Lithium Universe LIMITED
Building a Lithium Future

ASX ANNOUNCEMENT AND MEDIA RELEASE

18 September 2025

LU7 REPORTS HIGH PURITY SILVER EXTRACTED FROM JET ELECTROCHEMICAL EXTRACTION (JESE) AND DEPOSITION TECHNOLOGY

Highlights

- Positive results from its advanced silver recovery program using the proprietary Jet Electrochemical Silver Extraction (JESE) method
- 95.95% silver purity within just five minutes of deposition process
- Comparable to Britannia-grade silver - high-quality alloy above sterling grade
- Significantly higher than conventional (Bath) recovery methods
- JESE produced a low impurity profile of only 4.05%, with aluminium (1.93%) and oxygen (1.13%) as the main contaminants; heavy metals such as lead and bismuth remained very low
- Conventional bath extraction yielded only 78.63% silver content with far higher aluminium (11.40%) and oxygen (8.41%) impurities
- With previously reported silver recovery of 95% recovery in 30 minutes
- Results confirm key proof-of-concept milestones: strong recovery rates, high-purity silver deposition
- Tests confirm JESE offers lower energy demand, reduced acid consumption, and substantially less waste generation
- Next step is optimisation studies to refine operating parameters and further enhance silver purity

Lithium Universe Limited (ASX: LU7, "Lithium Universe" or "the Company") is pleased to report further highly encouraging results from its ongoing research into advanced silver recovery techniques. Recent trials using the proprietary Jet Electrochemical Silver Extraction (JESE) recovery method have successfully produced silver of **exceptional purity** within a very short processing time, reinforcing the potential of this technology to deliver significant commercial and environmental benefits. The JESE process yielded silver at a purity level of **95.95%**

(Ag %w/w) which is comparable to **Britannia-grade silver**, which is historically recognised as a high-quality alloy.

TEST PROGRAM

The test program, undertaken by LU7's partner Macquarie University under the direction of Dr. Binesh Puthen Veettil and Dr. David Payne, employed precision laser-cutting of solar silicon cells to expose busbars and silver fingers characteristic of photovoltaic metallisation. JESE applied a controlled 5 V potential across the wafer and jet, dissolving silver into nitric electrolyte as silver nitrate. Reverse electrochemical deposition recovered the dissolved silver onto a substrate, which was then analysed for recovery efficiency, uniformity, impurities, and purity. For benchmarking, a conventional bath deposition method was also performed.

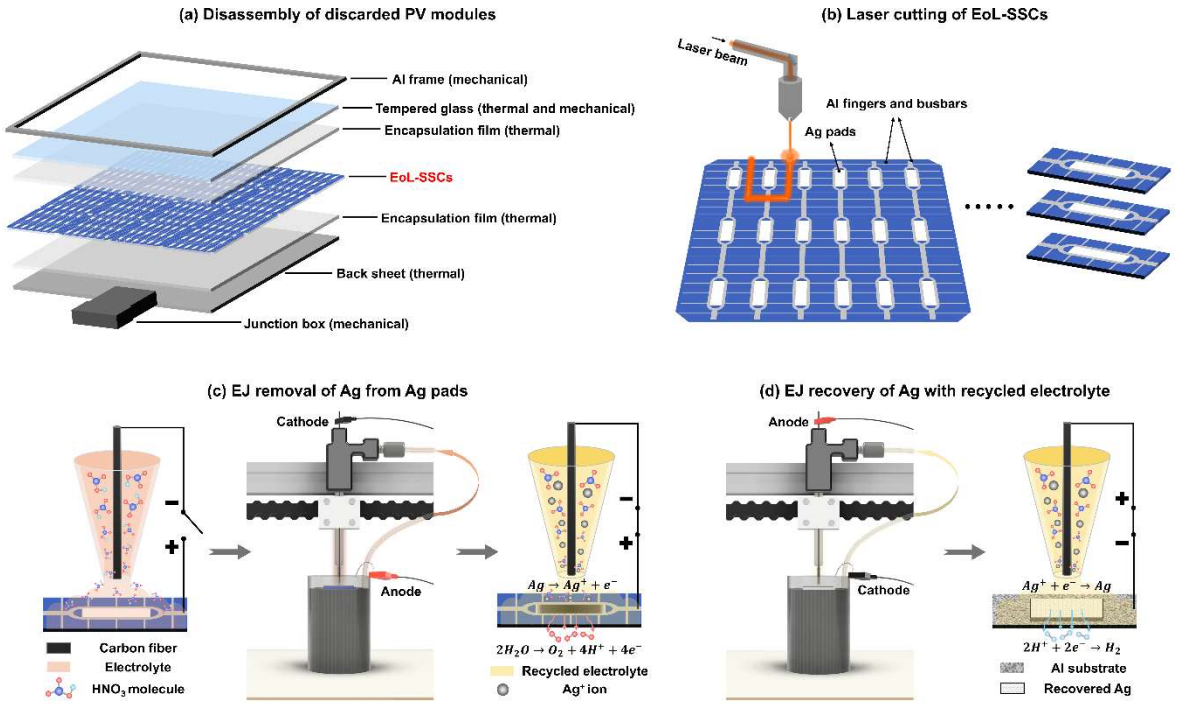

Figure 1 – Summary of Test Program

EXCEPTIONAL SILVER PURITY ACHIEVED

In a five-minute deposition trial, the JESE process yielded silver at a purity level of **95.95% (Ag %w/w)**. Typical hydrometallurgical or pyro routes often require multi-stage purification to approach this level. This result demonstrates the technology's ability to selectively recover silver with minimal contamination from associated metals from the silicon wafer. Importantly, this high level of purity was achieved under mild operating conditions, highlighting the process efficiency compared with conventional bath recovery/deposition approaches. This positions the recovered material in line with Britannia-grade silver, which is historically recognised as a high-quality alloy above sterling grade (92.5%) and below investment-grade bullion (99.9%). While further refinement can easily elevate purity to 99.9% or higher using conventional electrorefining techniques, the achievement of near-Britannia purity in a first-pass recovery is highly significant. In practice, the recovered material could be

sold directly into these applications or serve as high-grade feedstock for bullion refiners, who can readily upgrade the purity to 99.9% using established melting and electrorefining circuits.

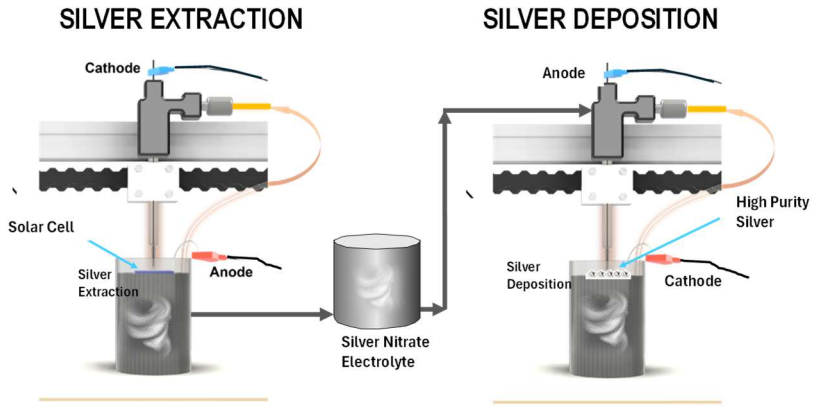

Figure 2 – Silver Extraction and Silver Deposition Process

LOW IMPURITY PROFILE

The analysis shows that the total impurity content in the recovered silver is just **4.05%**, markedly lower than the **21.37%** impurity level measured in conventional E-bath recovery/deposition trials conducted over the same five-minute timeframe. See Table 1. The primary impurities observed in the JESE output were:

- **Aluminium (1.93%)** – the largest single impurity, likely originating from solar cell busbar material.
- **Oxygen (1.13%)** – associated with minor surface oxidation during recovery.
- **Other trace elements** including titanium (0.15%), bismuth (0.28%), lead (0.21%), copper (0.14%), and very small amounts of manganese, zinc, silicon, and chlorine (all ≤0.08%).

The data confirms that heavy metal impurities such as lead, and bismuth remain exceptionally low. Equally important, the process effectively suppresses aluminium and copper co-dissolution/deposition compared to conventional techniques, simplifying downstream refining and lowering processing costs.

COMPARISON WITH CONVENTIONAL E-BATH RECOVERY

The benchmarked **E-bath recovery/deposition method** produced only **78.63% silver content** after the same five-minute trial, with significantly higher aluminium (11.40%) and oxygen (8.41%) contamination. This underscores the superior selectivity of the JESE process, which more than doubles the purity advantage while maintaining operational simplicity. See Table 1.

Table 1 – Purity of Recovered Silver of Both Methods

Reverse EJ Recovery (5 min)

Element	Content (%w/w)	Element	Content (%w/w)
Ag	95.95	Mn	0.05
Al	1.93	Zn	0.01
Ti	0.15	Si	0.02
Bi	0.28	Cl	0.08
Pb	0.21	O	1.13
Cu	0.14	Total Impurities	4.05

E-bath Recovery (5 min)

Element	Content (%w/w)	Element	Content (%w/w)
Ag	78.63	Mn	0.09
Al	11.40	Zn	0.06
Ti	0.20	Si	0.05
Bi	0.37	Cl	0.10
Pb	0.34	O	8.41
Cu	0.35	Total Impurities	21.37

PREVIOUS SILVER RECOVERY RESULTS

The previous test campaign (announced on 4 Sept 25) confirmed the high effectiveness of JESE in extracting silver from solar cell contacts. In just seven minutes, the process achieved a recovery rate of **90.2%**, while extending the treatment to thirty minutes delivered **over 95% recovery**. Notably, these results were obtained under mild operating conditions, using only dilute nitric acid and a low applied voltage of 5 V, underscoring the exceptional efficiency of the method. With both strong recovery rates and now the demonstration of high-purity silver deposition, the key proof-of-concept milestones have been successfully achieved, marking a highly positive outcome.

COMMERCIAL AND TECHNICAL SIGNIFICANCE

These findings demonstrate that the JESE method can consistently deliver near-commercial grade silver in a single recovery step. By substantially reducing the impurity burden, this process will minimize the need for intensive secondary purification, cutting costs and improving overall yields. In addition, the shorter process time translates into higher throughput potential, supporting scalable industrial adoption.

From a sustainability perspective, the low-impurity profile means less chemical consumption in downstream refining and reduced waste generation, further strengthening the environmental credentials of the technology. Given that silver is the single most valuable recoverable element in end-of-life photovoltaic modules, these results are a critical step in validating the economic feasibility of large-scale solar panel recycling.

NEXT STEPS

Building on these promising results, LU7 and the Macquarie University team will continue optimisation studies to refine operating parameters and further enhance silver purity. Larger-scale pilot tests are planned to validate the performance under continuous operating conditions. These trials will also examine the recovery efficiency for other high-value metals, supporting the Company's broader goal of establishing a comprehensive recycling solution for the solar industry.

EXECUTIVE COMMENTARY

LU7 Executive Chairman, Iggy Tan, stated: "*The achievement of over 95% silver recovery with near-Britannia 95.95% purity in such a short timeframe is a game-changer. JESE delivers efficiency, sustainability, and high commercial value, positioning Lithium Universe at the forefront of advanced solar recycling technologies while unlocking significant opportunities in the global circular economy.*"

Authorised by the Chairman of Lithium Universe Limited

Lithium Universe Interactive Investor Hub

Engage with Lithium Universe directly by asking questions, watching video summaries and seeing what other shareholders have to say about this, as well as past announcements, at our Investor Hub https://investorhub.lithiumuniverse.com/

For Information:

Iggy Tan
Executive Chairman
Lithium Universe Limited
Email: info@lithiumuniverse.com

ABOUT LITHIUM UNIVERSE LIMITED

Lithium Universe Limited (ASX: LU7) is a forward-thinking company on a mission to close the "Lithium Conversion Gap" in North America and revolutionize the photovoltaic (PV) solar panel recycling sector. The company is dedicated to securing the future of green energy by addressing two major strategic initiatives: the development of a green, battery-grade lithium carbonate refinery in Québec, Canada, and pioneering the recycling of valuable metals, including silver, from discarded solar panels.

Lithium Strategy: Closing the Lithium Conversion Gap

Lithium Universe is at the forefront of efforts to meet the growing demand for lithium in North America. As electric vehicle (EV) battery manufacturers prepare to deploy an estimated 1,000 GW of battery capacity by 2028, the need for lithium is expected to rise dramatically. However, with only a fraction of the required lithium conversion capacity in North America, LU7 is determined to play a pivotal role in reducing dependence on foreign supply chains. The company is building a green, battery-grade lithium carbonate refinery in Bécancour, Québec, leveraging the proven technology developed at the Jiangsu Lithium Carbonate Plant. This refinery will produce up to 18,270 tonnes per year of lithium carbonate, focusing initially on the production of lithium carbonate for lithium iron phosphate (LFP) batteries. The refinery's smaller, off-the-shelf plant model ensures efficient operations and timely implementation, positioning LU7 as a key player in the emerging North American lithium market. With a strong leadership team, including industry pioneers like Chairman Iggy Tan, LU7 is well-positioned to deliver this transformative project. The company's strategy is counter-cyclical, designed to build through the market downturn and benefit from the inevitable recovery, ensuring sustained exposure to the growing lithium demand.

PV Solar Panel Recycling Strategy: Silver Extraction

As the global demand for solar energy expands, solar panel waste is projected to reach 60–78 million tonnes by 2050, making efficient recycling solutions critical. Lithium Universe has responded by acquiring Macquarie University's Microwave Joule Heating Technology (MJHT) and Jet Electrochemical Silver Extraction (JESE) method, a breakthrough in recovering valuable metals from end-of-life PV panels.

Recent laboratory trials confirmed JESE's exceptional efficiency, achieving more than 95% in 30 minutes, under mild conditions of 5 V and dilute nitric acid Crucially, the process preserves intact silicon wafers, creating secondary value streams for reuse in solar-grade or nano-silicon applications. Equally significant, JESE has demonstrated high-purity silver recovery. Tests yielded 95.95% silver purity within five minutes—comparable to Britannia-grade silver, a premium alloy above sterling (92.5%) and close to bullion standard (99.9%)

Impurities were limited to just 4.05%, with aluminium and oxygen as the main trace elements, far outperforming conventional bath recovery, which produced only 78.6% silver with over 21% impurities. With silver demand surging in solar and electronics, LU7's technology offers a timely, sustainable, and commercially attractive solution. Looking ahead, the Company plans to expand recovery to other critical metals, further strengthening its role in the global circular economy.

Lithium Universe is committed to ensuring that both its lithium and PV solar recycling strategies help meet the world's growing demand for clean energy, while offering a sustainable solution to the challenges of resource scarcity and waste management.