



**AETHER**  
**CATALYST**  
SOLUTIONS, INC.

SEPTEMBER 2020

CSE: ATHR



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## AETHER'S LOW COST CATALYST FOR EMISSION REDUCTION

- Aether Catalyst Solutions, Inc. has been developing its current base metal catalyst since 2016. The Company, prior to moving to new custom-built laboratory space in December 2018, was carrying out its research at 4D LABS, a \$65 million applications and science-driven research institute at Simon Fraser University, located in Burnaby, British Columbia, Canada.
- The Company has tested early iterations of its catalyst with two multinational Original Equipment Manufacturers (OEMs) and received positive feedback and guidance. Aether's recent technological developments have resulted in a catalyst that is approaching the performance levels of incumbent platinum group metals (PGMs) catalysts and has renewed and accelerated the Company's outreach to global OEMs.
- Aether continues to improve the performance of its catalysts through on-going optimization programs.





## AETHER'S LOW COST CATALYST FOR EMISSION REDUCTION

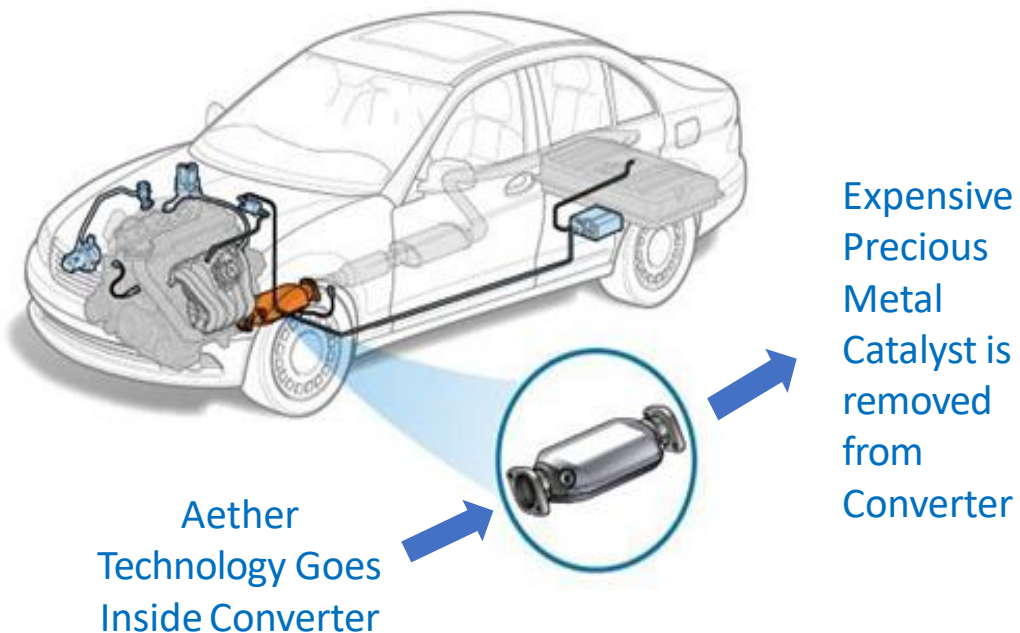
- Aether has developed a low-cost high performance 3-way catalyst
- Replaces costly precious metal catalytic converters used in cars today
- Aether's technology does not contain platinum, palladium or rhodium
- Catalyst can be processed using methods that are scalable to high volume and low costs
- 3<sup>rd</sup> party testing validates internal performance tests of Aether's catalyst



## AETHER'S LOW COST CATALYST FOR EMISSION REDUCTION

### Features:

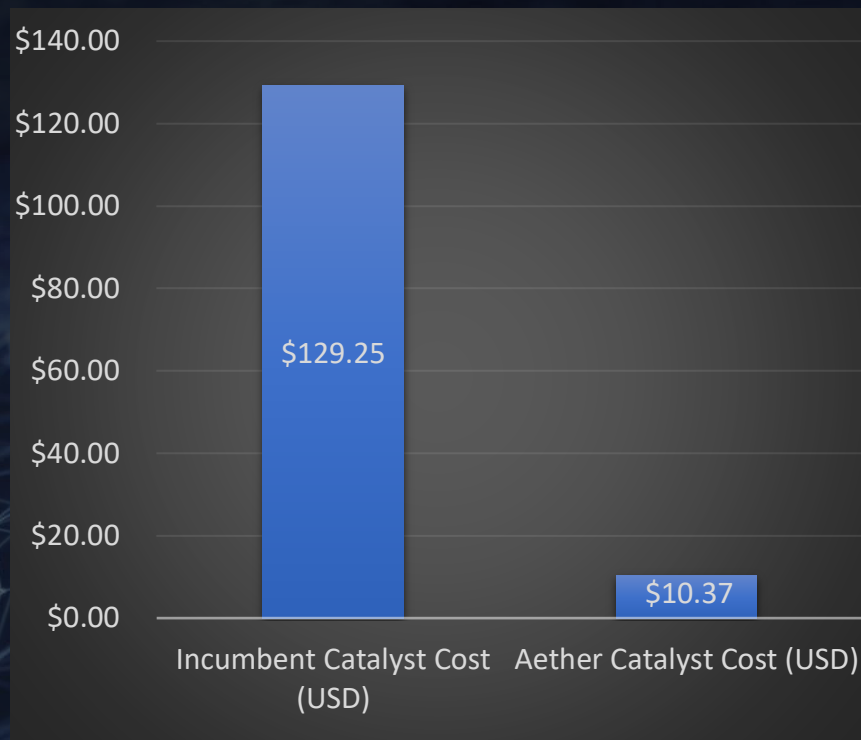
- Applicable to all internal combustion engines including trucks, cars and motorbikes
- Approximate 90% cost reduction in catalytic converter catalyst
- Initial (unoptimized) performance is similar to costly incumbent catalytic converters
- Easily integrated into existing supply chain







## MATERIAL COST COMPARISON OF AETHER AND CURRENT CATALYSTS



- Cost Savings Accrue to the Original Equipment Manufacturer's Bottom Line
- Over 10X reduction in catalyst material cost
- Aether utilizes standard material processing technique
- Aether's material cost savings results in lower cost of catalytic converters



# PLATINUM, PALLADIUM, RHODIUM IN AUTOMOTIVE CATALYSTS

The precious metal component of automotive catalyst is a massive expense

PGM Utilization in Automotive Catalysis 2018					
	Consumption (oz)*	Avg Price (2018)**	Value	Aug 2020 Avg ***	Value
Platinum	3,128,000	\$ 879	\$ 2,750,200,160	\$ 941	\$ 2,942,666,000
Palladium	8,721,000	\$ 1,029	\$ 8,975,914,830	\$ 2,170	\$ 18,922,389,750
Rhodium	869,000	\$ 2,052	\$ 1,783,535,600	\$ 8,929	\$ 7,758,866,500
			\$ 13,509,650,590		\$ 29,623,922,250

\*Johnson Matthey

\*\*Kitco

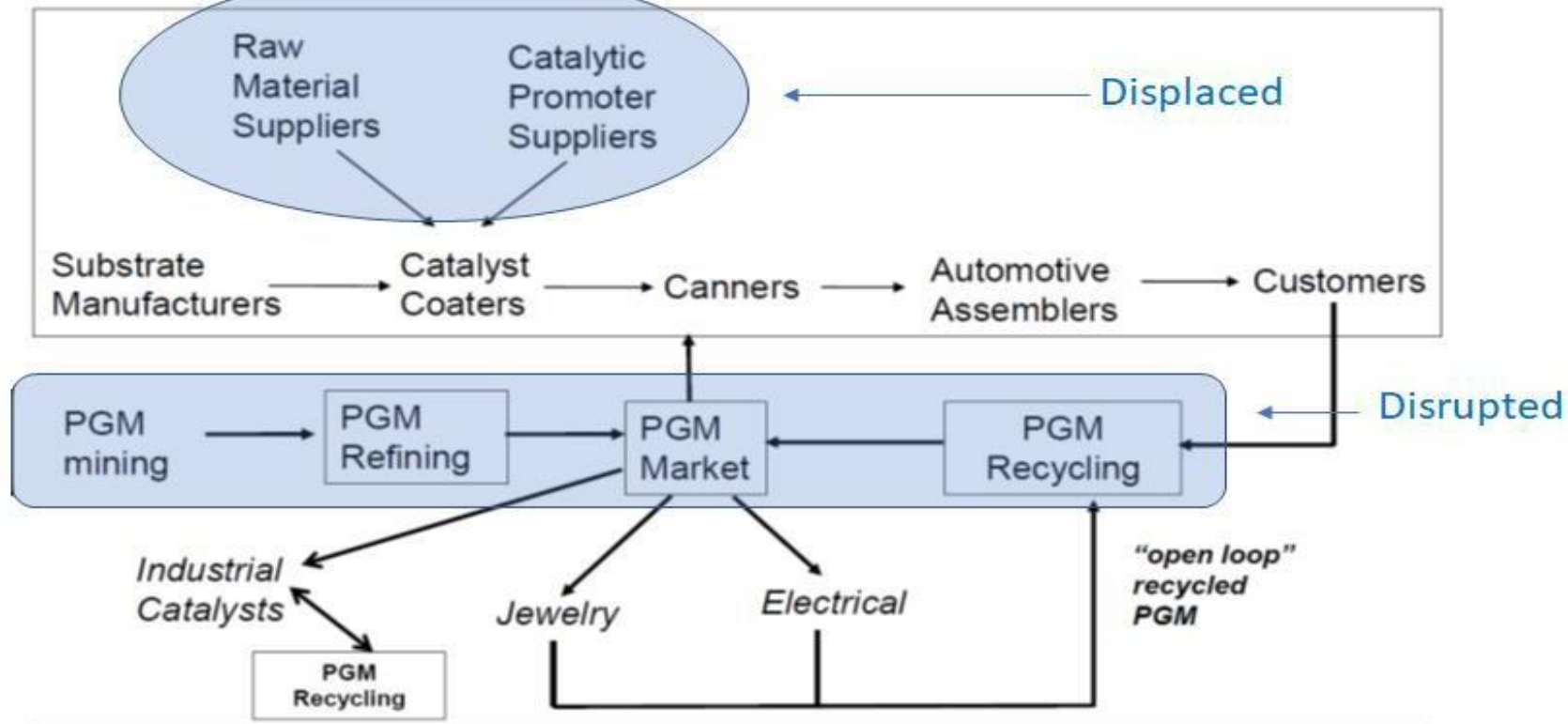
\*\*\*Kitco

- Aether's catalyst replacement for gasoline powered vehicles makes up about 67% of 2018 auto production
- Market size of over \$19 Billion at today's prices....PER YEAR (in red above)
- Current palladium price due to auto catalyst demand represented 136% of 2019 production costs



# AETHER'S TECHNOLOGY FITS SEAMLESSLY INTO EXISTING PRODUCTION CHAIN

## Supply Chain for Automotive Catalysts







## SMALL MOTORS EMISSIONS REDUCTION



- Significant urban pollution comes from small motor exhaust
- Current pollution standards are lower and met without catalytic converter
- Globally governments are aggressively looking for ways to reduce pollution
- Indication of potential tightening of regulations in 2023/24 timeframe requiring catalytic converters for small motors





## SMALL MOTORS EMISSIONS REDUCTION

- Aether is directing automotive catalyst technology towards nearer term opportunity for commercialization: Small Motors Emission Reduction
- Aether's low-cost catalyst technology can reduce emissions without adding significant cost to manufacturing cost of small motors



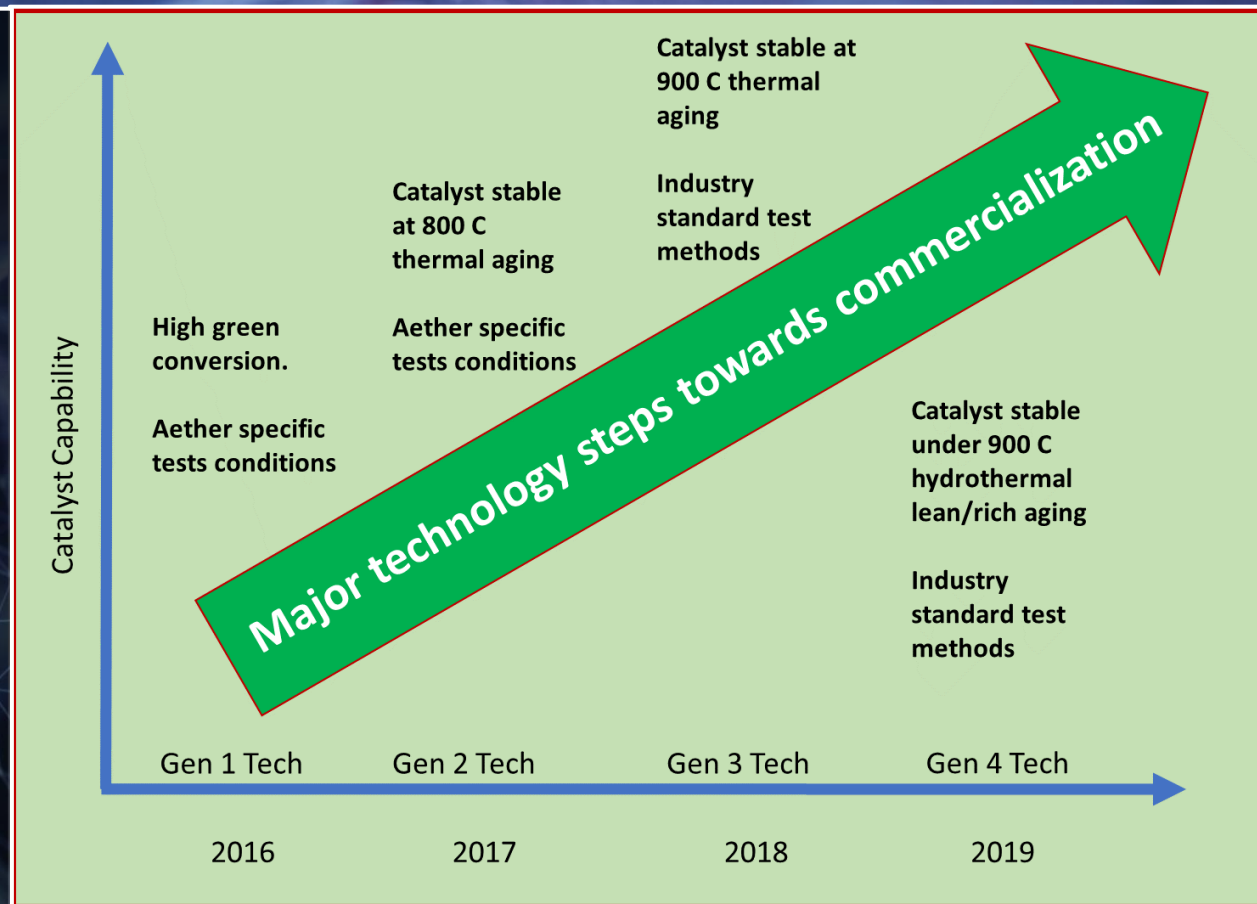
- Aether is adapting its latest Gen 4 Catalyst for the small motor market as a commercial entry point while refining the technology for the automobile industry





# MAJOR TECHNOLOGY STEPS TOWARDS COMMERCIALIZATION

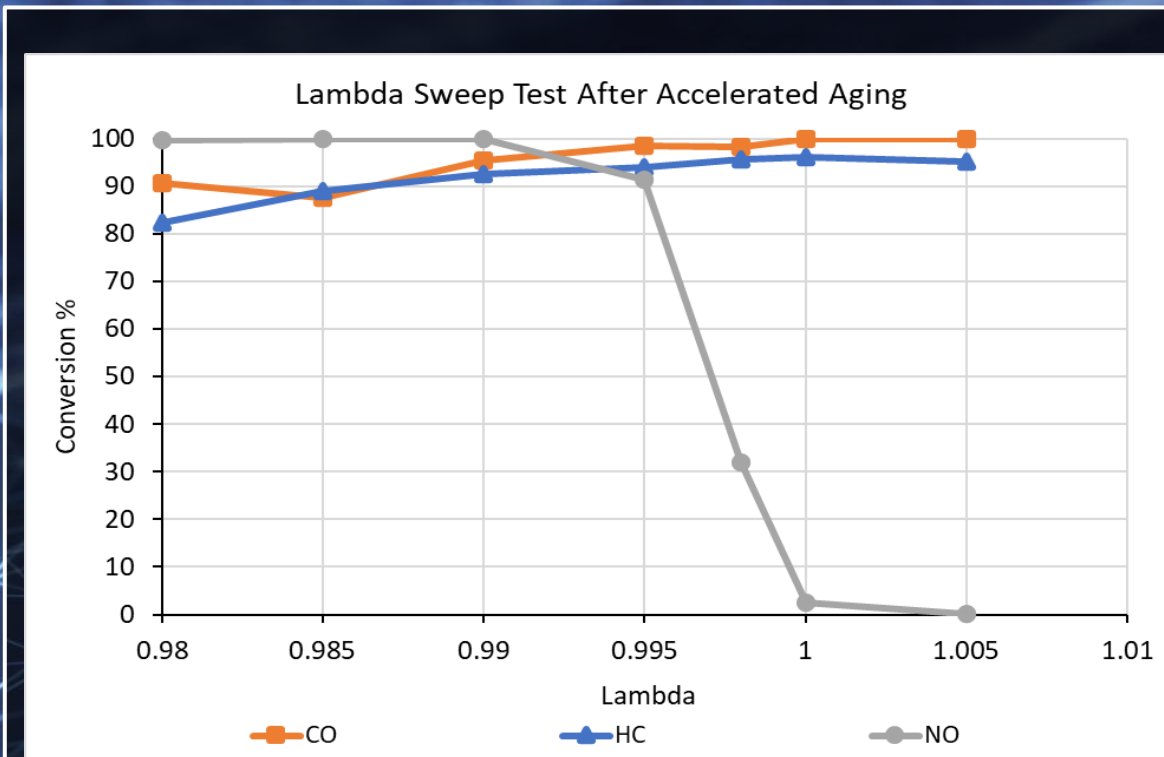
Aether has overcome most of the technical challenges inherent with base metal catalysts in a very short time frame







## CURRENT STATUS AFTER ACCELERATED AGING



This graph demonstrates high exhaust gas conversion after 100 hours of 900° C hydrothermal rich/lean accelerated aging as seen by a Lambda Sweep Test done at a temperature of 450° C

Based on OEM feedback, this is approaching the range of their expectations



## AETHER'S TECHNOLOGY HIGHLIGHTS

- Approximately 90% cost reduction for automotive catalytic converter catalyst
- Simple wash-coating methods that are scalable to high volume and low-cost coating processes in use with current catalysts
- Third party testing verifies exhaust gas conversion of Hydrocarbons, Nitrous Oxide and Carbon Oxide similar to current expensive catalyst technology
- Current catalyst technology designed for automotive use can be used as immediate entry into small motors market to reduce pollution from lawn mowers, generator sets, snow blowers, etc.





## DEVELOPMENT PROGRESS AND SUCCESS

- Tremendous interest from Original Equipment Manufacturers (OEMs) for an alternative to platinum, palladium and rhodium catalysts
- Aether has tested prior generations of catalyst with two (OEMs)
- Aether, with its new larger capacity lab, will endeavor to add another two OEMs or Tier 1 testing partnerships during the year 2020
- Aether has received extensive monetary support from the Canadian government - \$800k in the last four years, as well as valuable business development assistance





# AETHER IS LEVERAGING ITS RESOURCES WITH NON-DILUTIVE EXTERNAL FUNDING

Research  
Project  
Definition



Funding  
Support  
Agencies



Funded  
Projects  
Partners



Total funding of \$800,000 awarded to Aether over the last four years





## MANAGEMENT TEAM



Paul Woodward, President. Paul is a former investment banker with more than 25 years of experience in venture capital with a concentration in corporate finance.



Greg James, Chief Operating Officer. Greg is the former Chief Engineering at Ballard Power Systems with over 25 years of experience bringing new technology to market.



Neil Branda, Director. Neil is Professor of Chemistry and a Canada Research Chair at Simon Fraser University. Mr. Branda is also the Executive Director at 4D Labs.



## CAPITAL STRUCTURE

	Shares	%
Conation	21,834,178	52%
Employees & BOD	8,874,579	21%
Cascade	2,400,000	6%
Former Emp. Escrow	1,267,500	3%
Investors	7,404,455	18%
	41,780,712	





Symbol:

CSE: ATHR

FSE: 2QZ

Shares Outstanding:

41,780,712

(Sep 2020)

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