ASX ANNOUNCEMENT

FOR IMMEDIATE RELEASE TO THE MARKET

Li-S Energy Limited – ASX Code: LIS

Thursday 10 November 2022

Chairman's Statement and CEO Presentation

Li-S Energy Limited (ASX: LIS) ("LIS" or "the Company") is pleased to provide the following which will be presented at the Company's Annual General Meeting today:

- Chairman's Statement
- CEO Presentation

This announcement has been authorised by the Board.

For further information contact:

Dr. Lee Finniear
Chief Executive Officer
On 07 3054 4555

Li-S Energy AGM 2022
Chairman's Statement
AGM 10 Nov 2022

Ladies and gentlemen, on behalf of the Board and the entire Li-S Energy team, I would like to welcome you to the 2022 Annual General Meeting of Li-S Energy shareholders.

My name is Ben Spincer, Li-S Energy's Chair, and I am delighted to be hosting an in person Annual General Meeting for Li-S Energy.

First, I would like to acknowledge the Traditional Owners of the lands on which we meet the Turrbal People, and I pay my respects to their Elders past, present and emerging.

I would like to start by introducing the LiS Energy team who are with me in Brisbane today. I am joined by my fellow Directors, Ms Hedy Cray, Mr Robin Levison and Mr Tony McDonald. We are also joined by the CEO, Dr Lee Finniear who you will hear from shortly, the CFO Mr Ken Hostland, and the General Counsel and Company Secretary, Mr Will Shiel.

2022 Progress

2022 was an exciting year for Li-S Energy (LIS) as we transitioned from a privately held venture to our listing on the ASX on 28 September 2021. Whilst the pandemic and a challenging geopolitical and economic environment have presented challenges, I am delighted that LIS has achieved or exceeded the challenging goals we set ourselves in our prospectus, culminating in test flights of drones powered by our lithium sulphur and lithium metal batteries

Over the last three years, LIS, has worked with Deakin University (Deakin) to commercialise over a decade of research in the development of a lithium-sulphur battery that utilises boron nitride nanotubes (BNNTs) as a nano-insulator to improve performance and cycle life.
Lithium-sulphur batteries (also known as Li-S batteries) have the potential to provide a much greater energy storage capacity than current lithium-ion batteries and much of the science behind them is well established. However, to date lithium sulphur's main drawback has been a relatively short cycle life, inhibiting their mass adoption. By using BNNTs and other novel materials, LIS has substantially increased cycle life in our lithium sulphur batteries. Test cells have now demonstrated sustained performance over 1000 charge/discharge. We have also been able to extend our innovation to another high energy density technology, lithium-metal batteries, with early results showing improved capacity retention and dendrite reduction.

2022 progress was not just limited to research and development, with the signing of a number of significant collaboration agreements. Of note were our agreements with Insitu Boeing to develop batteries for its uncrewed aircraft systems and our partnership with Janus Electric to support the evolution of prime movers into electric vehicles. Since the end of the 2022 Financial Year we have added the eAviation company, Magnix as another our significant collaboration partner.
In our IPO prospectus we set out our five development priorities for our first 12 months as a listed company, namely:

1. Lithium sulphur battery optimisation and production of multi-layer cells
2. Li-nanomesh anode protection for a range of battery chemistries
3. Pilot cell production in our Deakin University facilities via our new Phase 2 facility
4. Retrofitting batteries into products, exemplified by the drone flights utilising our cells
5. Modelling and simulation is ongoing to better understand the performance of our batteries and reduce testing times, critical for OEM support

Over the last 12 months we delivered on all these priorities, in spite of the ongoing challenges of the pandemic through an extended lock down in Victoria in late 2021 and the ongoing global supply chain disruption. We have also taken advantage of additional opportunities as they have arisen, including:

- Consideration of additional growth opportunities, both organic and inorganic. In particular, we have identified our clear competitive advantage in providing batteries for drones and heavy vehicles (e.g. prime movers and mining) and have deepening partnerships in both areas
- Extending our investment in safe and novel electrolyte compositions with a plan to incorporate a semi-solid-state electrolyte into our batteries in the near future
- Leveraging our outstanding lab results to access industrial and research opportunities in Europe, including the Fraunhofer Institute in Germany
- LIS has joined the Future Battery Industry CRC giving it access to leading researchers and partners across Australia and is also a foundational industry partner in the Deakin Recycling and Renewable Energy Commercialisation Hub as part of the Commonwealth Trailblazer University program that should result in close to $5 million of additional funding over its four years.

Research and Development

Our two world class research teams at Deakin University led by Professors Ian Chen and Maria Forsyth continue to lead our core research program and they have made great progress over the year, going from single layer pouch cells to ten layer cells and finally twenty layer cells. This will allow LIS to move into the next generation of semi- solid-state LIS battery development, which we expect to yield even higher energy density and cycle life with applications in multiple industries.

As we discussed in our prospectus, the LIS research and development program is designed to provide a path to deliver Li-S Energy Batteries, materials and intellectual property to market and has the following four primary goals that we are progressing against:

1. Further optimise LIS technology

During FY22 we commenced testing 10-layer lithium sulphur cells with BNNT and Li-nanomesh, having successfully completed our 4-layer cell testing earlier in the year. During FY23 we will continue to test 10-layer cells, and to build and test 20-layer cells.

2. Produce Li-S Energy Batteries in pouch, cylinder and flexible battery formats

Having assessed the detailed requirements of our target industries, we are focusing our development strategy on the production of cells in the pouch cell format given its flexibility to scale to large battery packs for commercial use.

Pouch cells also offer the potential for higher cell gravimetric energy density as we can minimise “inactive materials” such as the weight of cell casings & electrodes.

3. Build pilot production line, manufacture batteries and prove their benefits in commercial products with commercial partners

During FY22 we recognised that we needed to enhance our ability to produce larger numbers of multi-layer test cells more quickly, in advance of building our planned initial pilot production line. As a result, we re-engineered our cell production plan to include a second phase of lab scale production to sit between our research production and automated pilot line. We are currently in the process of commissioning this Phase 2 capability in new labs on the Deakin campus outside Geelong with the pilot phase also being procured for delivery and installation through the year into our 2MWh Phase 3 facility.

4. Develop intellectual property on how lithium-ion battery manufacturing plants can be adapted to produce Li-S Energy Batteries

Our Phase 3 production line is the key infrastructure we expect to drive the process of examining lithium-ion cell manufacturing equipment and how it can be practically modified to suit the manufacture of Li-S Energy lithium sulphur and lithium metal cells. Additional IP may be identified during this process that could provide further value to the Company.

We also remain alert for complementary ventures, technologies, facilities and acquisitions in the broader battery space that have the potential to deliver benefits in terms of technology or market access. In all cases, the Board will assess such opportunities against strategic alignment and the overall potential to create shareholder value.

Shareholder support

The last 12 months have being a challenging period for the public equity markets and LIS is no exception. However, we continues to be grateful for the support of all of its shareholders. Not only the foundational shareholders, PPK Group Limited, Deakin University and BNNT Technology Limited but also those investors that supported our primary raise through the IPO.

This capital has ensured that not only can the company fund its ongoing development work, but also retained a healthy balance sheet This gives us the strategic flexibility to continue to invest in and develop opportunities as they arise.

I will now hand over to the CEO, Dr Lee Finniear to give you a company update and discuss some of the recent exciting developments at LiS Energy. Thank you.

Company **update**

CHIEF EXECUTIVE OFFICER

Li-S Energy

Our market **opportunity**

The Passenger and Heavy EV markets are growing exponentially, offering a huge opportunity for Li-S Energy

PASSENGER EVs

- 52M PEVs sold per year by 2035*
- Total annual battery market in this sector by 2035 – US$309B**

HEAVY EVs

- 1M HEVs sold per year by 2035#
- Total annual battery market in this sector by 2035 – US$110B##

* Source IDTechEX Report : Electric Vehicles: Land, Sea & Air 2022-2042

** Based on av. 70KWh average per vehicle @ $85/KWh

IDTechEx Report Electric Vehicles: Land, Sea & Air 2022-2042 - includes heavy trucks, buses, & construction

Based on av. 650KWh battery per vehicle plus 1 spare on swap recharge @ $85/KWh

Our market **opportunity**

Li-S Energy cells are highly differentiated for drones and electric aviation – markets where the most energy dense cells are projected to command 5-10 times the price of normal EV cells[##]

DRONES

- Drone market size by 2027 = US$61B[#]
- 67% fixed wing > 5kg payload
- Est. annual battery market pa by 2027 = US$12B

eAVIATION

- Commercial passenger eAircraft sold per year by 2035 = 15,000*
- Annual battery market pa by 2035 = US$20B

Source Precedence Research – Unmanned Aerial Vehicle (UAV) Drones Market 2022 – 2027
Source IDTechEX Report: Solid-State and Polymer Batteries 2021-2031

* Source IDTechEX Report : Manned Electric Aircraft: Smart City and Regional 2021-2041

** based on an estimated average pack size of 1500KWh @ $900 per KWh

Lifting off with **magniX & NASA**

magniX is a global leader Electric Aviation Propulsion

- Li-S Energy signed an MoU with magniX USA Inc. to develop and test Li-S and Li-metal cells for electric aviation
- MagniX has a range of electric aircraft already flying including a Robinson R44 Helicopter
- MagniX is one of only two companies chosen by NASA to demonstrate electric aviation propulsion (EAP) technologies, winning a US$74 million NASA contract
- NASA seeks to introduce EAP technologies to U.S. aviation fleets no later than 2035
- We are working with magniX to specify test and trial battery cells that, once produced we expect magniX to purchase from us for testing

Our industry **partners**

By initially selecting one pioneering company in each target market, we are tailoring our batteries to meet industry specifications, while gaining a greater understanding of the market requirements as a whole

Heavy EVs

JANUS ELECTRIC

Janus Electric converts heavy vehicles from diesel to electric. We are building and testing cells to substantially extend HEV range

Commercial drones

INSITU
A Boeing Company

Boeing InSitu is partnering with us to build and test lightweight long-range batteries for Boeing surveillance drones

e-Aviation

magniX NASA

MagniX is working with NASA on a US$74M electric aircraft program. We are working with magniX to build & test our ultra-lightweight batteries for their projects

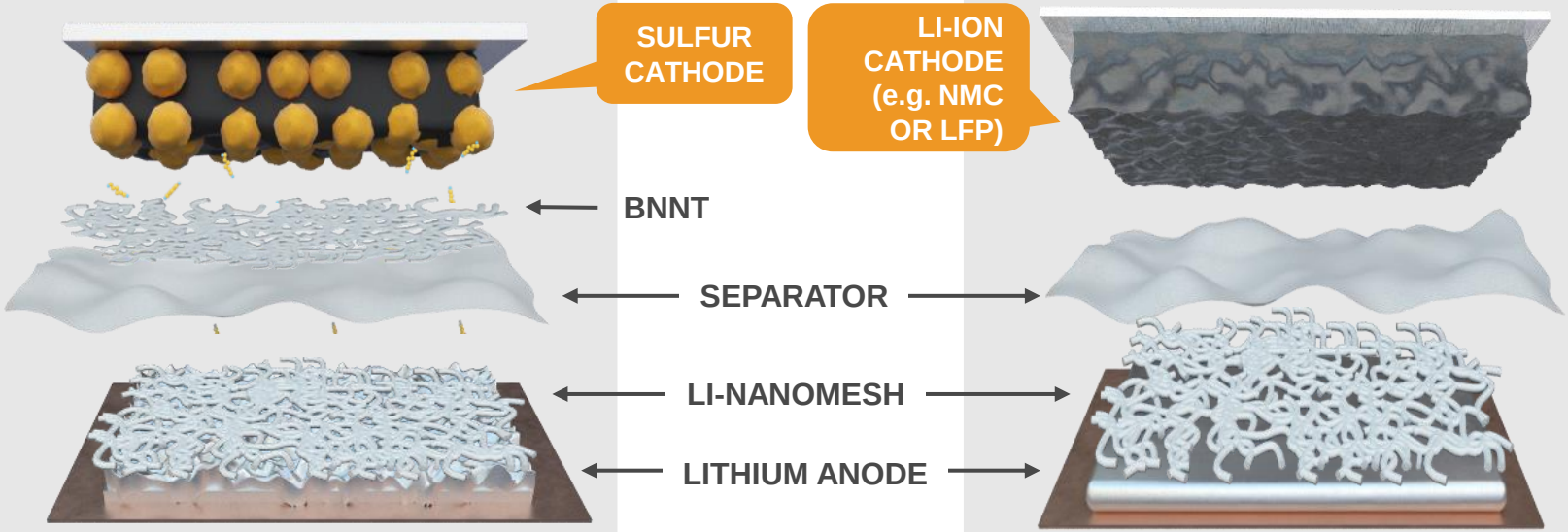
Passenger EVs

Under NDA

We continue to develop collaboration opportunities with passenger EV manufacturers

Two new cell **technologies**

Our latest research results indicate that Li-nanomesh enhances lithium metal cell performance. This has the potential to expand our target markets to deliver both Li-S cells and Li-metal cells to a wider range of product types.



Lithium sulfur

More than twice the gravimetric energy density of lithium ion (Wh/kg)*

Lithium metal

Higher Power (W/kg) and higher volumetric energy density (Wh/l)

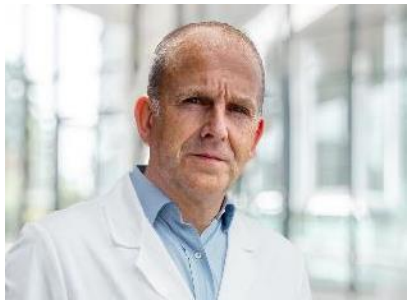
Cell type	Li-ion	Li-metal	Li-S
Weight	✓	✓✓	✓✓✓
Energy stored/kg	✓	✓✓	✓✓✓
Energy stored/litre	✓	✓✓✓	✓✓
Power output	✓✓✓	✓✓✓	✓

**compared to Panasonic NCR18650BD li-ion cell at 217 Wh/kg – Source Panasonic website*

Our leadership **team**

CORE LEADERSHIP

Dr Lee Finniear
CEO



Dr Steve Rowlands
CTO

Heather Swinson
Senior Marketing Manager

Andrew Davies
Financial Controller

Tim Hanley
Operations & Facilities Manager

SPECIALIST SUPPORT

Glenn Molloy
Chief Strategic Advisor

Will Shiel
Company Secretary &
Legal Counsel

Ken Hostland
CFO

Prof. Ian Chen
Deakin University

Prof. Maria Forsyth
Deakin University

Cell scale up **process**

Phase 3 is essential for delivering quality test cells for our partners — with each trial requiring up to 10,000 cells

PHASE 1
Proving the science

coin cell

single layer pouch

4-layer pouch

PHASE 2
Scaling cell size

10-layer pouch

20-layer pouch

PHASE 3
Scaling output to meet demand

A-sample cell

Lab based cells built by hand

ONGOING R&D CAPABILITY

- Ideal for R&D, materials characterisation and proving core technology
- Electrodes produced in small quantities using benchtop coaters
- Testing straightforward as small cell capacities are being tested

Advanced micro-production line

INSTALLATION COMPLETE

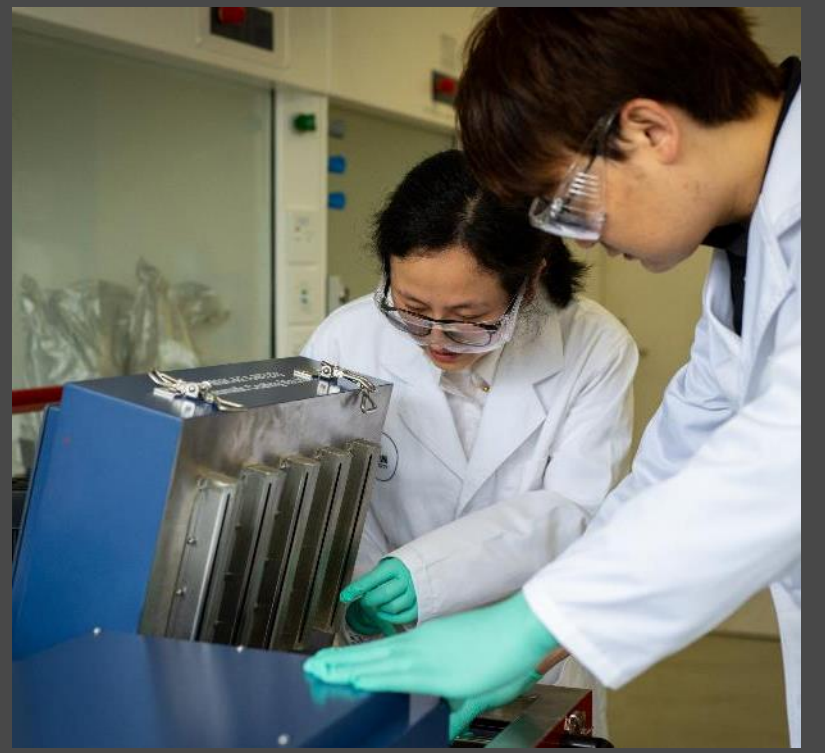
- Allows for high quality multi-layer cells needed for initial partner test cells
- increases cell performance, reliability & energy density
- Automation improves consistency of electrode coating & accuracy of cell stacking
- Cells produced using larger materials handling, slurry mixers, roll to roll cathode coaters and automated electrode stackers

2MWh Production

DESIGN & PROCUREMENT IN PROGRESS

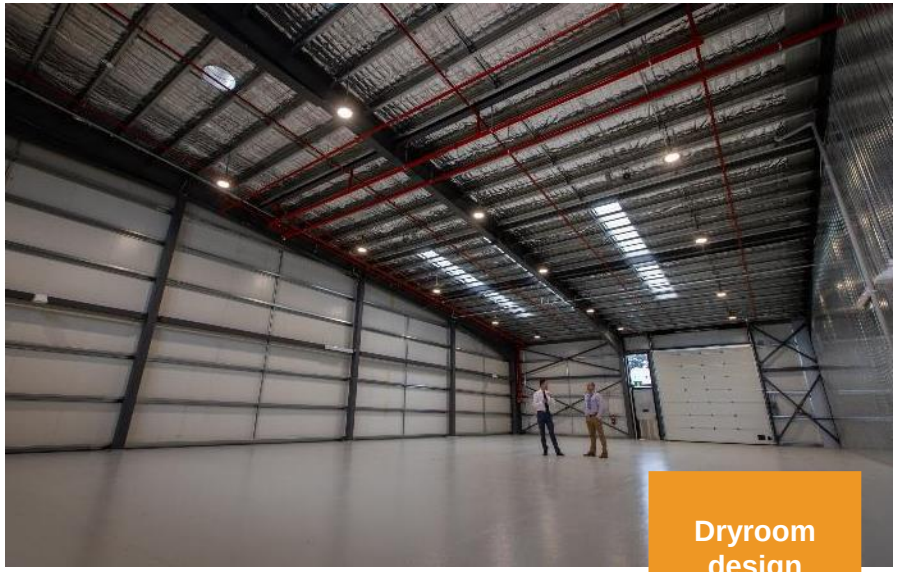
- Will allow production of larger number of uniform, high-quality A-sample cells for partner trial battery packs
- Delivers a 2MWh production facility including a 220 sqm dry room with larger cathode coater, plus additional automation for anode & cathode cutting, stacking, pouching & sealing
- This is also expected to assist proving up manufacturability at scale by providing battery manufacturing data, cost & throughput

PHASE 2
Scaling cell size



Space being acquired

PHASE 3
Scaling output to meet demand



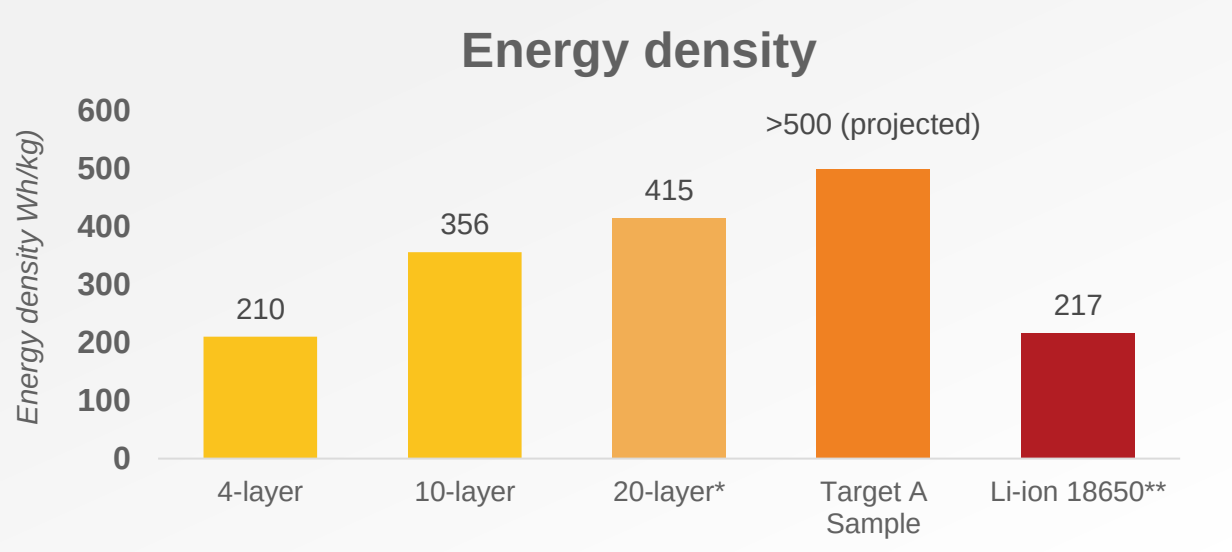
Dryroom design

PHASE 3 FACILITY DESIGN

Walk-through

Li-S cell **scale up results**

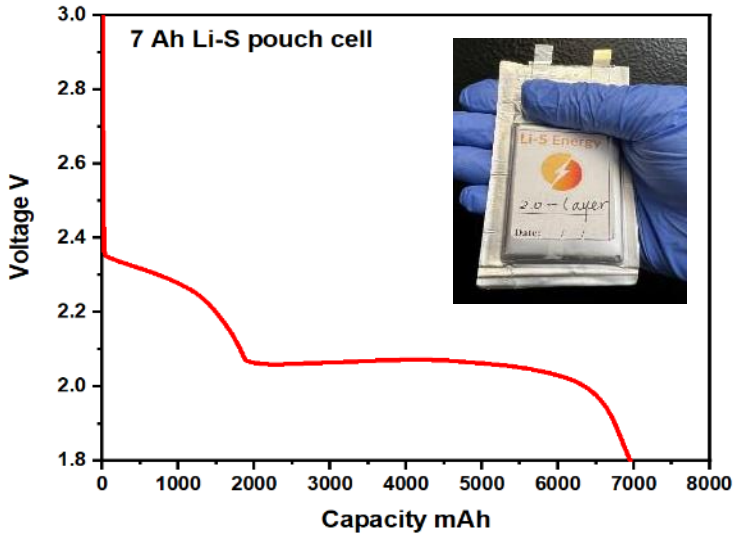
- 4, 8 and 10-layer cells hand-built using Phase 1 equipment – goal was to optimise cathode, BNNT and Li-nanomesh materials
- We increased cell total energy capacity by 400% through materials & construction optimisation
- Testing shows BNNT & Li-nanomesh continuing to extend cycle life
- Our first 20-layer cell initial discharge cycle demonstrates an energy density exceeding 400Wh/kg*, with optimisation we expect to target 500Wh/kg**



10-layer Li-S cells continue to demonstrate enhanced cycling performance with BNNT protection

Phase 1 (hand built) Li-S cells now approaching 400Wh/kg

Now targeting life cycle testing on a larger 20-layer cell with > 400Wh/kg energy density



**20 layer cell initial discharge capacity – tests ongoing*

***example comparison - Panasonic NCR18650BD li-ion cell at 217 Wh/kg (excluding weight of cell tube casing) – Source Panasonic website*

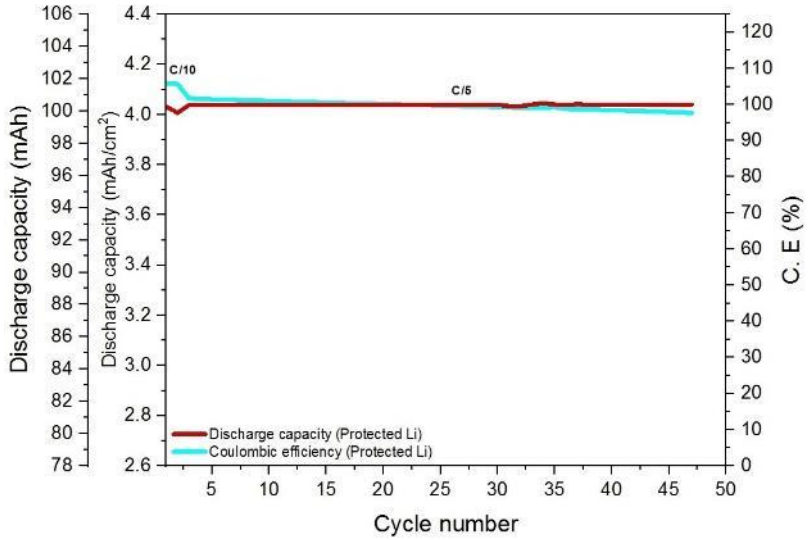
DRONE FLIGHT

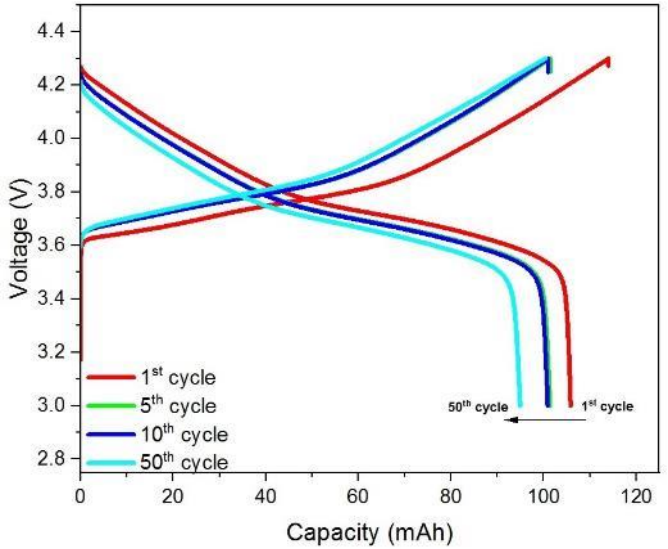
Deakin University

Li-metal **cells**

- Built and tested single layer and 4-layer Li-metal pouch cells with Li-nanomesh protection
- Both single layer and 4-layer cells showing excellent cycling stability
- Coulombic efficiency and capacity retention at almost 100% after 48 cycles – testing is continuing

Li-metal cells with Li-nanomesh showing high coulombic efficiency and capacity retention



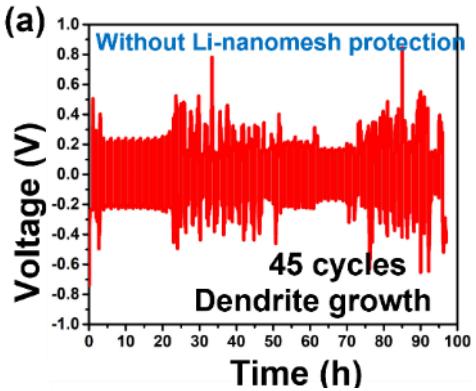


Protocol:
CC charge – 4.3V cut-off
CC discharge – 3.0V cut-off
C/10 for 2 cycles, C/5 for all

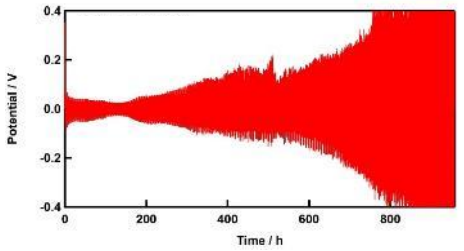
Li-nanomesh **optimisation**

- Li-nanomesh is our patented nano-composite that mitigates dendrite formation on lithium metal anodes
- A substantial R&D project was completed to optimise the thickness (mass loading) and composition of the Li-nanomesh to deliver the best protection
- An optimum coating was developed where the material was most effective

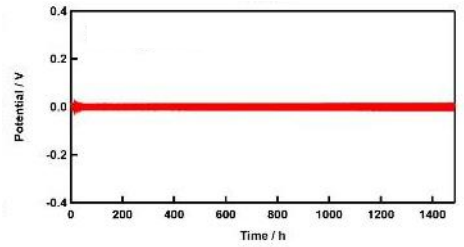
Overpotential (voltage) spikes on the graphs indicate dendrite formation



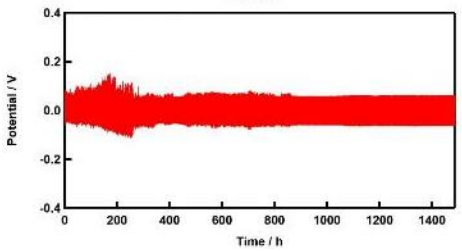
Unprotected



Low loading



Ideal loading



High loading

These results not only illustrate the potential of Li-nanomesh in mitigating dendrites, but the precise loading and composition needed to max imise this protection

Scaling techniques for **manufacture**

We are working with Fraunhofer IWS in Dresden, Germany to develop techniques to scale our electrode cutting and nanomaterial coating technologies to enable mass manufacturing.

- Fraunhofer is one of the world's leading applied research organisations, with more than 30,000 employees
- Fraunhofer IWS are specialists in laser technologies and battery materials coating processes
- Perfecting our nanomaterial coating techniques now is expected to drive down the cost and accelerate time to market

Delivering our technology at scale is central to a rapid commercial outcome

Partnering with the best in the world is key to accelerating our technology into mass manufacture

Delivering on IPO **objectives**

Program: IPO		ACHIEVEMENT SINCE IPO
YEAR 1		
Commence optimising single and multi-layer Li-S Energy batteries	✓	4 &10 Layer cells built and tested, materials optimised
Retrofit batteries into one or more products (e.g. a drone)	✓	Drone flights
Commence construction of a pilot production facility aiming to increase the number, capacity and consistency of test Li-S Energy batteries that can be produced	✓	Phase 2 facility being commissioned, Phase 3 in design & procurement
Enter into collaboration agreements with one or more product OEMs	✓	Careful selection of a pioneering partner in each industry sector
Commence additional projects on solid state batteries, 3D printed batteries and flexible form batteries		Focused on Li-Metal Batteries. R&D on Quasi-solid-state and solid-state cells is now underway
Progress R&D on Li-nanomesh to establish the extent to which it can be designed to prevent dendrites on metal anodes	✓	Extensive development for Li-metal cells

New **website**

Subscribe to stay up to date on our progress, articles, videos and announcements

Visit www.lis.energy