4 OCTOBER 2022 ASX ANNOUNCEMENT ASX: EGR

Further Positive Results for Enhanced HPA Anode Coatings

Increased Performance from HPA Enhanced Polyolefin Separator for Lithium-ion Battery Market

Diversified battery anode materials company **EcoGraf Limited** (**EcoGraf** or the **Company**) (ASX: **EGR**; FSE: **FMK**; OTCQX: **ECGFF**) is pleased to announce with FYI Resources Ltd (ASX:FYI) further positive results from its Enhanced High Purity Alumina (HPA) anode coatings development program.

Key Highlights

- **Electrochemical performance of the FYI enhanced HPA coated anode in lithium-ion coin cells in excess of 110 continues cycles has achieved near theoretical capacity and outperformed industry standard industry materials**
- **Testwork demonstrates performance increases achieved from additional concentrations of FYI's HPA combined with EcoGraf's graphite**
- **Positive results from the application FYI HPA being applied to the polyolefin separators showing a further improvement of 7.94 mAh/g reversible capacity**
- **Independent electrochemical testwork underway with partners and battery manufacturers**
- **Further advanced testwork underway pairing the enhanced HPA anode with HPA coating on polyolefin separator**

An extended lithium-ion battery electrochemical performance test program to cover in excess of 110 continues cycles is now completed to assess the long-term cycling characteristic of the HPA enhanced battery system.

The results have seen near theoretical capacity of 366 mAh/g at 6-7% irreversible capacity loss after 110 continuous charge-discharge cycles.

This is an impressive level of electrochemical performance which allows to put this enhanced HPA coated material into a limited size cohort of super-premium anode materials.

Below is the comparation table showing the long cycle performance test compared to industry standard material.

Anode Materials	Cycles	Reversible Capacity	Irreversibility Loss%
Enhanced HPA Coated Anode	110	366 mAh/g	6-7%
Standard Industry Material	110	340 mAh/g	>6%

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The latest testwork also confirm additional concentrations of the FYI HPA dopant will lead to further improvements; however the final optimum loading will need to be determined.

As previously reported, initial performance of the FYI HPA-doped coated anode with the reversible capacity reporting 362.7 mAh/g and the first cycle loss was 4.5% which also outperformed industry standard material (refer announcement dated 9 February 2022).

The Company is also pleased to report the results of FYI HPA being applied to the polyolefin separators. Initial evaluation of a HPA enhanced polyolefin separator has shown a further improvement of 7.94 mAh/g reversible capacity to the industry standard material when paired with the enhanced HPA polyolefin separator.

Given the positive result, the next test is to pair the FYI HPA enhanced separator with the FYI HPA-doped EcoGraf's coated anode with the reversible capacity of 362.7 mAh/g. If a similar improvement is seen as the industry standard material of 7.94 mAh/g, then the reversible capacity would eventually near theoretical reversible capacity of 372 mAh/g.

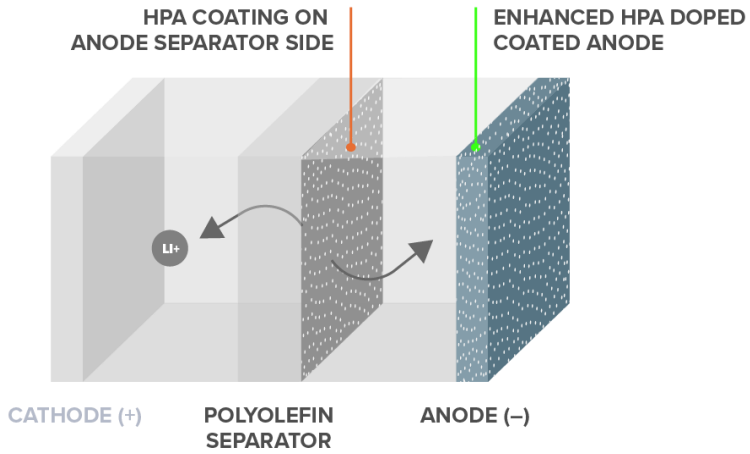
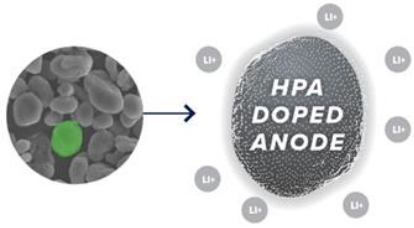


Figure : *Lithium-ion battery showing the enhanced HPA doped coated anode and HPA particles on the polyolefin separator.*

Polyolefin separators composed of polyethylene and polypropylene have emerged as the separators of choice in commercial lithium-ion batteries. Polyolefin separators play a major role to prevent physical contact between the anode and cathode, while facilitating lithium-ion transport in the cell.

The innovative HPA doped carbon coating technical program is being undertaken in a leading US commercial battery material research facility using EcoGraf's graphite and FYI's innovative ultrafine 4N HPA to generate a HPA-doped coated anode. Doping is the introduction of HPA onto the carbon coated anode material.

Observations from the testwork, confirm the HPA is acting as a hydrophobic reductant which promotes the lithium ions chemistry with the carbon anode. This absorption characteristic ensures that at any given point of time the graphite particle surface is hydrophilic thus allowing all carbon anode material to participate in the Li ions intercalation and electrochemical process.



Significant market opportunity in the US and Europe with demand expected to grow 30%pa with sales price reported by leading industry research group BMI Research for coated anode ranges between US$5,000 to US $10,000 per tonne with premium coated anode commanding higher prices (refer https://www.benchmarkminerals.com).

This announcement is authorised for release by Andrew Spinks, Managing Director.

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About EcoGraf

EcoGraf is building a vertically integrated battery anode materials business to produce high purity graphite products for the lithium-ion battery and advanced manufacturing markets. Over US$30 million has been invested to date to create a highly attractive mining and mineral processing graphite business.

In Tanzania, the Company is developing the **TanzGraphite** natural flake graphite business, commencing with the Epanko Graphite Project, to provide a long-term, scalable supply of feedstock for the EcoGraf™ battery anode material processing facilities, together with high quality large flake graphite products for industrial applications.

Using a superior, environmentally responsible EcoGraf HF*free*™ purification technology, the Company plans to produce high performance battery anode material to support electric vehicle, battery and anode manufacturers in Asia, Europe and North American as the world transitions to clean, renewable energy. In addition, EcoGraf's breakthrough recovery of battery anode material using its EcoGraf™ purification process will enable battery supply chain customers to reduce their CO_2 emissions and lower battery costs.

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