome and consideration

In accordance with the SPA, and following independent verification and Board approval, the achievement of Milestone 2 results in the issue of 100 million fully paid ordinary shares to the original shareholders of 2D Generation.

Additional shares will also be issued to eligible employees under the agreed incentive arrangements, reflecting their contribution to the delivery of Milestone 2.

What Comes Next: Commercial Engagement and Scale-Up

With Milestone 2 independently confirmed, Adisyn moves into a new phase of its program.

The Company will commence deeper engagement with Tier 1 global semiconductor manufacturers and fabrication facilities to explore collaboration, validation and integration pathways. The

combination of industrial ALD equipment, semiconductor-compatible temperatures and confirmed repeatable film formation provides the foundation for those conversations.

In parallel, Adisyn will advance film quality optimisation and begin scale-up from 1x1 cm² coupon to full wafer-level substrates – the format required for commercial semiconductor manufacturing.

The Semiconductor Interconnect Problem

Every advanced chip in every AI server, smartphone and data centre relies on copper interconnects - the microscopic wiring that links billions of transistors. As chips shrink below 2 nanometres, copper suffers increased electrical resistance. It generates too much heat, wastes too much power, and limits how fast signals can travel.

The semiconductor industry has known for years that graphene, with its extraordinary electrical and thermal properties, is the logical successor material. The problem has been getting graphene to grow inside a chip fab, using existing equipment, without exceeding the temperature thresholds that would damage the chip structures already in place.

Adisyn's process addresses this challenge directly.

This announcement has been approved for release by the Board of Adisyn Ltd.

-ENDS-

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About Adisyn

Adisyn Ltd (ASX: AI1) is an Australian technology company developing advanced graphene materials for high-value applications in the semiconductor and advanced materials sectors.

The Company's core focus is the development of a patented low-temperature Atomic Layer Deposition (ALD) process designed to enable direct graphene growth on semiconductor wafers, addressing the performance limitations of copper interconnects in next-generation semiconductor devices.

Adisyn is also exploring additional commercial applications of its graphene expertise, including advanced composite materials designed to reduce radar signatures in UAV and defence platforms.

Adisyn's broader business includes Adisyn Services, which provides managed IT services, cloud, cybersecurity and artificial intelligence solutions to Australian small and medium-sized enterprises.

Forward-looking statements:

Statements contained in this release, particularly those regarding possible or assumed future performance, revenue, costs, dividends, production levels or rates, prices, or potential growth of Adisyn Ltd are, or may be, forward-looking statements. Such statements relate to future events and expectations and as such, involve known and unknown risks and uncertainties. These forward-looking statements are not guarantees or predictions of future performance and involve known and unknown risks, uncertainties, and other factors, many of which are beyond the Company's control, and which may cause actual results to differ materially from those expressed in the statements contained in this release.

The Company cautions shareholders and prospective shareholders not to place undue reliance on forward-looking statements, which reflect the Company's expectations only as of the date of this announcement. The Company disclaims any obligation to update or revise any forward-looking information, whether as a result of new information, future events or otherwise, except as required by law.