FOCUS GRAPHITE

LONG TERM CYCLING PERFORMANCE AND CONDUCTIVITY ENHANCEMENT CHARACTERISTICS OF LAC KNIFE FLAKE GRAPHITE FROM QUEBEC, CANADA

33rd International Battery Seminar and Exhibition
Fort Lauderdale, Florida - March 21 to 24, 2016

Dr. Joseph E. Doninger, Director of Manufacturing and Technology
Gary Economo, President and CEO

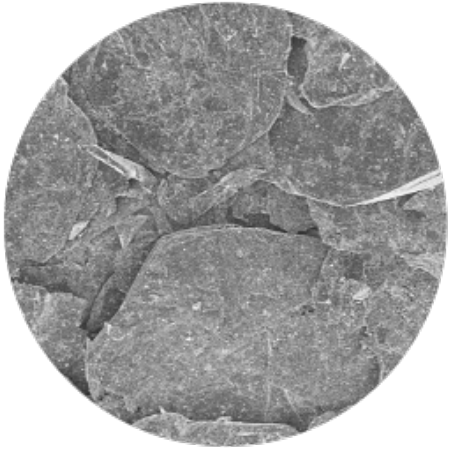
OUTLINE

- Review Key Results from 2015 Battery Seminar
- Performance of Lac Knife Flake Graphite and Synthetic Graphite in Lithium Ion Cells
- Long Term Cycling Performance of Lac Knife Graphite
- Production of Expanded Lac Knife Graphite
- Resistivity of Lac Knife Flake Graphite and Synthetic Graphite in Cathode Matrixes of Lithium Ion and Alkaline Batteries
- Advantages of using Lac Knife Graphite in Batteries

REVIEW KEY RESULTS FROM 2015 BATTERY SEMINAR

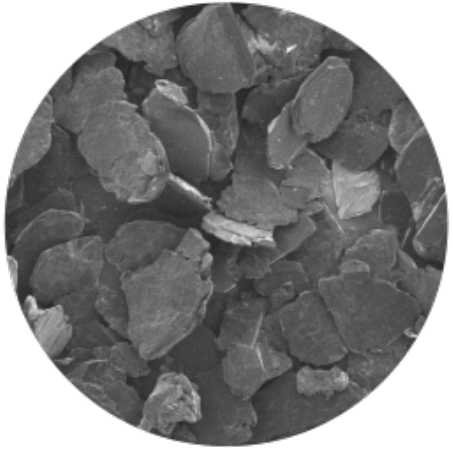
FOCUS GRAPHITE

Flotation Concentrate



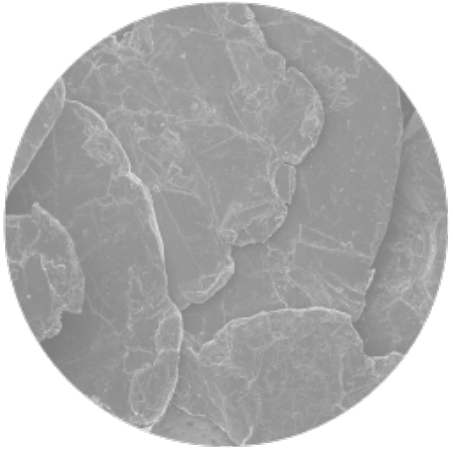
96% Cg

Concentrate after Polishing



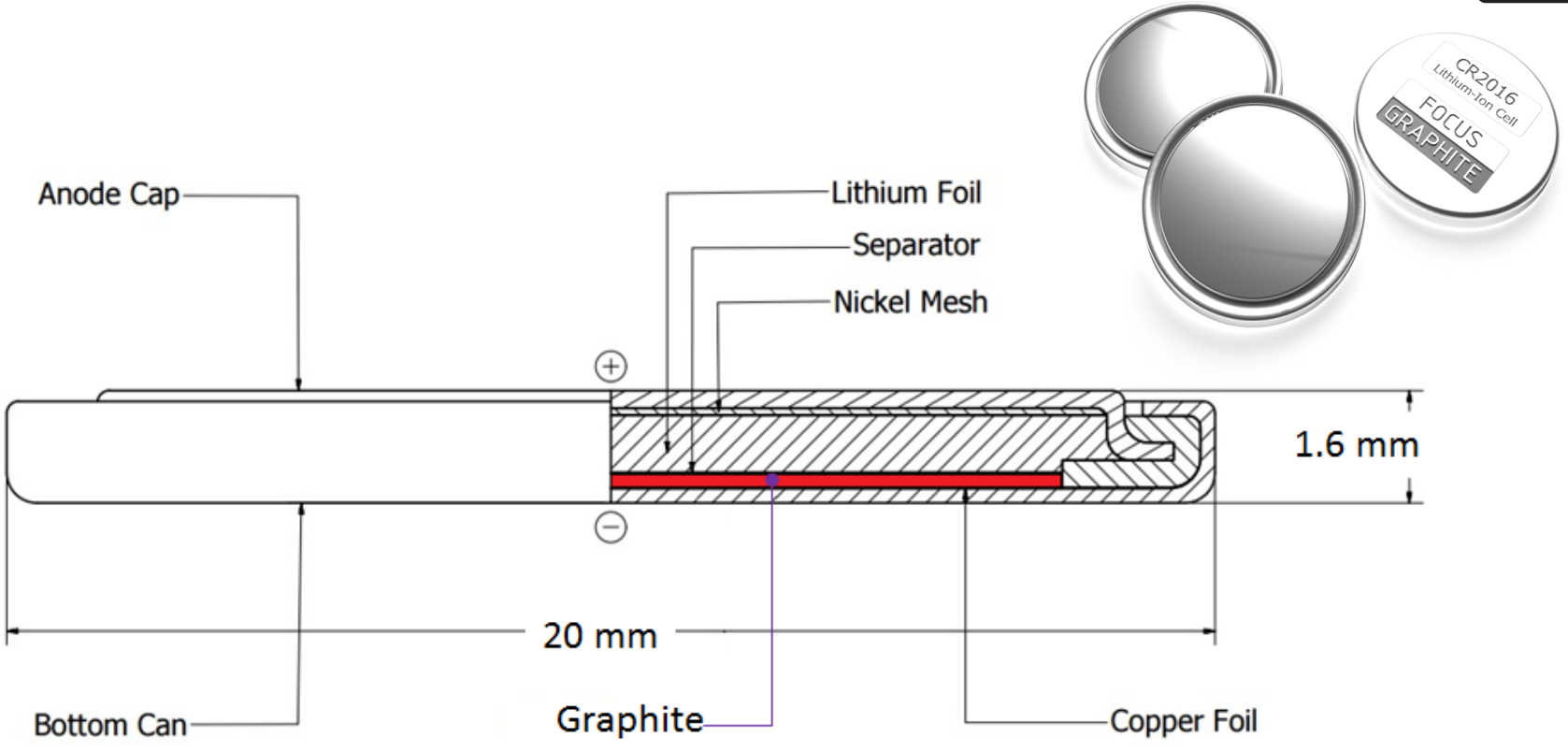
98.3% Cg

Lac Knife Graphite after Purification



99.98%+ Cg

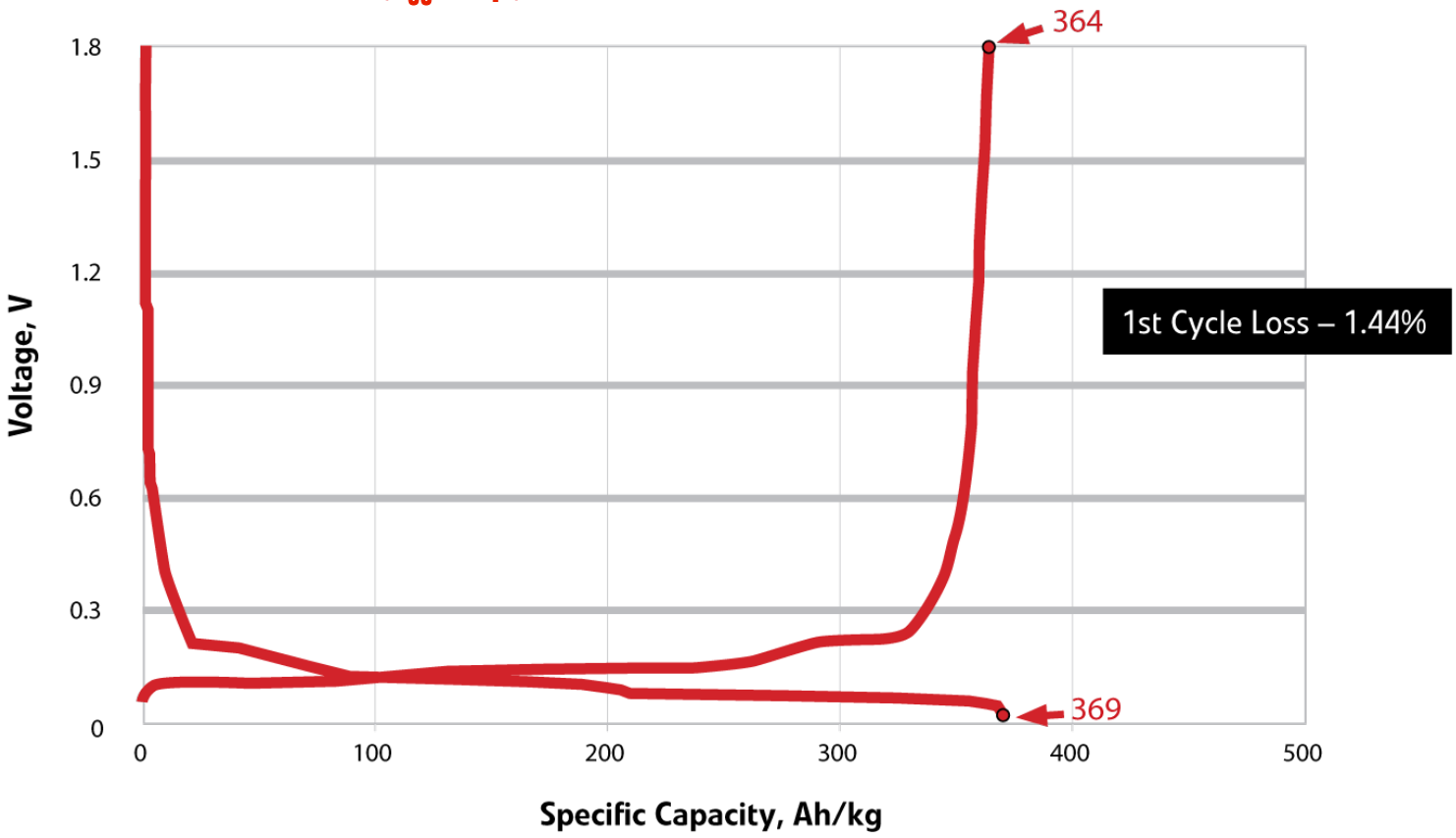
Fig. 1 CROSS SECTION OF CR2016 COIN CELL



- Reversible capacity and irreversible capacity were determined at C/20 cycling rate.
- Electrolyte: 1 M $LiPF_6$ in FEC/EMC (30:70wt%) + SEI Enhancing Additive.

Fig. 2 INITIAL GALVANOSTATIC CHARGE-DISCHARGE CURVES

STANDARD GRADE (D_{50}=24μ)



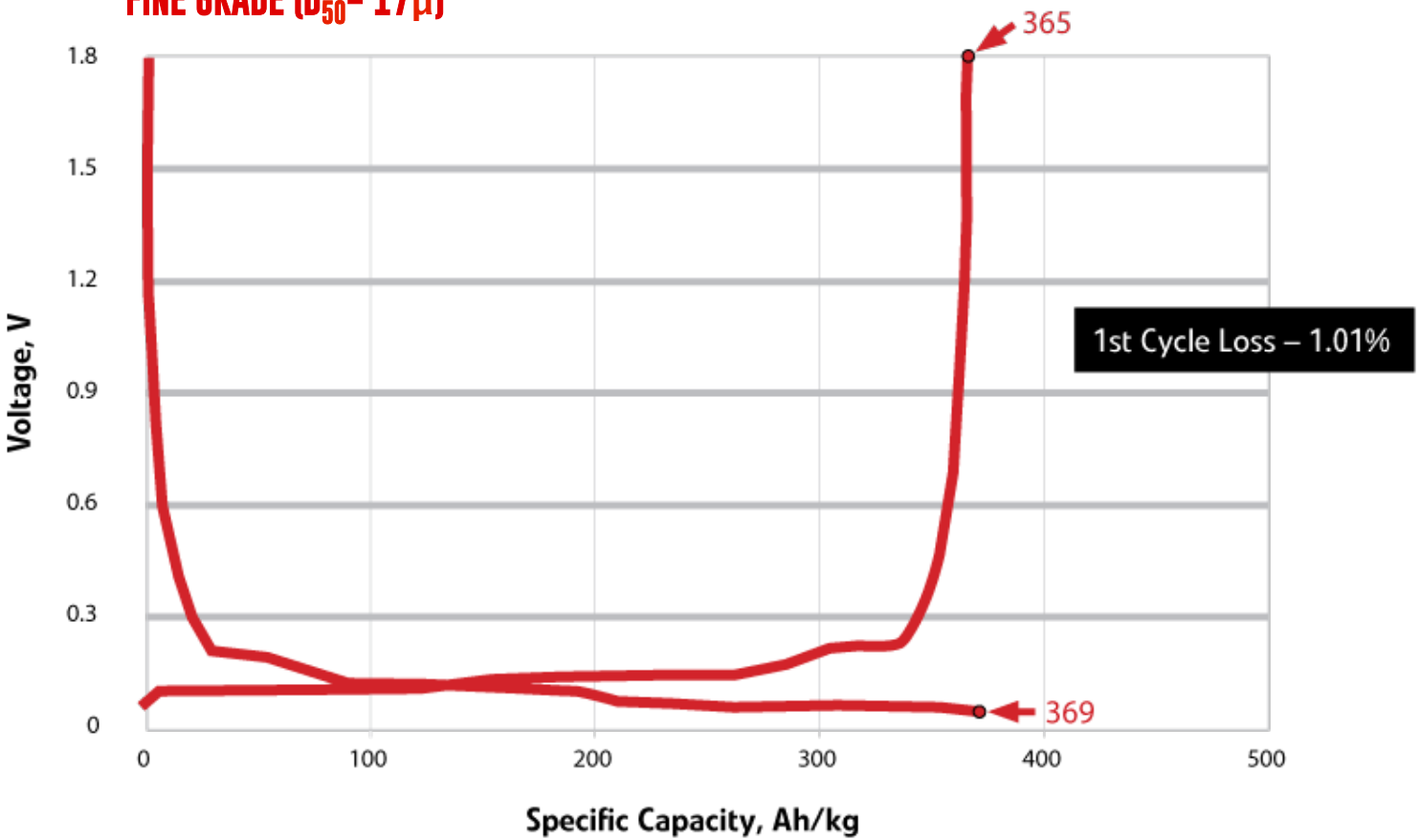
Cell #736. CR2016, counter: Li; Graphite: Standard Grade Surface Coated SPG; Rate: C/20; Electrolyte 1M LiPF6 in FEC/EMC (30:70 vol%)

FOCUS GRAPHITE

FMS LISTED ON TMX TSX Venture Exchange

Fig. 3 INITIAL GALVANOSTATIC CHARGE-DISCHARGE CURVES

FINE GRADE (D_{50}= 17μ)

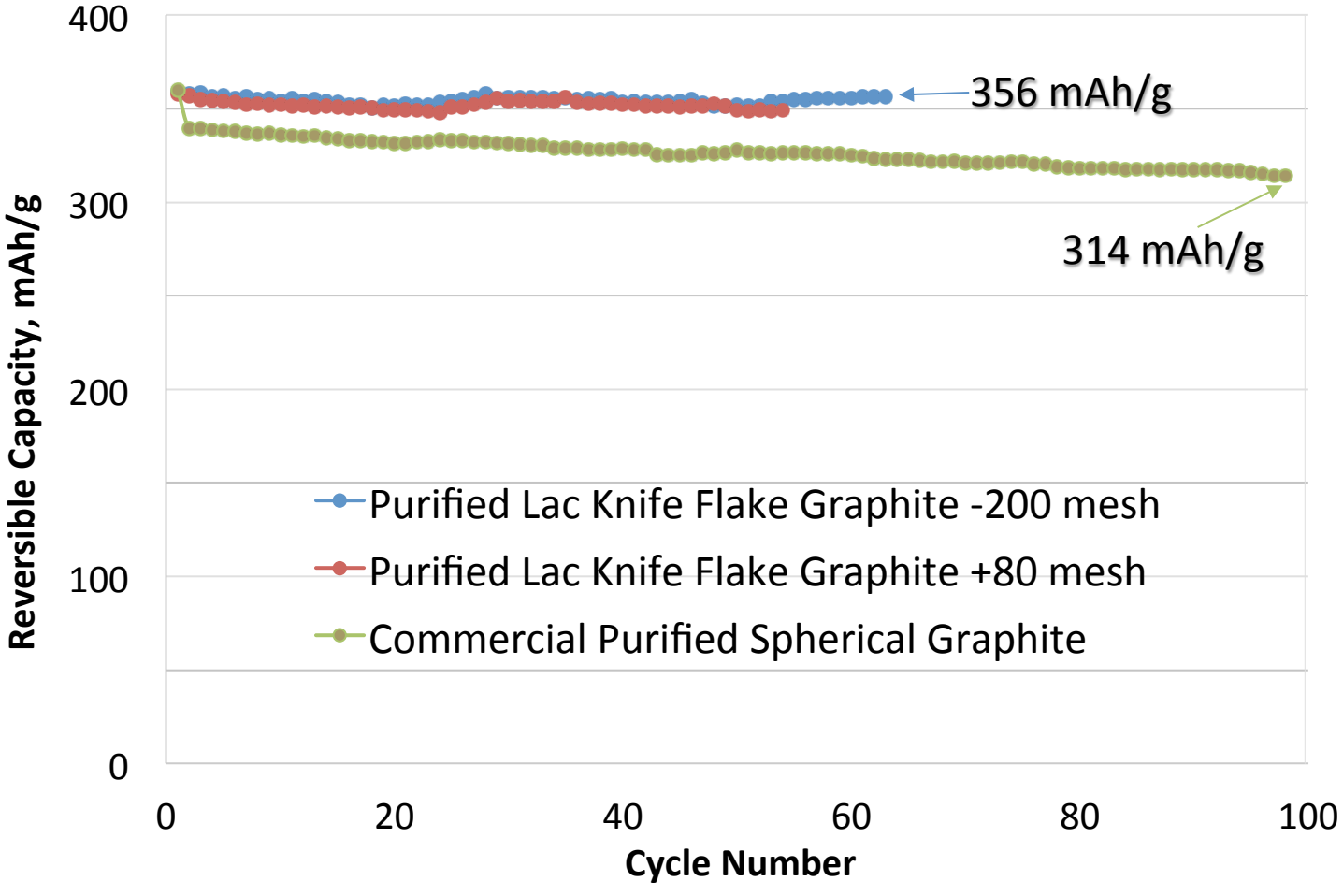


Cell #705. CR2016, counter: Li; Graphite: Fine Grade Surface Coated SPG; Rate: C/20; Electrolyte 1M LiPF6 in FEC/EMC (30:70 vol%)

FOCUS GRAPHITE

FMS LISTED ON TMX TSX Venture Exchange

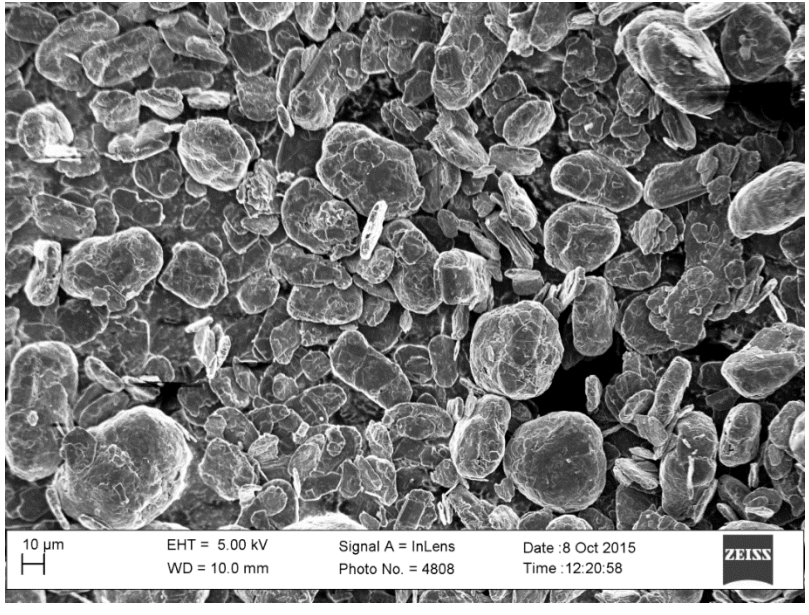
Fig. 4 LONG TERM CYCLING PERFORMANCE OF PURIFIED LAC KNIFE GRAPHITE COMPARED WITH COMMERCIAL GRADE OF COATED SPHERICAL GRAPHITE.



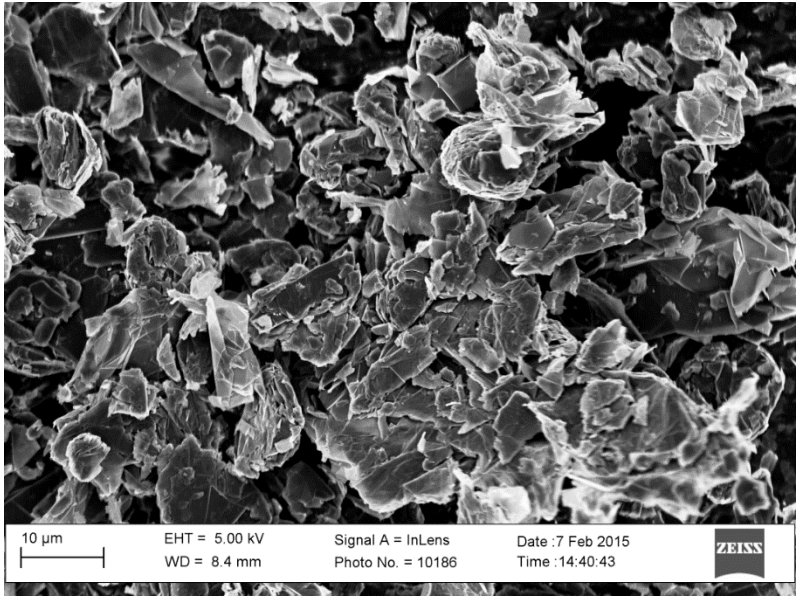
FOCUS GRAPHITE

PERFORMANCE OF LAC KNIFE FLAKE GRAPHITE AND SYNTHETIC GRAPHITE IN Li ION COIN CELLS

FOCUS GRAPHITE



Coated Lac Knife Spherical Graphite

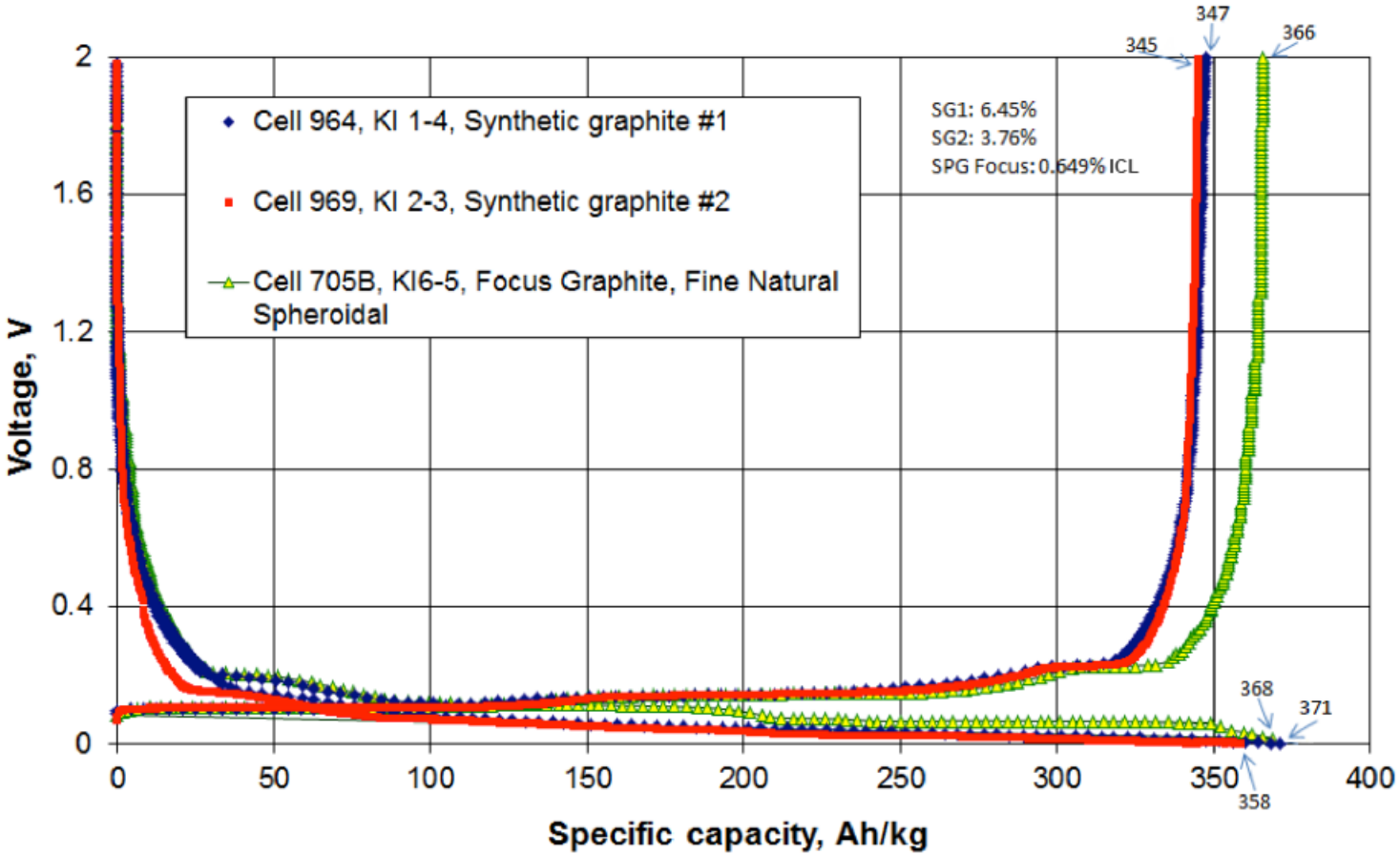


Commercial Grade of Synthetic Graphite

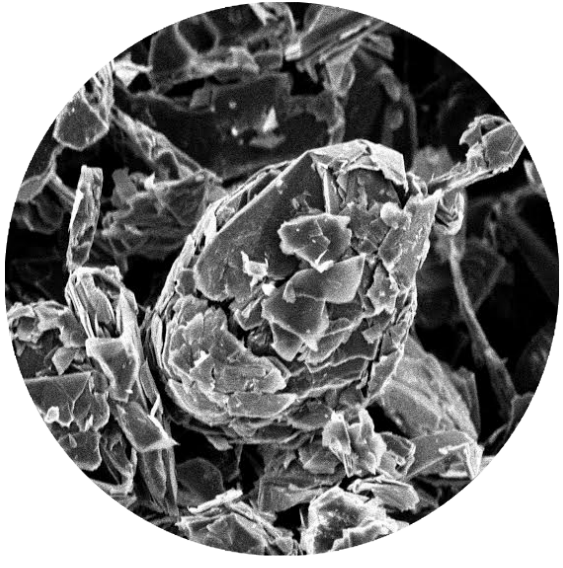
Table 1 PERFORMANCE OF LAC KNIFE FLAKE GRAPHITE COMPARED WITH SYNTHETIC GRAPHITE IN Li ION CELLS

Focus Graphite Coin Cell Test Samples	Reversible Capacity (Ah/Kg)	Irreversible Capacity 1st Cycle Loss (%)	Capacity After 1st Cycle Loss (Ah/Kg)
Focus Li Ion Fine Grade of Coated SPG D_{50} = 21.44 µ, Tap Density = 0.93 g/cc Surface Area = 0.44 m^2/g	**366.0**	**0.65% (99.35% efficient)**	**363.6**
Commercial Li Ion Synthetic Grade #1 D_{50} = 15.8 µ, Tap Density = 0.88 g/cc Surface Area = 0.97 m^2/g	**347.2**	**6.45% (93.55% efficient)**	**324.8 (10.7% lower)**
Commercial Li Ion Synthetic Grade #2 D_{50} = 20.6 µ, Tap Density = 0.97 g/cc Surface Area = 1.15 m^2/g	**345.4**	**3.46% (96.54% efficient)**	**333.4 (8.3% lower)**

Fig. 5 INITIAL CHARGE-DISCHARGE CURVES FOR LAC KNIFE FLAKE GRAPHITE COMPARED WITH SYNTHETIC GRAPHITE



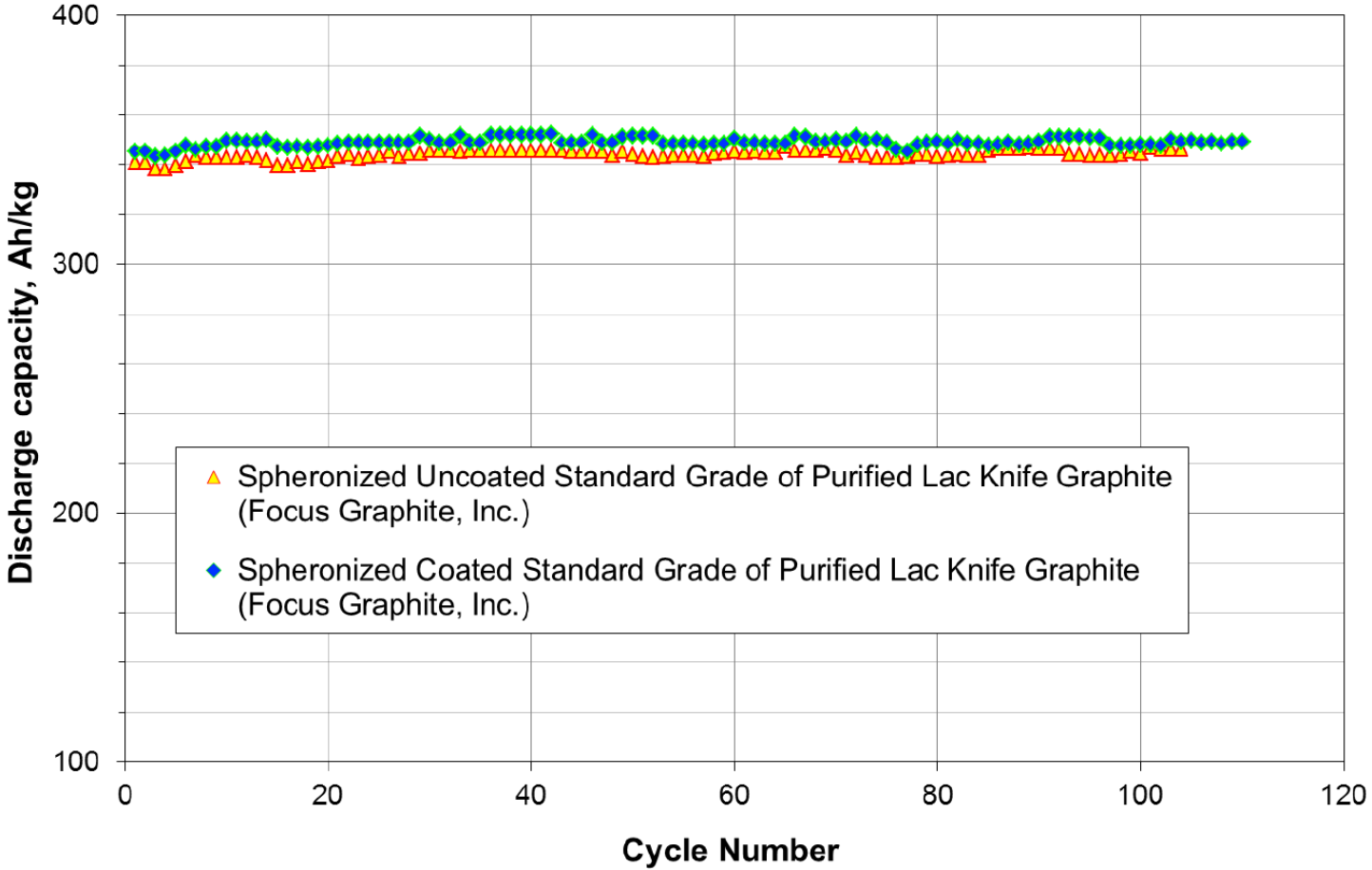
LONG TERM CYCLING PERFORMANCE OF LAC KNIFE GRAPHITE



Formation of a Graphite Sphere

Spherical Graphite

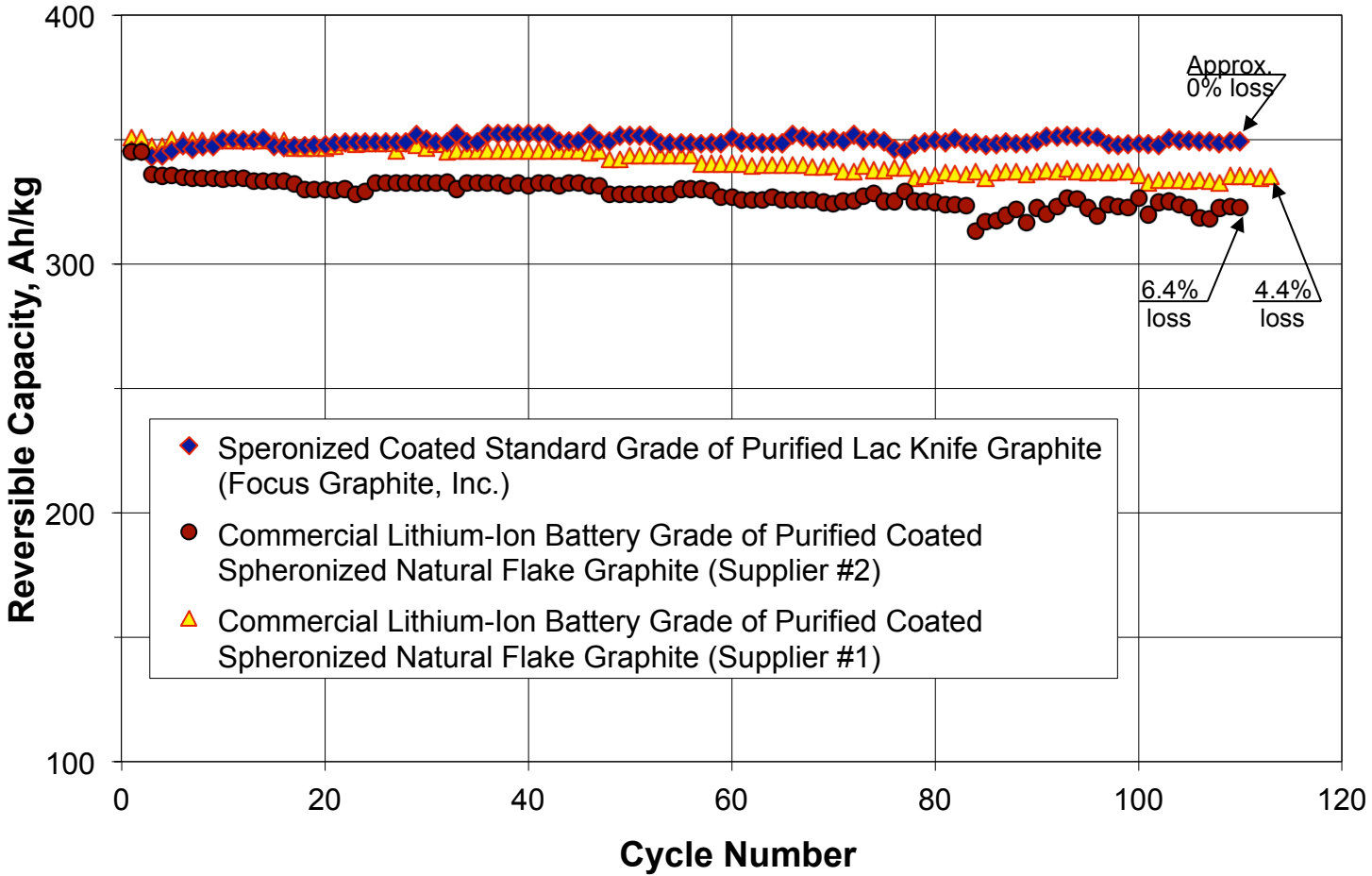
Fig. 6 LONG TERM CYCLING PERFORMANCE OF UNCOATED AND CARBON COATED LAC KNIFE SPHERICAL GRAPHITE



FOCUS GRAPHITE

FMS LISTED ON TMX TSX Venture Exchange

Fig. 7 LONG TERM CYCLING PERFORMANCE OF LAC KNIFE GRAPHITE COMPARED WITH TWO COMMERCIAL Li ION GRADES OF FLAKE GRAPHITE



FOCUS GRAPHITE

FMS LISTED ON TMX TSX Venture Exchange

Fig. 8 LONG TERM CYCLING PERFORMANCE OF ULTRA FINE GRADES OF UNCOATED LAC KNIFE GRAPHITE

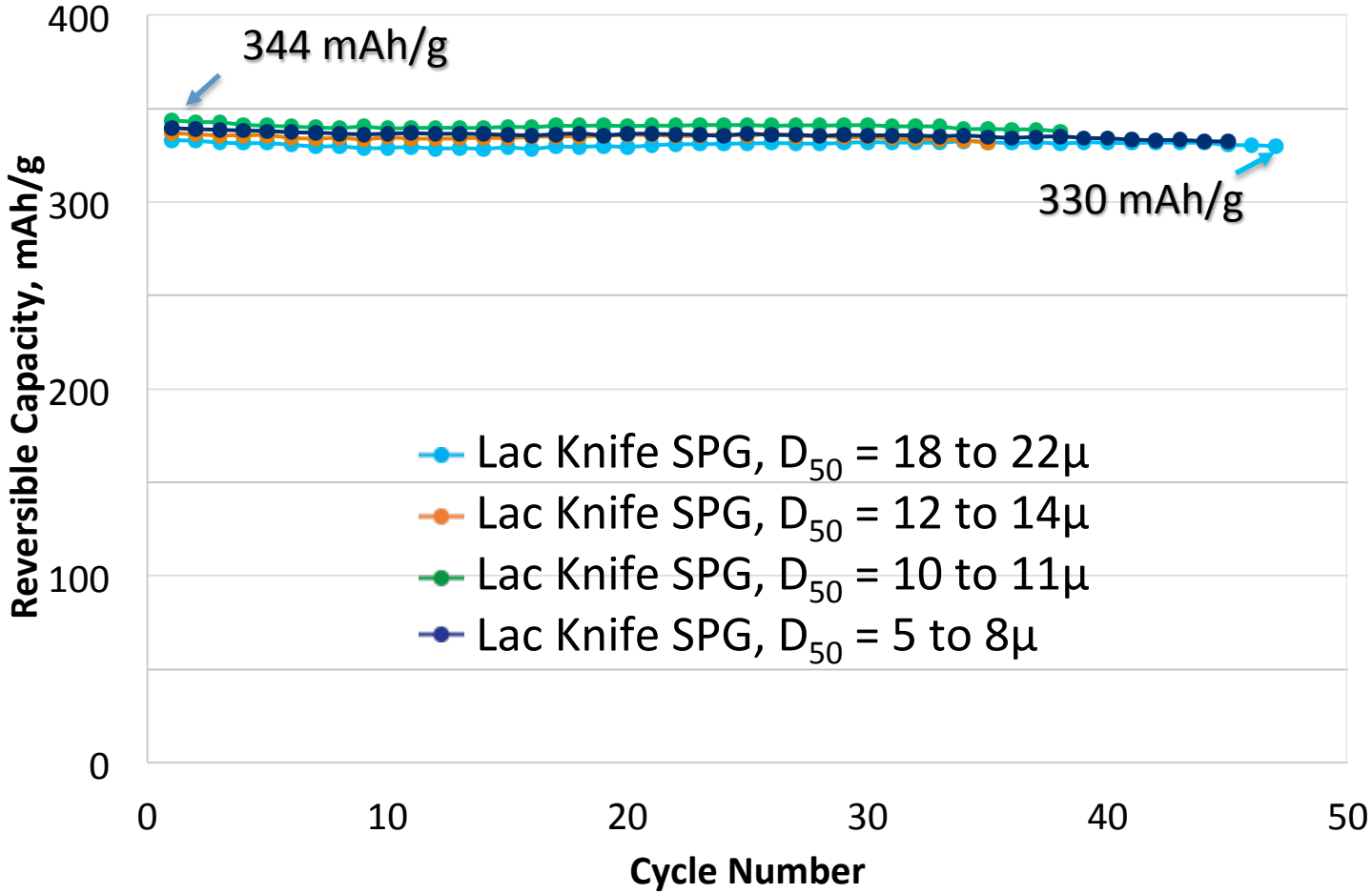


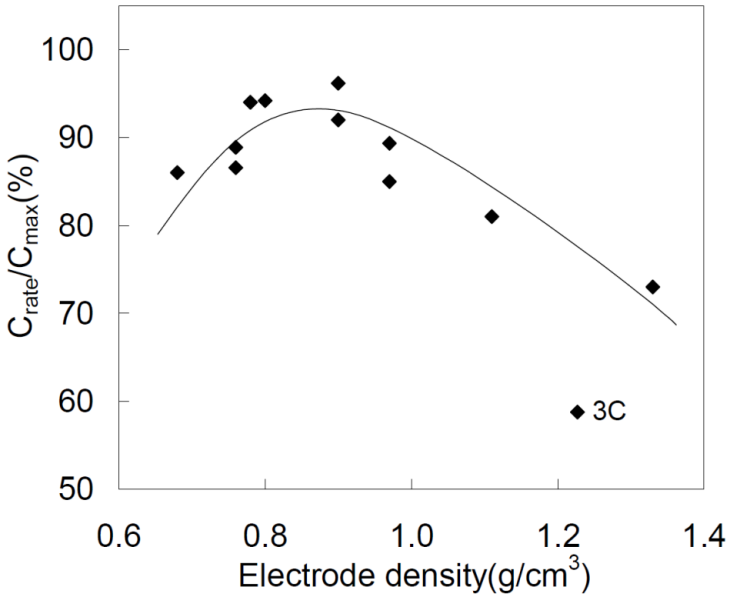
Fig. 9 DEPENDANCE OF GRAPHITE ANODE PERFORMANCE ON ELECTRODE DENSITY

For best performance the density of electrode after calendaring should be in the range of 0.8 to 1.0 g/cm^3 for electric vehicles.

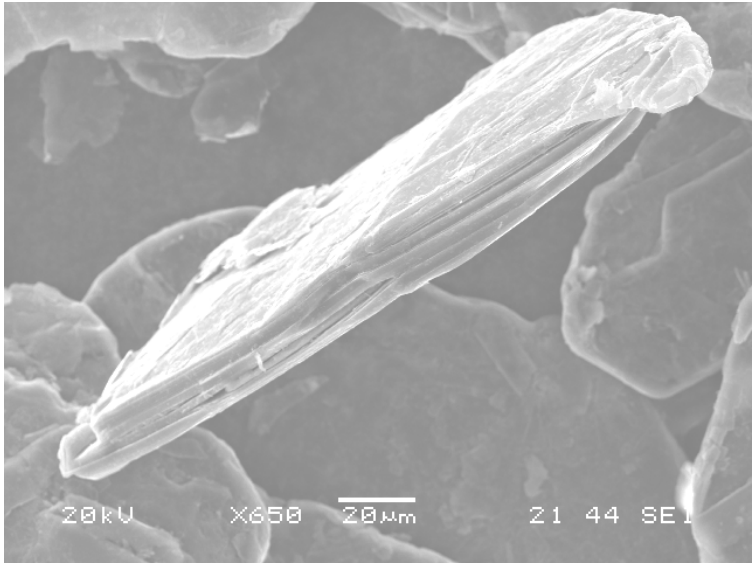
Table 1. Reversible and irreversible capacities of natural and synthetic graphite i
and second cycles.

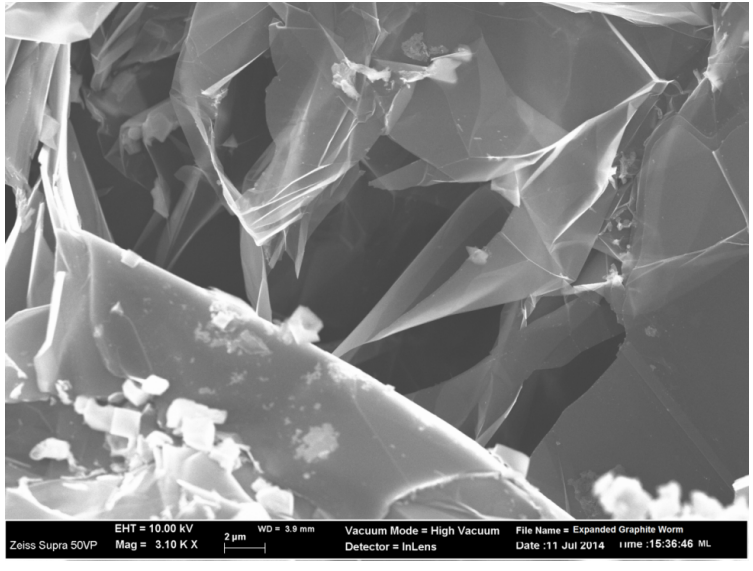
Graphite	Q_{rev} (mAh/g)	ICL (%)	ICL (mAh/g)
SL20	370	9.2	75
MAG-10	328	8.6	62
GDR6	340	13.3	108

Data reference: Joongpyo Shim and Kathryn A. Striebel. Effect of electrode density on cycle performance and irreversible capacity loss for natural graphite anode in lithium ion batteries. IMLB, Paper #169 (2003).



PRODUCTION OF EXPANDED LAC KNIFE GRAPHITE

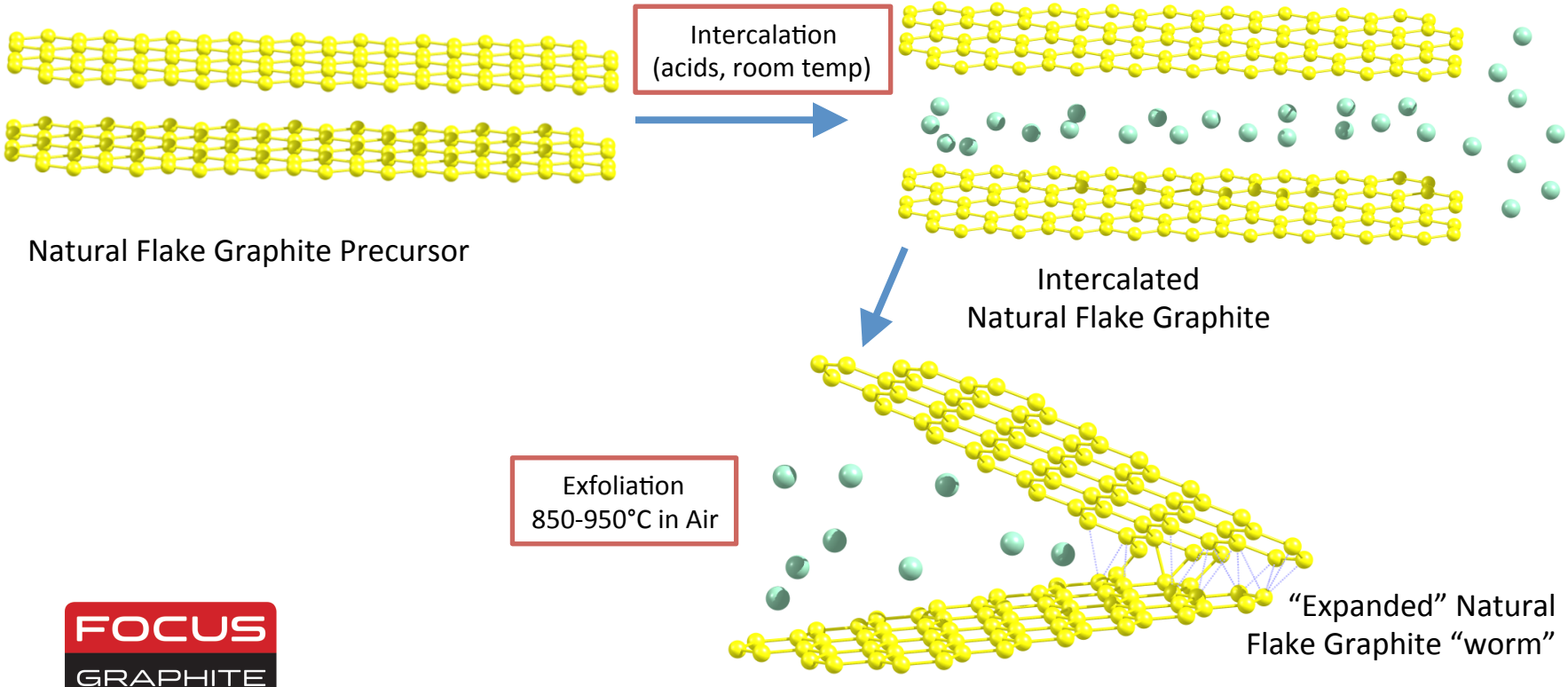




Purified Graphite

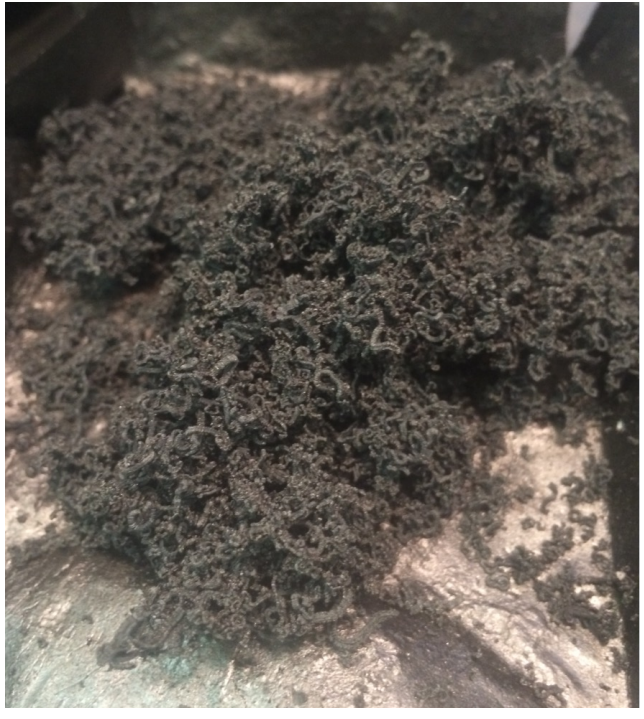
Expanded Graphite

PRODUCTION OF EXPANDED LAC KNIFE GRAPHITE



FOCUS GRAPHITE

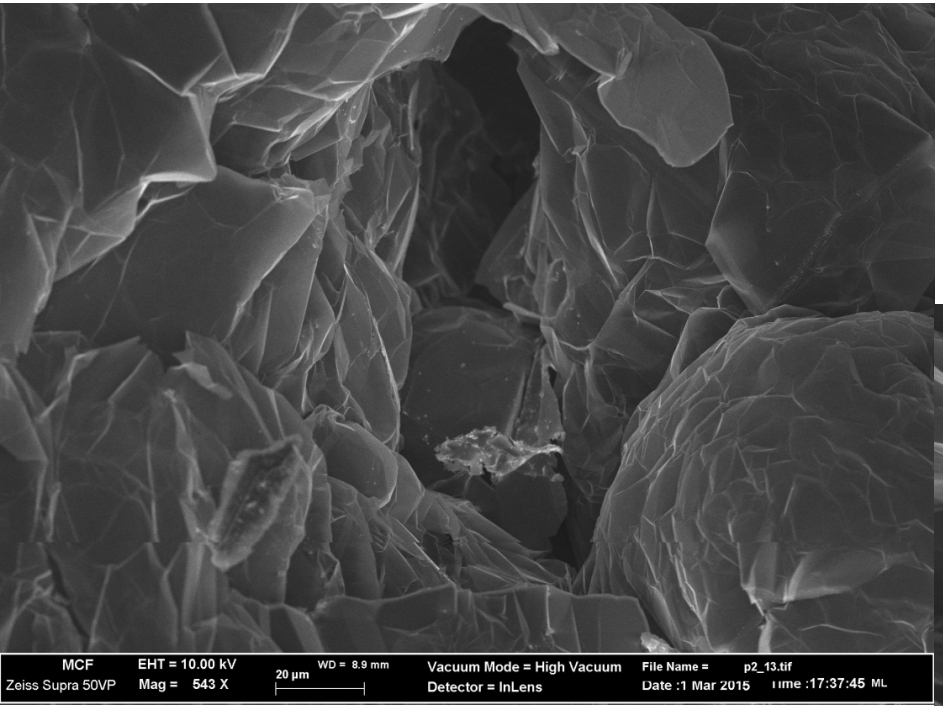
APPEARANCE OF EXPANDED PRODUCT



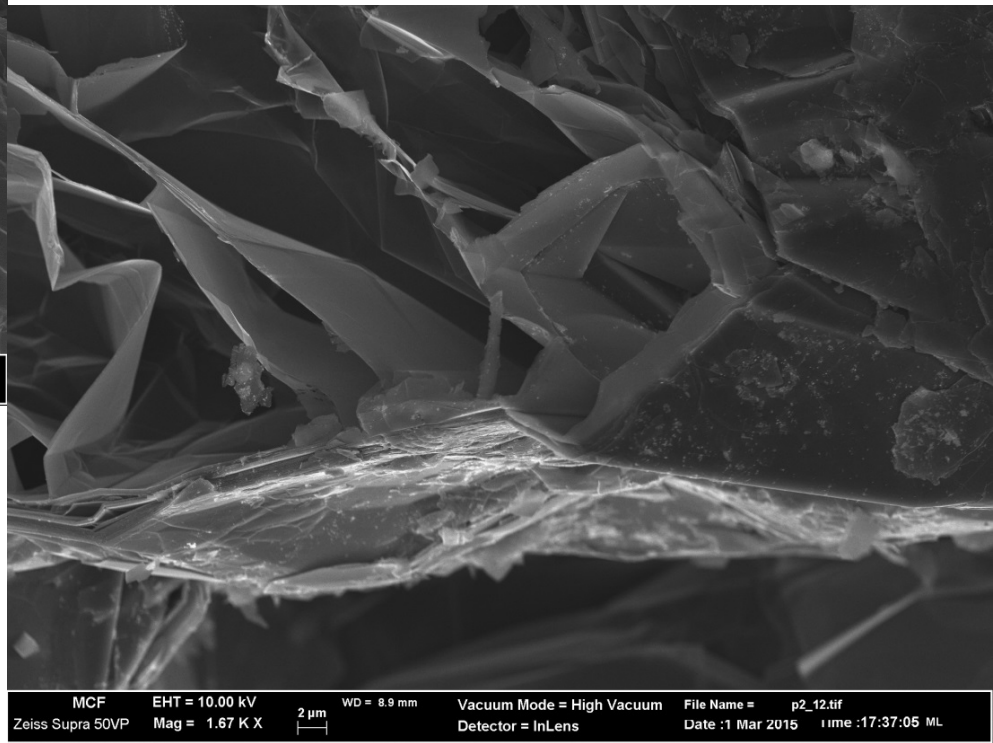
Expansion volume of
›250 ml/g achieved

SEMs OF EXPANDED “WORMS”

FOCUS GRAPHITE

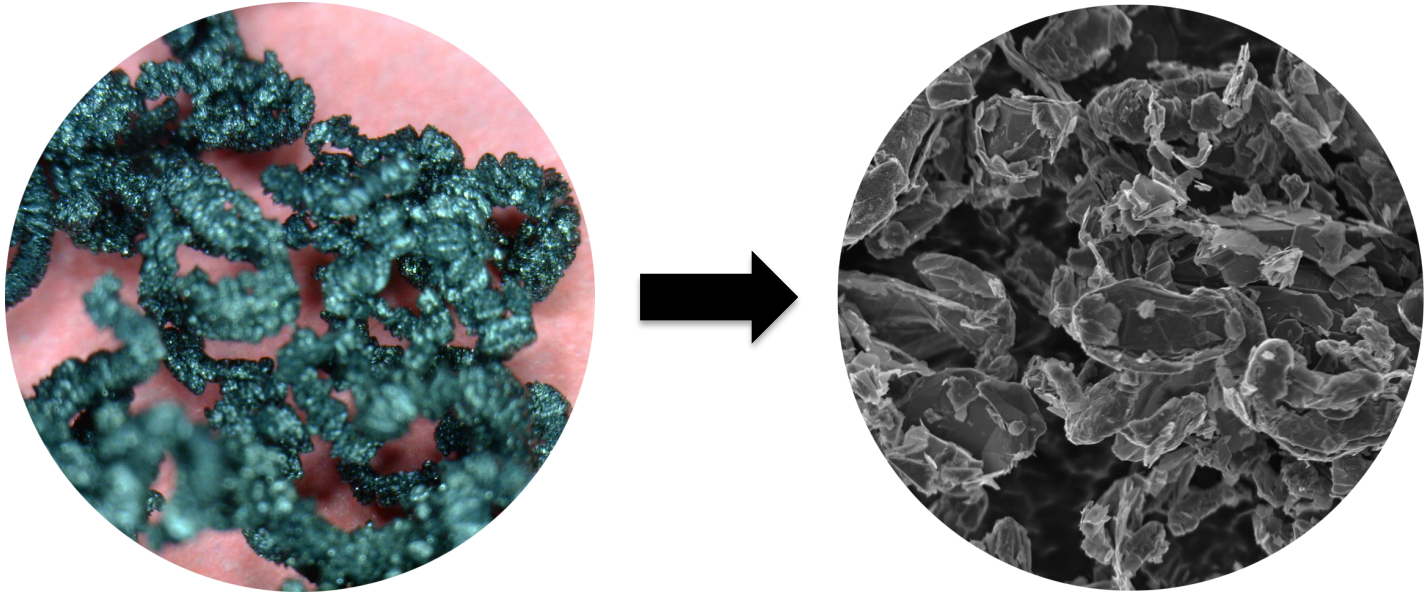


Flakes are thin enough to be defined as nano-materials.



Thin-sheet morphology is key to increased electrical conductivity in battery electrode matrixes.

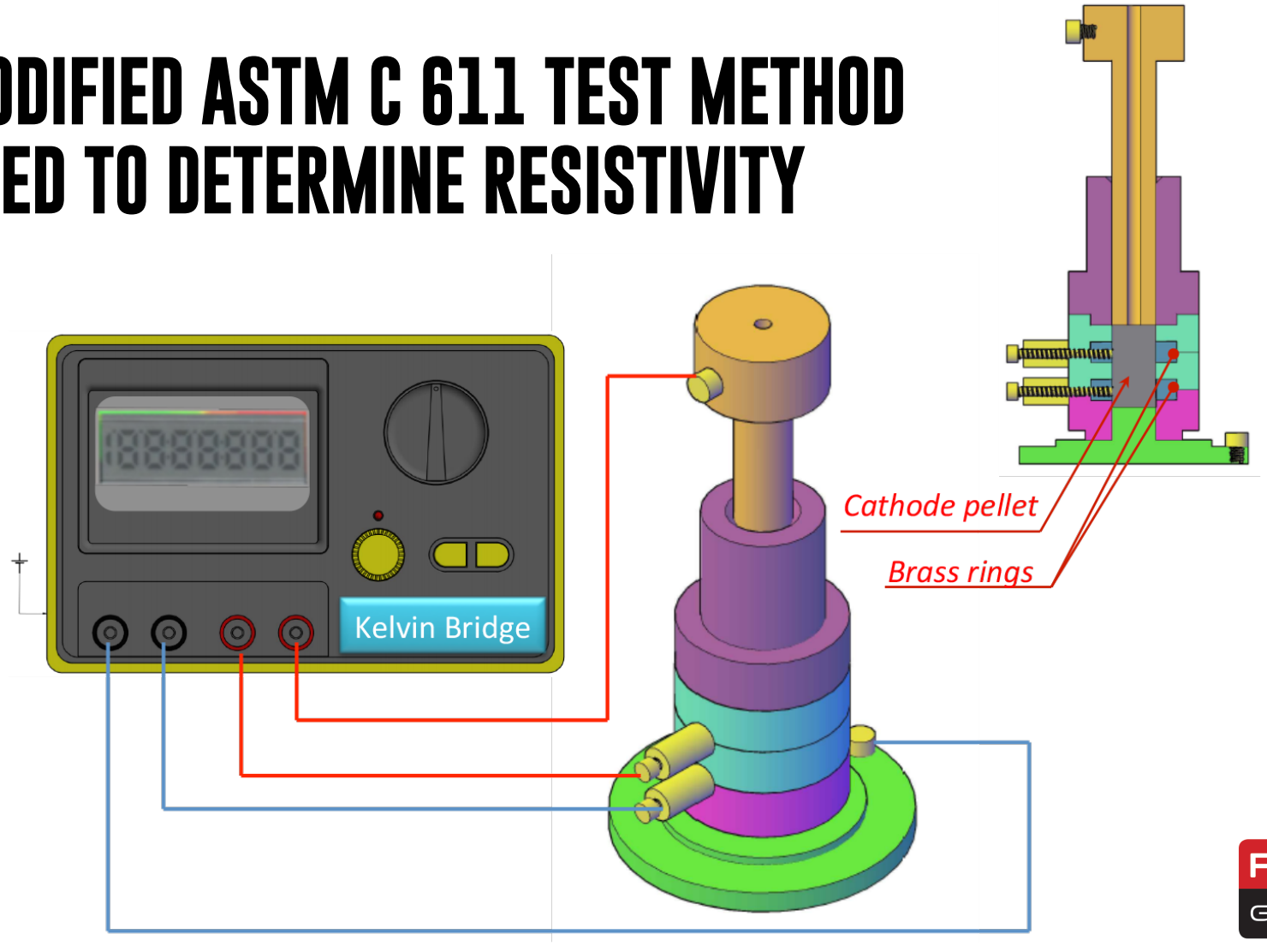
RESISTIVITY OF LAC KNIFE FLAKE GRAPHITE AND SYNTHETIC GRAPHITE IN CATHODE MATRIXES OF Li ION AND ALKALINE BATTERIES



Expanded Graphite

Delaminated Graphite

MODIFIED ASTM C 611 TEST METHOD USED TO DETERMINE RESISTIVITY



FOCUS GRAPHITE

SCOPE OF RESISTIVITY STUDY

Battery Formulations Tested

$LiNiMnCoO_2$ & $LiFePO_4$ (Lithium Ion Batteries)
Zn/MnO_2 (Alkaline Batteries)

Graphites Evaluated

Flake Graphite

- **Lac Knife Expanded Grade, D_{50} = 15.8 µ and D_{50} = 21 µ**
- **Commercial Expanded Grade, D_{50} = 9.5 µ**
- **Commercial Flake Graphite D_{50} = 6 µ** and **D_{50} = 9.5 µ**

Synthetic Graphite

- **Commercial Li Ion Grade, D_{50} = 3.5 µ**
- **Commercial Alkaline Grade, D_{50} = 9 µ**

Carbon Black Added to Cathode Matrixes

4% in Li Ion Matrix
0% in Alkaline Matrix

Fig. 10 RESISTIVITIES Li ION CATHODE MATRIX:

$LiNiMnCoO_2$

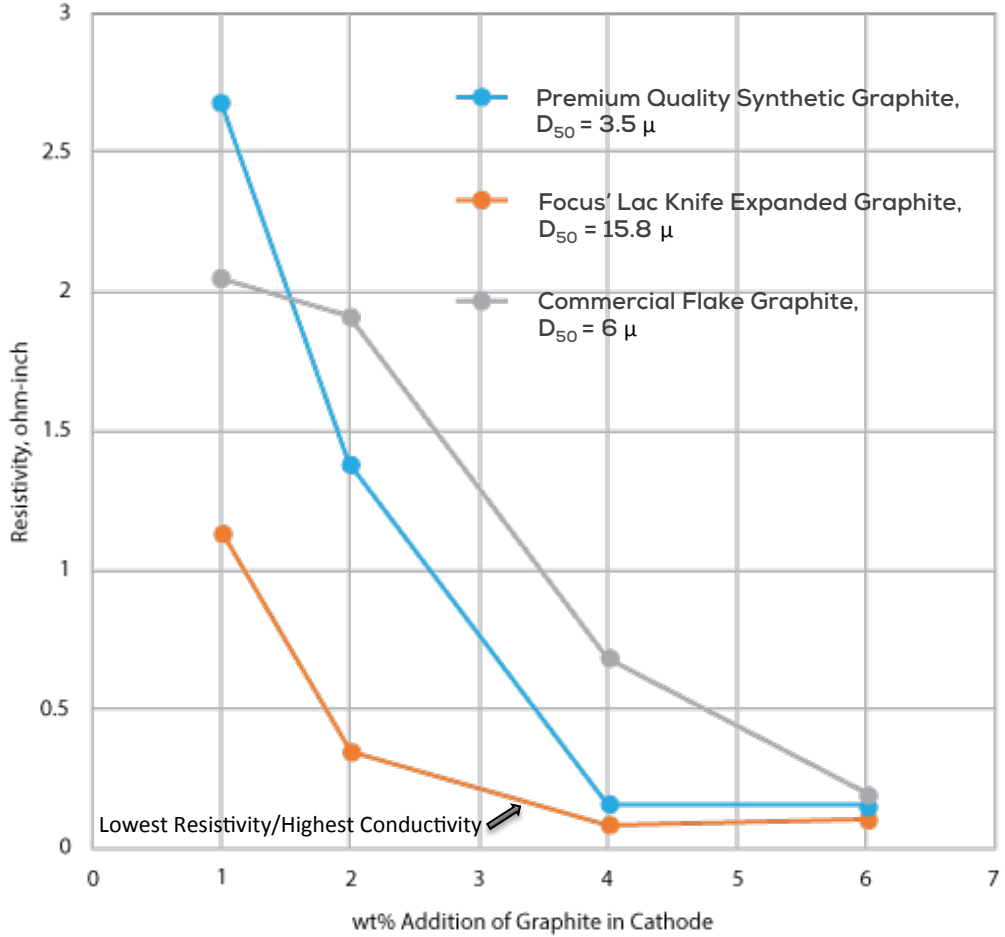
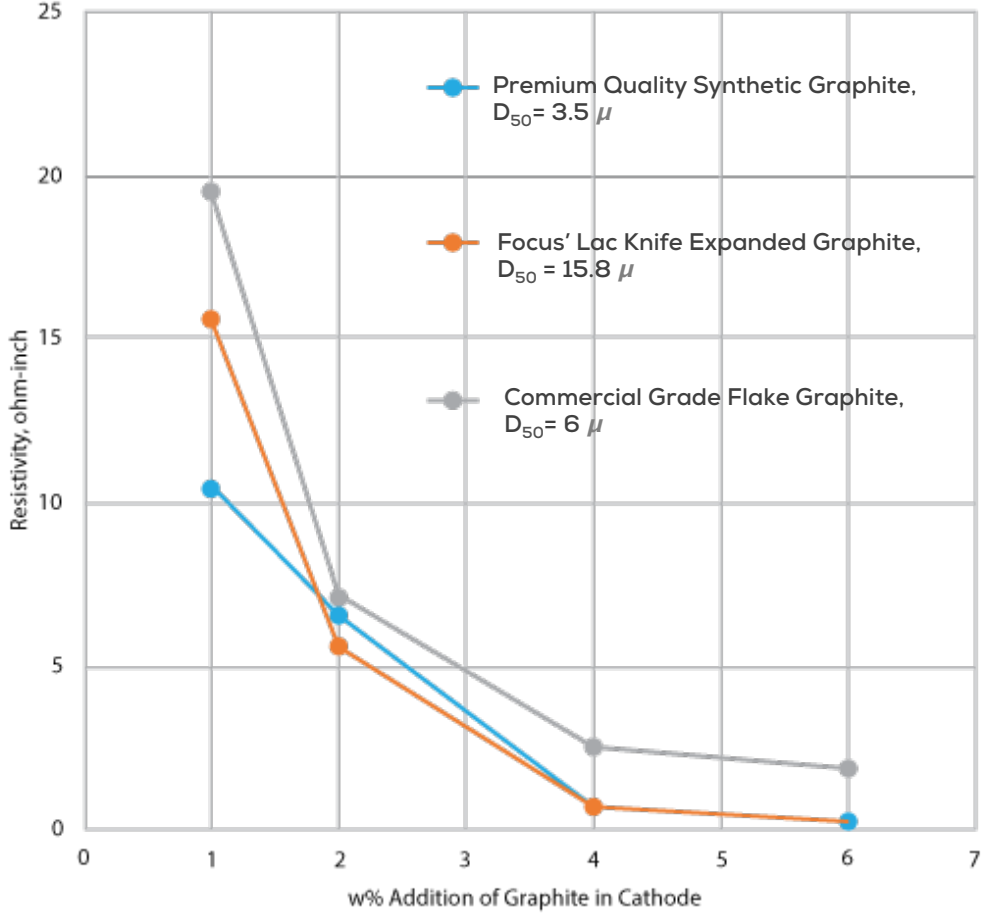


Fig. 11 RESISTIVITIES IN Li ION CATHODE MATRIX:

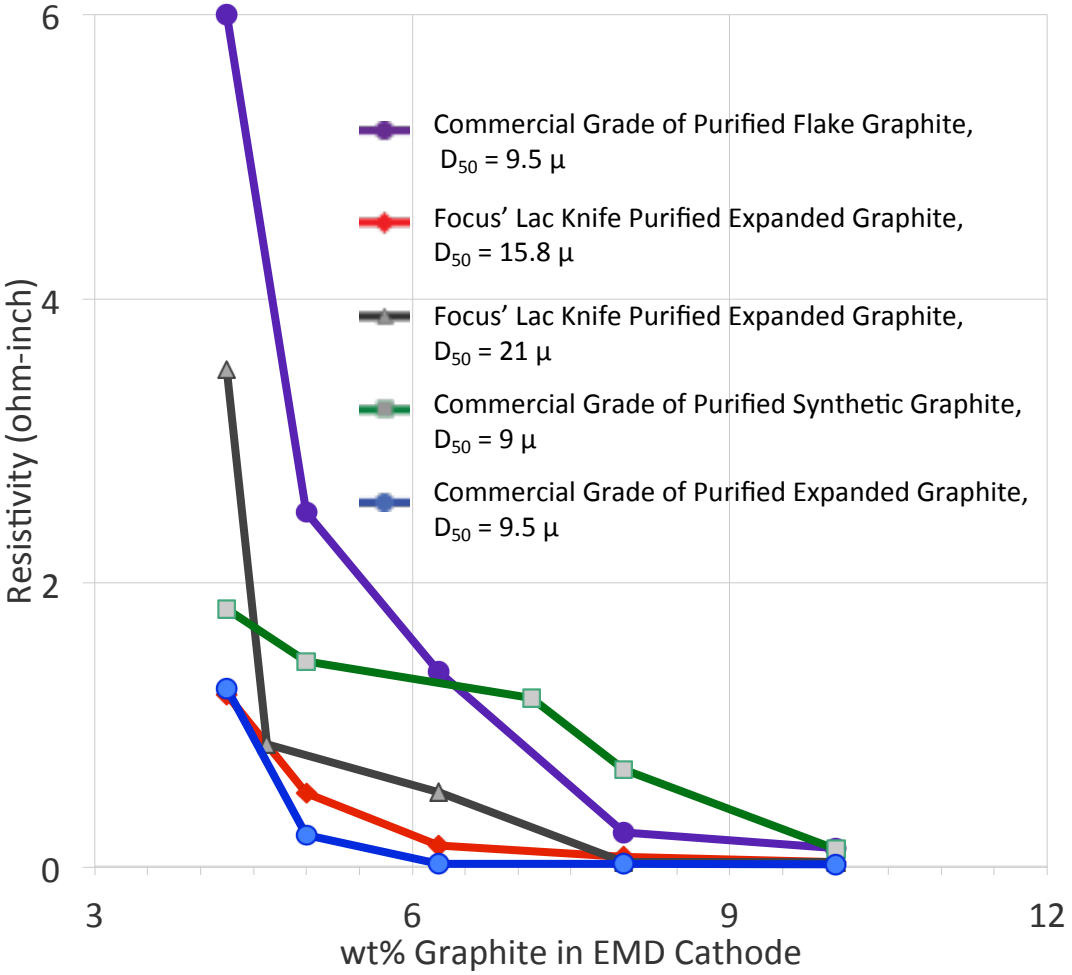
$LiFePO_4$



FOCUS GRAPHITE

FMS LISTED ON TMX TSX Venture Exchange

Fig. 12 RESISTIVITY IN ALKALINE CATHODE MATRIX: MnO_2



FOCUS GRAPHITE

FMS LISTED ON TMX TSX Venture Exchange

ADVANTAGES OF USING LAC KNIFE GRAPHITE IN BATTERIES

Key Properties:

- Near Theoretical Reversible Capacity
- Low Irreversible Capacity Loss
- Reduced Capacity Fade during Long-term Cycling
- High Electrical Conductivity

End User Advantages:

- Higher Capacity
- Increased Power
- Longer Battery Life
- Increased Utilization of Cathode Active Material

DISCLAIMER

This presentation contains “forward-looking information” within the meaning of Canadian securities legislation. All information contained herein that is not clearly historical in nature may constitute forward-looking information. Generally, such forward-looking information can be identified by the use of forward-looking terminology such as “plans”, “expects” or “does not expect”, “is expected”, “budget”, “scheduled”, “estimates”, “forecasts”, “intends”, “anticipates” or “does not anticipate”, or “believes”, or variations of such words and phrases or state that certain actions, events or results “may”, “could”, “would”, “might” or “will be taken”, “occur” or “be achieved”. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of the Company to be materially different from those expressed or implied by such forward-looking information, including but not limited to: (i) volatile stock price; (ii) the general global markets and economic conditions; (iii) the possibility of write-downs and impairments; (iv) the risk associated with exploration, development and operations of mineral deposits; (v) the risk associated with establishing title to mineral properties and assets; (vi)the risks associated with entering into joint ventures; (vii) fluctuations in commodity prices; (viii) the risks associated with uninsurable risks arising during the course of exploration, development and production; (ix) competition faced by the resulting issuer in securing experienced personnel and financing; (x) access to adequate infrastructure to support mining, processing, development and exploration activities; (xi) the risks associated with changes in the mining regulatory regime governing the resulting issuer; (xii) the risks associated with the various environmental regulations the resulting issuer is subject to; (xiii) risks related to regulatory and permitting delays; (xiv) risks related to potential conflicts of interest; (xv) the reliance on key personnel; (xvi) liquidity risks; (xvii) the risk of potential dilution through the issue of common shares; (xviii) the Company does not anticipate declaring dividends in the near term;(xix) the risk of litigation; and (xx) risk management.

Forward-looking information is based on assumptions management believes to be reasonable at the time such statements are made, including but not limited to, continued exploration activities, no material adverse change in metal prices, exploration and development plans proceeding in accordance with plans and such plans achieving their stated expected outcomes, receipt of required regulatory approvals, and such other assumptions and factors as set out herein. Although the Company has attempted to identify important factors that could cause actual results to differ materially from those contained in the forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that such forward-looking information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such forward-looking information. Such forward-looking information has been provided for the purpose of assisting investors in understanding the Company’s business, operations and exploration plans and may not be appropriate for other purposes. Accordingly, readers should not place undue reliance on forward-looking information. Forward-looking information is made as of the date of this press release, and the Company does not undertake to update such forward-looking information except in accordance with applicable securities laws.

THANK YOU

Dr. Joseph E. Doninger PhD, MSc, BSc.
Director of Manufacturing and Technology
T +1 (224) 436-4835
E jdoninger@focusgraphite.com

Focus Graphite Inc.
130 Albert Street
Suite 912
Ottawa, Ontario K1P 5G4
CANADA
T +1 (613) 241-4040
E info@focusgraphite.com
W www.focusgraphite.com