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SiNTL™ CLEARS 550 mAh/g MILESTONE; OPTIMISED FORMULATIONS REACHING 600 mAh/g

SiNTL cells exceed 550 mAh/g; optimised formulations reaching 600 mAh/g; carbon coating to deliver consistent results

KEY HIGHLIGHTS

- **550 mAh/g EXCEEDED**: SiNTL cells have surpassed 550 mAh/g across all tested configurations, with optimised formulations exceeding 600 mAh/g on initial cycles — over 50% higher than conventional graphite anodes and approximately 20% above current commercial silicon-enhanced anode benchmarks.
- **CONSISTENT 600 mAh/g THE NEAR-TERM TARGET**: Carbon-enhanced SiNTL silicon-anode formulations are in development to sustain 600+ mAh/g across a wider range of charge/discharge rates, with results expected in the near term.
- **DROP-IN UPGRADE FOR BATTERY MANUFACTURERS**: Graphite-anode cells from manufacturers such as Samsung, Panasonic, CATL and LG are generally limited to ~372 mAh/g. SiNTL is designed as a drop-in upgrade — no re-tooling or process redesign required — making it a compelling option for global battery manufacturers.
- **SiNTL TARGETS HIGH-GROWTH APPLICATION MARKETS:** Higher-capacity silicon anode batteries address demanding applications where energy density and power performance are critical, including large drones and UAVs, electric vehicles, military systems and industrial power tools
- **14D WELL-FUNDED TO ADVANCE COMMERCIALISATION**: Following its well-supported $8.45 million placement in June 2026, 14D has sufficient funding continue its existing commercial development pathways and also leverage its new Advisory Board and explore additional expansion initiatives and market applications. The Company looks forward to updating the market in due course.

1414 Degrees Ltd (ASX: 14D) ("1414 Degrees" or the **"Company")** is pleased to report continued progress in its SiNTL™ silicon nanoparticle anode program with George Washington University (GWU). SiNTL cells have exceeded 550 mAh/g across all tested configurations, with optimised formulations recording above 600 mAh/g on initial cycles, advancing toward consistent 600 mAh/g performance.

Capacity Results — SiNTL Cells Exceed 550 mAh/g

Testing of the latest SiNTL cell configurations has produced the following results across three cell variants:

- Two cell variants exceeded 600 mAh/g on initial cycles, with capacity stabilising above 550 mAh/g at higher rates.

- A third variant, formulated with lower silicon content, achieved just under 600 mAh/g on initial cycles, stabilising at just over 500 mAh/g at higher rates.

The reduction in capacity at higher rates is attributable to the inherently low electrical conductivity of silicon, which limits the speed at which ions can be inserted and extracted during fast charge/discharge cycles. This is a well-understood characteristic of silicon anode materials and does not affect the demonstrated peak capacity performance. Cycle life testing is underway and results will be reported as they become available.

The Company regards these results as confirmation that SiNTL's core material performance is on a credible commercialisation trajectory toward a drop-in product compatible with existing lithium-ion battery manufacturing lines.

Carbon pathway to higher rates

The Company's development group at George Washington University is evaluating carbon enhanced SiNTL nanoparticle material to increase rate performance of charge-discharge cycles. This is a proven technique for improving the electrical conductivity of silicon in lithium-ion battery anodes, enabling the material to sustain higher capacities across a wider range of charge/discharge rates.

The Company expects carbon enhanced SiNTL formulations could maintain 600+ mAh/g at elevated rates, extending the performance window relevant to high-demand applications such as drone rapid-recharge cycles and satellite mounted lasers.

SiNTL is developed under an exclusive global licence with George Washington University, where Professor Michael Wagner's team continues to lead the technical program. The material is produced via a low-temperature (125–180°C), single-step synthesis process with approximately 97% demonstrated yield and compatibility with conventional lithium-ion battery production lines.

What applications benefit most from higher-capacity cells?

A battery with a capacity of 600 mAh/g would be a substantial improvement over the current industry-standard commercial Li-ion graphite anodes, which have capacity of around 370 mAh/g. While there are several variables to consider when making comparisons (eg, cycle life, charge rate, cost), if all of these remain competitive, 14D believes that a SiNTL-anode battery with 600 mAh/g would be extremely attractive to several end user applications in particular:

<u>Drones & UAVs</u>	<u>Electric aircraft</u>
Drones are extremely weight sensitive. Advantages include: • Longer flight times • Larger payloads • Extended surveillance missions • Improved mapping and inspection capabilities Examples:	Electric aviation is constrained by battery energy density. Benefits: • Longer flight range • Higher payload • Smaller battery packs • Improved economics Potential applications:

- Military & Defense drones
- Agricultural drones
- Delivery drones
- Cinematography

- eVTOL air taxis
- Regional commuter aircraft
- Cargo drones
- Long-endurance UAVs

Even a 20–40% increase in practical energy density can significantly expand the viable mission envelope.

Spacecraft, Satellites, Rockets

Every kilogram launched into orbit is expensive.

Higher specific capacity means:

- Lower launch mass
- Longer satellite missions
- More payload

Useful for:

- Satellites, Telecommunications
- Space Defence Lasers
- Lunar rovers
- Planetary probes

Electric vehicles

If cell energy density increases proportionally:

- A 500-km EV Could become a 650-km range EV

Heavy vehicles gain extra range and/or operating time:

- Trucks
- Buses
- Construction equipment
- Mining equipment

Alternatively, the extra range can be sacrificed in return for lower cost, lower weight.

Robotics

Robots often devote a large fraction of their weight to batteries.

Higher-capacity batteries enable:

Military systems

Portable power is a major challenge.

Benefits:

- Reduced carried battery weight

- Longer operating time
- Higher payload
- Smaller battery packs

Useful for:

- Warehouse robots
- Humanoid robots
- Inspection robots
- Service robots

- Longer mission duration
- Higher endurance for unmanned systems

Examples:

- Radios
- Sensors
- Night vision
- Ground robots

Marine applications

Examples:

- Electric boats
- Underwater drones
- Autonomous surface vessels

Benefits:

- Greater range
- Reduced battery weight
- More cargo capacity

Portable medical devices

Examples:

- Portable ultrasound
- Medical monitors
- Insulin pumps
- Emergency equipment

Longer operating time without increasing device size is valuable.

Commenting on the program, Chief Technology and Operations Officer Peter Yaron said:

"SiNTL cells are now surpassing 550 mAh/g across our test configurations, with our best-performing cells recording above 600 mAh/g at slow rates. That gives us real confidence in the material. The carbon enhancement work is the path to making 600 mAh/g the consistent operating baseline."

AUTHORISED BY:

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ABOUT 1414 DEGREES LIMITED

1414 Degrees (ASX:14D) is advancing an integrated clean-energy and industrial decarbonisation platform spanning grid-scale storage, industrial heat, hydrogen and advanced battery materials.

The Company's strategy combines near-term infrastructure revenue with scalable technology commercialisation, underpinned by deep expertise in energy-dense silicon systems and materials engineering. 1414 Degrees is developing the Aurora Energy Precinct in South Australia, a development-ready energy and industrial site spanning 16km² within the Upper Spencer Gulf Renewable Energy Zone. Aurora is designed for firmed renewable electricity and co-located high-demand users, with grid access, development approvals and proximity to fibre infrastructure supporting global connectivity. The site is strategically positioned to support data centre operators and other energy-intensive industries requiring reliable, low-emissions power at scale. The Stage 1 140 MW / 280 MWh Battery Energy Storage System (BESS) represents a near-term revenue opportunity, with expansion potential aligned to customer demand.

Core Platforms:

SiNTL™: A silicon-enhanced anode material designed to increase lithium-ion battery energy density while remaining compatible with existing manufacturing processes.

SiBrick®: Silicon-based thermal energy storage media forming the foundation of the Company's long-duration energy storage systems.

SiBox® (Industrial Heat-as-a-Service): Long duration energy storage technology that converts low-cost renewable electricity into dispatchable high-temperature heat, supporting industrial decarbonisation across energy-intensive sectors.

SiPHyR®: A silicon-based methane pyrolysis reactor integrating thermal storage to produce low-emissions hydrogen and solid carbon using renewable energy sources.

1414 Degrees' technologies are unified by a single materials platform — leveraging silicon to store, convert and enhance energy across multiple sectors.

For more information, please visit www.1414degrees.com.au

Forward-looking statements

This announcement includes forward-looking statements which may be identified by words such as 'anticipates', 'believes', 'expects', 'intends', 'may', 'will', 'could', or 'should' and other similar words that involve risks and uncertainties. These forward-looking statements are based on the 1414 Degrees' expectations and beliefs concerning future events as at the date of this announcement. Forward-looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of 1414 Degrees, which could cause actual results to differ materially from such statements. 1414 Degrees makes no undertaking to update or revise the forward-looking statements made in this announcement to reflect any change in circumstances or events after the date of this announcement.