QUANTUM GRAPHITE

MARKET RELEASE
For Immediate Release
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Successful Completion of INEMET Test Work Program on Uley Flake Based Energy Storage Media

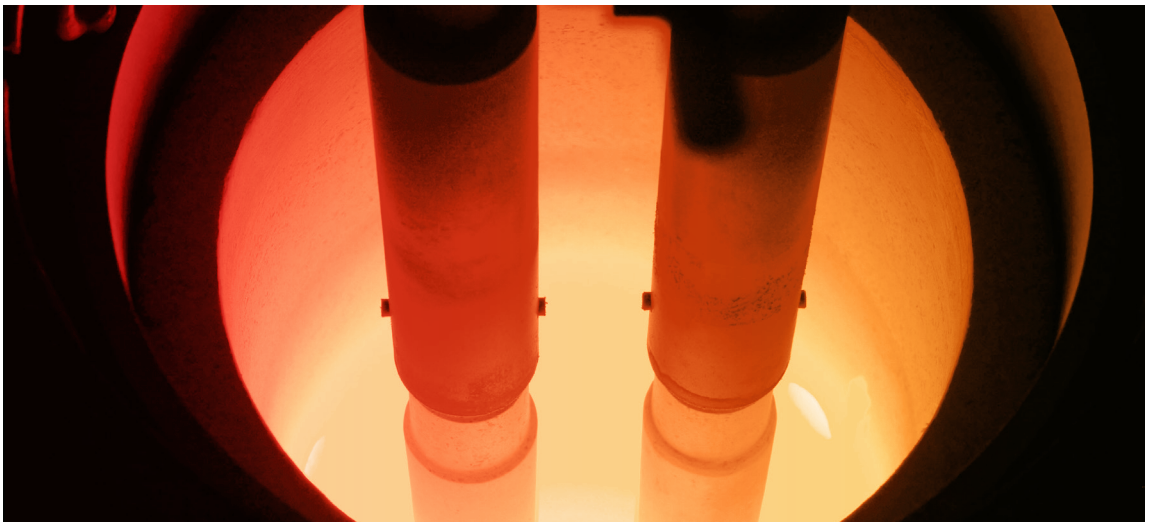
Proved Thermal Performance of Media

Excellent Energy Storage Capability Demonstrated at Temperatures to 2200°C

The Company announces today the successful completion and results of the test work program undertaken at INEMET at TU Freiburg. This program tested and conclusively measured the thermal performance of QSP's flake graphite-based storage media (**Uley Media**) under the same ultra-high temperature conditions of the long duration energy storage (**LDES**) battery developed by Sunlands Co. Uley Media is manufactured using Uley 2 flake products as one of the critical ingredients.

The results highlights of the test work are:

- **Heat storage capability** - Confirmation of the heat storage capacity and performance of Uley Media for Sunlands Co. LDES battery cells driving utility scale turbine generation facilities
- **High Performance** - Uley Media performs at substantially similar levels to that of high-grade isostatic products thereby significantly reducing the unit cost of LDES battery cells
- **Uniformity** - Uley Media performance is consistent across the purity and size fractions of Uley 2 flake products used to manufacture the media
- **Scale of Manufacturing** – The uniformity and performance of Uley Media enable QSP's manufacture of Uley Media to be undertaken at a far greater scale than anticipated
- **Purity** – the level of volatilisation of impurities within the Uley Media during the experimental program strongly suggests a material increase in purity and the potential viability of thermal purification of Uley 2 flake for the Li-ion battery anode market.



ABOUT QUANTUM GRAPHITE LIMITED

QGL is the owner of the Uley flake graphite mineral deposits located south-west of Port Lincoln, South Australia. The company's Uley 2 project represents the next stage of development of the century old Uley mine, one of the largest high-grade natural flake deposits in the world. For further information, qgraphite.com.

ABOUT THE QUANTUM SUNLANDS PARTNERSHIP

QSP is our joint venture with Sunlands Co. for the manufacture of coarse natural flake based thermal storage media. The flake will be sourced exclusively from the QGL's Uley mine. The manufactured media will be fitted within Sunlands Co.'s long duration energy storage cells. https://www.sunlandsco.com/

Company director David Trimboli and QSP Chairman, outlined the impact on QSP. “These results now settle the scope of QSP’s manufacturing of Uley Media blocks. The big news is the uniformity in the heat storage results. This enables QSP to achieve efficiencies of scale in the size and type of Uley Media blocks regardless of the configurations required by Sunlands Co. for its various LDES cells. Operationally the capability to utilise all the Uley 2 flake product range hands QSP significant operational control over the procurement process (e.g., timing, general market conditions etc.,) of Uley 2 flake inventory. ”

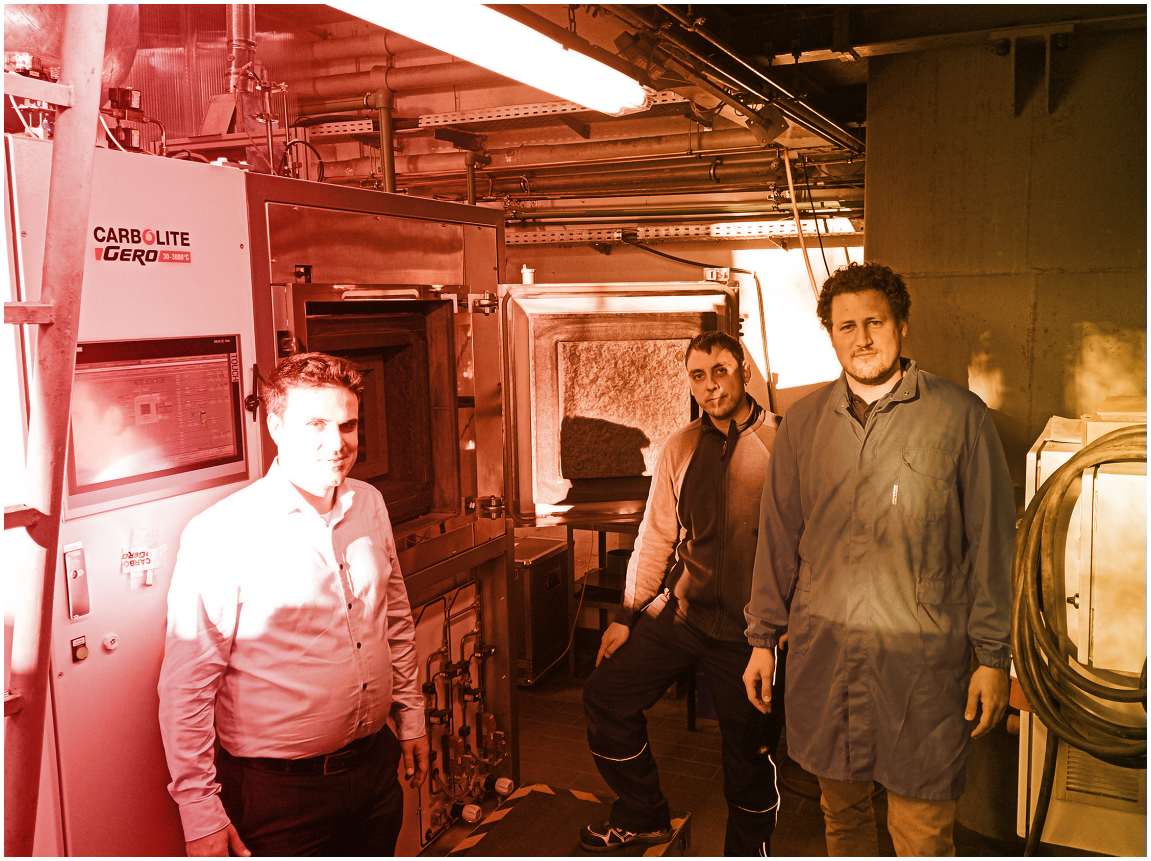
ProTherm Systems director, Dr Leon Koekemoer, explained two of the key advantages of the results of the test work program “The uniformity of the Cp values and resulting heat storage capacity and performance results provide QSP with obvious advantages in the scalable manufacture of Uley Media blocks. For Sunlands Co. this provides it with extraordinary scope in the design of various configurations of Uley Media blocks to meet diverse applications and deployments of LDES cells”.

The results will now feed into the final design and manufacture of the Sunlands Co. LDES pilot battery. Whilst this phase of the test work program has been completed, the data delivered by the INEMET experimental program will now be the subject of the next phase of test work aimed at assessing the viability of the thermal purification of Uley flake for the production of anode.

Methodology and Key Findings

INEMET’s Professor Alexandros Charitos supervised the program which generated a comprehensive data set from ambient temperature to 2200°C for the test work program designed by ProTherm Systems (Pty) Ltd and QSP.

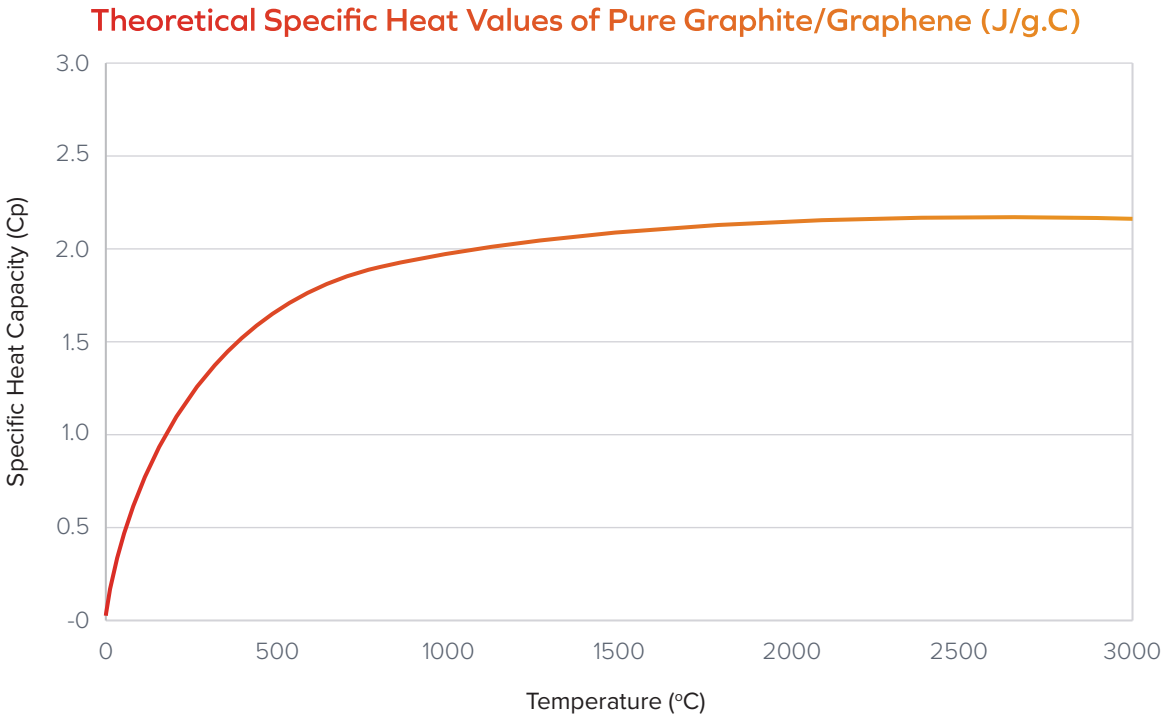
The data set provided the information necessary to calculate *the actual specific heat capacity at constant pressure (Cp)* of Uley Media. Cp measures the quantity of heat required to raise the temperature of a unit mass of Uley Media by 1°.



From left to right: Prof. Dr. Alexandros Charitos INEMET Director and Professor for high temperature processes in metallurgy, Mr Thomas Kraft INEMET technician and Mr Ludwig Blenau INEMET Research Associate and PhD candidate.

The Cp of Uley Media is the essential thermal characteristic that determines the size of the Heat (storage) Capacity of the Uley Media block and thereby the size and configuration of the block that must be installed within Sunlands Co.'s LDES cell to meet a given specification.

The graph below plots the predicted or theoretical Cp values for pure graphite/graphene at temperatures from 0° Celsius to 3000° Celsius.



INEMET tested a total of 8 samples – 2 Mersen manufactured medium density isostatic blocks representing control samples and 6 Uley Media blocks made from Uley 2 flake. The Mersen blocks are rated to more than 3000° Celsius. The Uley media blocks were made from Uley flake with purity levels ranging from 90% to 96% and flake size ranging from 75 microns to 300 microns.

All samples were heated in a furnace with an inert argon atmosphere to a temperature of 2200°C (2473K). The data recorded included power input, gas flow rates and temperatures for both the furnace and the circulating gas from which the Cp of the media was derived.

The *actual specific heat capacity at constant pressure (Cp)* of all manufactured isostatic products is the same at the relevant temperature (except at temperatures near absolute zero) including the range of the ultra-high operating temperatures of the Sunlands Co. LDES battery. Within tightly specified margins, the Cp value of these products is generally consistent with the theoretical Cp value of pure graphite/graphene as indicated in the graph above.

The table below summarises the Cp values derived from the INEMET data. As expected, the Mersen blocks performed consistently above (from 0.8% to 3.8%) the predicted or theoretical Cp value.

The raw experimental data showed that the Uley Media blocks performed higher than the predicted or theoretical Cp value.

Sample Block	Predicted Cp	Measured Cp	90% Confidence Cp	Difference Cp
Uley Media Block 1	2.147	2.226	2.17-2.28	3.7%
Uley Media Block 1A	2.147	2.595	2.54-2.65	20.8%
Uley Media Block 2	2.147	2.420	2.39-2.45	12.7%
Uley Media Block 2A	2.147	2.150	2.12-2.19	0.2%
Uley Media Block 3	2.147	2.329	2.28-2.38	8.5%
Uley Media Block 3A	2.147	2.157	2.10-2.21	0.5%
Mersen Isostatic Block 1	2.147	2.229	2.22-2.24	3.8%
Mersen Isostatic Block 2	2.147	2.165	2.16-2.18	0.8%

Importantly, at a 90% confidence value the Cp values of the Uley Media blocks are within the bounds of experimental error of the predicted or theoretical Cp values.

The Cp of the various Uley Media was found to be consistently within 10% of the theoretical value of pure graphite/graphene and manufactured isostatic products except in two instances when the particular Uley Media (block 1A and 2) exceeded the theoretical Cp value by 20.8% and 12.7% respectively.

The consistent heat storage capacity and performance of Uley Media blocks can therefore be predicted with confidence when designing and deploying Uley Media blocks for the various Sunlands Co. LDES battery configurations.

FOR FURTHER INFORMATION CONTACT:
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Important Information Regarding the Test Work Program

The subject of the test work described in this announcement was the flake graphite-based media manufactured by QSP. The test work has no bearing on the technical properties, including metallurgical properties, of Uley 2 flake as set out in the Company's definitive feasibility materials including the JORC 2012 Uley 2 Mining Study and Ore Reserve Estimate 2019.

ABOUT PROTHERM

Protherm Systems, founded in July 1987, is a leading thermal process engineering company, based in South Africa. The Company designs and supplies a wide range of thermal and related thermal processing plant and equipment for industrial users world wide, such as Plate Heat Exchangers, Shell and Tube Heat Exchangers, Air Dryers and Evaporators.

ABOUT INEMET

The Institute for Non-Ferrous Metallurgy and High Purity Materials focuses on sustainable and innovative processes that rethink existing production processes and the handling of supposed waste products in the spirit of the circular economy and zero waste thinking. INEMET's dedicated team work toward a greener future and the revolutionizing of non-ferrous metallurgy. It develops existing processes within pyrometallurgy, hydrometallurgy and the semiconductor industry in working groups and in a variety of projects. https://tu-freiberg.de/en/fakult5/inemet