

## Company Overview

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### **Ecellix Inc**

Washington Clean Energy Institute  
4625 Union Bay Place NE – Suite 101  
Seattle WA 98105  
Founded January 27, 2018 (WA Corporation)

### **Jerry W. Schwartz JD LLM**

Chairman & CEO | Founder  
206-390-3750  
[jerry.schwartz@ecellix.com](mailto:jerry.schwartz@ecellix.com)  
[www.ecellix.com](http://www.ecellix.com)

## Our Mission: *Reimagining the Future of Batteries*

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Lithium-ion batteries, first commercialized in 1992, have become the standard energy cell for electric vehicles, power tools, consumer devices and industrial storage systems. Battery energy capacity has grown by an average of 1-2% / year, and \$ billions are being spent in R&D to accelerate this rate. More energy in the same space would empower cars to drive further, cell phones and tools to last longer, and backup systems to keep our home and factory power on for longer. Our Mission: *Reimagining the Future of Batteries*, aims to accomplish this through eCell™ - a radical new anode material.

## The Opportunity / Total Addressable Market

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Storing more energy in the same battery cells requires a radical new anode material with more energy storage capacity than graphite, the industry standard since 1992. Silicon is the material of choice since it holds over 10x as much energy as graphite. Our patent-pending eCell, a porous silicon-carbon composite material with 3-5x more energy capacity than graphite. Initially, this will permit new batteries to offer 20-50% more energy per cell. Ultimately, new higher-capacity cathodes will step up to tap eCell's full potential, and batteries could realize 300-500% more energy than today's cells. Global sales of Li-ion batteries are forecast to rise to \$100B by 2024 and to top \$200B by 2030, and the battery anode materials share (the total addressable market for eCell) is estimated at \$10-20B over this same horizon.

## Our Solution

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eCell™ is a porous silicon-carbon composite powder that is 90% Si and 10% C. eCell's unique sponge-like structure has micron-sized particles with nano-sized pores and walls. This delivers on the high energy capacity of Silicon and the swell-tolerance of nano-sized features. Micron-sized particles offer better areal density, conduction, tap density, and anode loading than nano-sized particles. Our simple fabrication process begins with inexpensive commodity materials that are a fraction of the cost of nano-particle materials. In half-cell testing, eCell anodes last over 1000 cycles and retain 80% energy capacity for nearly 600 cycles. eCell could become a drop-in replacement for graphite in full-cell battery manufacturing, requiring minimal changes in factory tooling and assembly procedures.

## Our Business Model

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Ecellix offers customers the option of buying eCell powder or licensing our patent-pending manufacturing process. We plan to manufacturing at scale in a strategic partnership with a global contract manufacturer. Our executive team's core expertise in forging global licensing and strategic relationships is well-suited to execute this strategy. Whether customers desire attractive product pricing or the ability to integrate eCell production into their factories, we are poised to deliver.

## Our Values

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At Ecellix we model humility and recognize that others within and outside our industry may hold the spark of creativity and invention containing the next breakthrough. We eagerly seek the guidance and counsel of customers and partners, investors, directors, and consultants. We strive to be the best version of ourselves, leveraging our products and technologies to help create a better and more sustainable world, while building an inclusive, respectful, safe, diverse company of high integrity that our team members, partners and our families can be proud of being associated with.

## We Are Gaining Traction with Prospective Customers and Strategic Collaborators

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In May 2018, we publicly announced eCell for the first time at the TechConnect Conference in Anaheim CA. They awarded Ecellix their Global Innovation Award for 2018. eCell's technical data have been reviewed by industry leaders, including prospective customers, licensees, collaborators, and investors. As a result, we are pleased to report that we have NDAs, MOUs or other agreements in place reflecting the interest of these leaders, including:

- Battery and Anode Materials Manufacturers – LG Chem, Panasonic/Sanyo, Samsung, Hitachi Chem, Pyrotek (together, these represent over 50% of global battery sales and over 50% of battery anode materials sales)

- Battery Integrators – BMW/GM/Ford: EVs, PACCAR: Trucks, Lockheed/Honeywell: Defense, McKinstry: Buildings
- Energy – ExxonMobil: We were the #1 presenter at Exxon’s 2019 Sustainability Day in Houston
- Anode Manufacturing – Pyrotek (leader in mined and synthetic graphite manufacturing)
- University Commercialization Testbeds – UW Clean Energy Institute
- National Laboratories – Pacific Northwest National Labs (PNNL) and Argonne National Labs

## The Competition

About a dozen ventures are pursuing high-silicon anode materials, and to our knowledge all other firms are developing very complex formulations of carbon / silicon nanomaterials containing graphene, silicon nanowire, or similar approaches. The four PR leaders are Sila Nanotechnologies, Amprius, Enevate and Nexeon. None have announced product sales beyond test quantities to date. Sila has been the most aggressively capitalized, recently closing a \$170M equity round at a \$1B valuation. In 2016, Sila publicly disclosed 10-yr pricing targets at a very high premium to synthetic graphite’s current prices. The simplicity of eCell’s fabrication of a micron-scale porous Si/C composite structure from commodity materials is positioned to become the low-cost producer of Si/C anode materials.

## Corporate Leadership

The company is led by an exceptional team with multiple successful exits and an average of 25+ years of experience in companies as diverse as Microsoft, GE, Apple, IV, Dow, Oracle, MCI, Cray, Sprint and Lockheed Martin.

### Management Team

Jerry Schwartz JD LLM, Chairman & CEO | Founder\*  
Jason Schwartz, Chief Strategy Officer | Founder\*  
John Anderson, SVP Products | Founder\*

Geoff Deane PhD, Chief Technology Officer  
Brad Kayton, CFO and Secretary to Board  
Bill Wiles JD, VP Strategic Dev/International  
Chris Venti, VP Manufacturing  
David Liddle, VP Corporate Development

### Board of Directors\* and Advisors

Brian Turner\*  
Bartosz Wojszczyk PhD\*

Brian Holloway PhD, Chief Science Advisor (A)  
Jen Houston, Chief Marketing Advisor (A)  
Lonnie Rosenwald JD, Legal Advisor (A)  
Jay Kidd, Strategic Advisor (A)

## Select Bios

**Jerry Schwartz, JD. CEO - Founder.** Fortune 500 and start-up experience commercializing R&D and prosecuting product and market opportunities globally. Drove over 50 product launches, led over 100 strategic partnerships (> \$1B), setup and managed over 50 distribution channels including over 200 OEM licensees. Accomplished in the “C-suite” (CEO, COO, CMO and CLO). As Director of Microsoft’s Office of International Affairs, nominally Microsoft’s “State Department”, Jerry was responsible for executive engagement with senior governmental, corporate and NGO leaders guiding MS Asia-Pacific & India subsidiaries generating over \$20B annual revenues. Jerry holds BA/BS/MBA and JD degrees from the University of Puget Sound and an LLM in International Law and Tax from Salzburg University. Jerry has served as an U.S. Air Force JAG officer, university trustee, Entrepreneur-In-Residence at a major research university, industry advisory board member/chair and board member for multiple companies.

**Geoff Deane, Ph.D. CTO.** A technologist with broad business capabilities, Geoff leads Ecellix’s science and engineering team in R&D and product development. From 2008 to 2015 Geoff was VP/ GM for the R&D division of Intellectual Ventures, a firm managing over \$5B in investment capital and holding over 30,000 patent assets. From 2002 to 2008, Geoff was CTO / EVP for Inogen, Inc.(NASDAQ: INGN), a Santa Barbara, California based medical device manufacturer of novel respiratory care solutions. Previously, he was CTO and Director of Project Engineering of Clipper Windpower (formerly listed as CWP-L). Geoff received his Ph.D. from the UC Santa Barbara in Mechanical Engineering, and his B.S. in Civil and Environmental Engineering from the Massachusetts Institute of Technology. He is co-inventor of more than 130 issued and pending U.S. and international patents.

**Jason Schwartz, CSO – Founder.** Jason is a 3<sup>rd</sup>-generation entrepreneur, winner of national business plan competitions and an experienced project leader. While a student at WSU he founded Ecellix Inc., recruited a CEO, and transitioned the leadership to an experienced team of executives. Jason has been mentored by several exceptional leaders, including a U.S. Congressman, several CEOs and a CFO for several publicly listed companies.

**John Anderson. SVP Products - Founder.** John brings over 40 years of executive and technical leadership in Fortune 50 and startup ventures. He has served as a principal product and technology lead in energy, biotechnology, homeland defense and software ventures and also served in C-suite roles (CIO, CTO, COO, CEO and CFO) in those industries. He was won recognition as a Chief Quality Officer for an international logistics venture. Mr Anderson served Fortune 50 ventures (Sprint, Ashland Inc, Weyerhaeuser, May Department Stores)

in a variety of turnaround roles in technology, software, marketing, finance, and strategic development assignments. John serves on the Boards of several humanitarian ventures, and a collection of SME businesses. He earned an MBA (U.K.-Marketing, magna cum laude), a BS (O.U.-Physics, summa cum laude), and is listed in several Who's Who publications. He served as a commissioned officer of the US Navy, assigned to Adm Rickover's nuclear power staff.

**Chris Venti. VP Manufacturing.** Chris brings over 30 years in senior leadership roles with 'C-level' experience as CEO, COO, CMO positions. Developed and implemented the first "JIT/lean" assembly line within General Electric in 1981, and subsequently implemented manufacturing process reengineering projects in more than 50 domestic and international firms in many industries. He led the operations team and was the architect of a new 'flow' process that allowed a venture capital group to grow a sheet metal contract manufacturing company from \$16 Mil/year to \$125 Mil/year over an 8-year time span. He also fully developed an integrated composites manufacturing process to support \$100 Mil in annual revenues. Chris has served in various manufacturing, technical and executive posts for General Electric, Boeing, The Trane Company, Advantac, Polymer Technology International, National Industrial Concepts, and MicroSurgical Technology companies. He holds an earned BSME from the University of Missouri.

## Awards and Recognition



Since its launch in 2002, Strategic News Service's annual *Future in Review (FiRe) Conference* has consistently been cited as the most credible source of predictions for both vital technologies and geopolitical trends.

Each year, the FiRe staff reviews and selects a small number of emerging companies that they predict will shape the future. These companies are named **FiRe Starters**.

On October 8, 2019 at Lodge at Torrey Pines Golf Course, Ecellix was presented to the conference attendees as a FiRe Starter.

In announcing 2019's Fire Starters to the audience, SNS founder Mark Anderson noted that "...over 90% of *FiRe Starters* have gone on to commercial success!"

Ecellix is quite proud to be included in this august list!

In March 2019, Ecellix presented to about 600 investors at the Keiretsu Forum Northwest Angel Investor Expo. The Expo was held in Redmond Washington at Microsoft's Executive Briefing and Conference Center.

Expo attendees are each given \$3 Million in "Expo Bucks" to invest in their choice of presenting firms as an expression of how they value them.

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Of the 19 ventures presenting, Ecellix was deemed more valuable than 17 others, placing #2 in the Expo's ranking.

In an interesting coincidence, the Expo's #1 ranked firm, Pattern Computing, is founded by Mark Anderson, who also founded and leads the Strategic News Service and sponsors the annual Future In Review Conference!

Ecellix made its debut as a venture in May 2018 at the TechConnect World Innovation Conference and Expo in Anaheim California.

Speaking to a room of global battery industry experts, Jerry Schwartz merely introduced a 2-minute video recorded on an iPhone and closed with our booth number.

More than 20 battery industry executives visited the Ecellix booth and requested appointments to discuss eCell. Since then, several have conveyed their commitment to evaluate eCell when we begin offering commercial quantities.

### Award Winning eCell™ Technology



Ecellix Inc.,  
United States

Increased Capacity Retention of Silicon Anodes for  
Lithium Batteries

**TechConnect** **20<sup>th</sup> ANNIVERSARY**  
**WORLD INNOVATION** **MAY 13-16, 2018**  
CONFERENCE & EXPO **ANAHEIM, CA**

## Investment Opportunity

A-2 Convertible Debt Round (2 year – 8% Interest)  
Proposed Terms:

\$1.5M Total (\$50,000 minimum)  
Converts to shares upon closing initial \$1M priced equity round at lesser of contract discount or \$12M valuation cap.

## Funding History

Series	Date	Source	\$ Amount	Type	% of Equity	# Shares out	Post-money value
A-1	11-2018 to 5-2019	Angels / Friends	Oversubscribed at \$1,005,000	Convertible Debt	N/A until conversion	6.8 M shares	N/A (TBD on Series A-2)

## Financial Projections

	2019* Forecast	2020* Forecast	2021 Forecast	2022 Forecast	2023 Forecast
Revenue	\$0	\$150,000	\$7,210,000	\$41,100,000	\$117,200,000
COGS		\$22,222	\$5,892,693	\$18,735,403	\$29,577,965
Gross Profit		\$127,778	\$1,317,307	\$22,364,597	\$87,622,035
Expenses	\$928,529	\$787,168	\$5,171,162	\$14,019,546	\$20,720,679
EBITDA	<b>(\$928,529)</b>	<b>(\$659,390)</b>	<b>(\$3,853,855)</b>	<b>\$8,345,051</b>	<b>\$66,901,355</b>

Current monthly burn rate: \$100,000 / month

## Use of Funds: \$1.5 Million A-2 Convertible Debt Round

Category	Use	Amount
	Scaling Equipment and Staff TIC	\$540,000
	Establish Initial Manufacturing	\$210,000
	Business Development	\$175,000
	IP Protection	\$125,000
	Working Capital	\$250,000
	Reserves	\$200,000
<b>Total:</b>		<b>\$1,500,000</b>

## Execution Plan

<b>2019</b>	Establish and Staff Technology Innovation Center (CTO and Core Research Team) - <b>Completed</b>
<b>2019-2020</b>	Engage industry leaders in high-impact collaborative development projects
<b>2020-2021</b>	Develop and execute commercial manufacturing scale-up processes.
<b>2020+</b>	Commercial release of eCell™ materials for bulk sales and technology licensing of our process.

## Exit Strategy

Given the magnitude of the market opportunity for advanced silicon anode materials (approaching \$20B by 2030) and the competitive threat our disruptive technology poses, we project an industry sale most likely to a strategic partner or investor within 2-3 years. To date no current silicon anode ventures have had an exit, so comparable multiples are not available at this time, although previously referenced Sila Nanotechnologies recently concluded a \$170M equity round at a \$1B valuation. Given the progressed capitalization and higher valuations of the competition, participating in the Ecellix A round may be the exclusive opportunity for many private investors to secure an equity position in the high potential market.