MARCH 19, 2024
ION HOUSTON

alliance.rice.edu/evd

RICE | ALLIANCE
Rice Alliance for Technology and Entrepreneurship + ion

PITCH PREVIEW: ENERGY VENTURE DAY + PITCH COMPETITION AT CERAWEEK

ABOUT THE HOSTS

Rice Alliance for Technology and Entrepreneurship

Connecting global startups to capital, networks and success, the Rice Alliance for Technology and Entrepreneurship is a catalyst for building successful ventures through education, guidance and connections. Rice Alliance is Rice University's flagship initiative devoted to the support of technology commercialization, entrepreneurship education and the launch of technology companies. Since inception in 2000, more than 3,355 companies have participated in over 300 Rice Alliance programs and have raised more than $25.88 billion in early stage capital. The Rice Alliance powers programming at the Ion, the heart of Houston's innovation corridor in Midtown.

Houston Energy Transition Initiative (Heti) | Greater Houston Partnership

The Greater Houston Partnership is dedicated to strengthening Houston's position as the Energy Capital of the World. The economic vitality and growth of our region's economy is inextricably tied to the energy industry. The Partnership's Houston Energy Transition Initiative (HETI) builds on the best of traditional energy skills and systems to leverage Houston's industry leadership to accelerate global solutions for an energy-abundant, low-carbon future. HETI is a coalition of industry, academic and community partners working together to ensure the long-term economic competitiveness and advancement of the Houston region as leaders of the global energy transition.

Texas Exchange for Energy and Climate Entrepreneurship (TEX-E)

TEX-E is a first-of-a-kind collaboration among The University of Texas at Austin, Texas A&M University, University of Houston, Rice University, and Prairie View A&M University—powered by Greentown Labs and MIT's Martin Trust Center for Entrepreneurship—to create a powerful, student-driven entrepreneurship ecosystem in Texas. TEX-E's mission is to train and empower the next generation of entrepreneurs, leaders, and innovators to lead the energy transition and address the dual challenge.

PITCH PREVIEW: ENERGY VENTURE DAY AND PITCH COMPETITION

Tuesday, March 19, 2024

9:30am	**Registration & Networking**		
10:30am	**Welcome**		
	Brad Burke, AVP, Industry and New Ventures, Rice University; Executive Director, Rice Alliance		
10:35am	**Company Presentations: CCUS, Oilfield Solutions, Analytics, and Minerals**		
	Vaulted Deep	Tellevare Reservoir Services	Decimetrix
	Rocsole	Mesodyne	Mitico
	Xplorobot	Novamera	Capwell Services
	Dersalis	Pix Force	ARIX Technologies
11:30am	**Company Presentations: Batteries, Renewables, Water, & Grid Technologies**		
	Mercurius Biorefining	THEMES	Flux XII
	FeX Energy	SunGreenH2	Vroom Solar
	Adena Power	New Sun Road	C-Power™
	Pani Clean	Ozark Integrated Circuits	GridWrap
12:25pm	**Lunch and Networking**		
1:15pm	**TEX-E Clean Tech Startups** **Introduction: Brad Burke,** Executive Director, Rice Alliance **Welcome: David Pruner,** Executive Director, TEX-E		
	Carvis	BeadBlocker	
	CoFlux	Solidec	
	AirMax		
1:40pm	**Company Presentations: Mobility, Materials, & Hydrogen Solutions**		
	GreenIRR	Litus	AtoMe
	Power to Hydrogen	Arolytics	MITO Material Solutions
	Thiozen	MacroCycle Technologies	Lithium Harvest
	Haffner Energy	Protium Dynamics	
	Momentum Technologies	Marel Power Solutions	
2:35pm	**Closing Remarks**		
	Brad Burke, AVP, Industry and New Ventures, Rice University; Executive Director, Rice Alliance		

COMPANY DIRECTORY

Adena Power | Lewis Center, OH

adenapower.com

Adena Power is an energy storage provider using U.S. raw materials and manufacturing to deliver sodium batteries to behind the meter commercial and industrial customers and utility markets. Adena understands Li-ion will only get us so far and that the market needs battery solutions that are safer, have a flexible duration, and, most of all, have a lower installed cost. Adena is in the demonstration phase of this IP-protected energy storage solution, with an engaged customer pipeline of over 100 MWh to be converted into POs with their first products in 2025.

Nathan Cooley: n.cooley@adenapower.com

AirMax (TEX-E) | Austin, TX

AirMax exists to increase efficiency of existing air conditioning equipment, significantly reducing the system's energy consumption and carbon footprint. Big box retailers are constantly looking for ways to decrease ongoing expenses and meet upcoming carbon footprint reduction goals they have set for themselves. On average, these publicly traded companies have committed to a 45% reduction in their carbon footprint by 2030. How will they achieve their economic and CO2 reduction goals? Using proprietary technology, AirMax can increase HVAC efficiency by up to 42%. HVAC Services is a $25B industry in the United States and our system helps these end-users save money, while saving the planet.

Max Meeks: max.meeks@mba.utexas.edu

Ardent (FKA Compact Membrane Systems) | New Castle, DE

ardenttechnologies.com

Ardent pioneers advanced membrane technologies to accelerate decarbonization and transform the global industrial and energy landscape. Ardent's Optiperm™ platform holds the key to unlock cost-effective and energy-efficient point-source carbon capture across heavy industries like cement, steel and petchem that are underserved by conventional carbon capture and other decarbonization pathways. Unlike conventional separation technologies, Ardent's state-of-the-art Facilitated Transport Membranes (FTM) rely on the chemistry of the membrane itself for energy-efficient separation. Ardent's modular, bolt-on separation technology addresses the cost-efficiency and scalability issues of incumbent solutions, delivering a proven, scalable, energy-efficient, and cost-effective solution that can decarbonize heavy industry at the Gigaton scale. Ardent has over 20 years of manufacturing experience and has a proven track record of taking new technologies from the lab to the field, partnering with global leaders like Chevron, Pfizer, and Braskem to deliver end-to-end solutions at commercial scale.

Erica Nemser: enemser@compactmembrane.com

ARIX Technologies | Houston, TX

arix-tech.com

ARIX Technologies is an integrated robotic inspection & data analytics software company that helps industrial facilities like petrochemical plants, electric utilities, and manufacturing facilities prevent costly shutdowns and environmental disasters due to corrosion. ARIX collects inspection data faster, cheaper, and safer than existing methods while empowering stakeholders with actionable insights through a machine learning based corrosion analytics software platform.

Michael Rowell: michael.rowell@arix-tech.com

Arolytics | Calgary, Canada

arolytics.com

Arolytics is a 30 person seed-stage methane data software company that originated in 2019 out of one of North America's largest oil and gas emissions research groups. We solve the oil and gas sectors largest emissions data challenges. Arolytics specializes in: Emissions modelling via AroFEMP, a strategic planning tool to evaluate technologies and determine an optimized methane management program that meets regulatory and corporate methane objectives at the lowest $/CO2e.Data management via AroViz, a cloud methane management platform that integrates all emissions sensor and other relevant data. AroViz tracks methane reduction progress and draws actionable insights, enabling faster reductions, streamlined operational workflows and data transparency, compliance oversight, and increase in revenue.

Liz O'Connell: liz.oconnell@arolytics.com

AtoMe | Ipswich, MA

Additive manufacturing has undergone huge technological leaps in the last few years, but its continued growth is stunted by its inability to reach beyond prototyping and complex geometries. AtoMe is challenging these limitations and utilizing the unique process flow of metal additive to target exciting new material compositions, featuring properties that not only match but surpass those of traditional cast parts. By reinforcing today's best-in-class metals with carefully selected ceramic nanostructures, AtoMe achieves improvements in strength, temperature resistance, radiation, and quality that will allow for next-gen energy technology to reach new levels of efficiency.

Alexander O'Brien: alexobrien@alum.mit.edu

COMPANY DIRECTORY

Ayrton Energy | Calgary, Canada

ayrtonenergy.com

Ayrton's liquid organic H2 carrier (LOHC) storage technology presents an opportunity for large, scalable, and efficient transport of H2 over long distances while mitigating H2 loss and pipeline corrosion. Ayrton's technology not only facilitates safe and efficient hydrogen storage but also enables its transportation through existing infrastructures, including tanks, rail cars, transport trucks, and pipelines.

Natasha Kostenuk: nkostenuk@ayrtonenergy.com

BeadBlocker (TEX-E) | Houston, TX

Microplastics are small pieces of manufactured plastic less than 5mm in size that can be found in 90% of personal care products. When a person showers, the microplastics found in their personal care products wash down the drain to a water treatment plant and eventually into the ocean. Because microplastics are so small, water treatment plants are unable to effectively filter the microplastics out, contributing to the 5.4 million metric tons of microplastics from personal care products that are in our oceans. BeadBlocker is a multi-part shower and sink drain filter to capture particulate matter before it enters waterways. Once the BeadBlocker filter is full, the customer can mail us their captured plastics, which we will properly recycle. At the same time, the customer's replacement filter will be on the way.

Emma Nicholas: emmalnicholas@gmail.com

BlocPower | New York, NY

blocpower.io

BlocPower is a national climate technology company enabling the building energy transition across American cities. Since its founding in 2014, the company has completed thousands of energy efficiency projects nationwide. BlocPower utilizes its proprietary BlocMaps software platform to help municipalities, utility companies, and sustainability experts plan, manage, finance and implement equitable building energy transition strategies. The company is backed by some of the world's top investors, including Microsoft's Climate Innovation Fund, Goldman Sachs, Kapor Capital,, Andreessen Horowitz and American Family Insurance Institute for Corporate and Social Impact. In 2022, Fast Company named BlocPower the #4 Most Innovative Company in the World.

Donnel Baird: donnel@blocpower.io

blumensystems.com

Blumen | San Francisco, CA

We analyze federal, state, county, and municipal level regulations, codes, and ordinances with a proprietary analysis system. Our system checks these codes against your project area, underlying site data, and all of your project documents to generate a highly custom permit matrix. Blumen integrates our proprietary state, county, and local ordinance and setback data with a custom site layout design tool to optimize siting turbines, arrays, generation tie lines, and O&M facilities. Our systems don't stop at telling you what hurdles you need to cross to get your projects built. Using past regulatory filings and geophysical data, Blumen lets you avoid costly studies, unnecessary permits, and optimize site layout throughout development and construction.

Hannes Boehning: hannes@blumensystems.com

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cpower.co

C-Power | Charlottesville, VA

Tapping the world's largest battery – our oceans – C-Power makes power generation equipment serving a broad range of market applications. Building on our four pilot deployments and tens of thousands of hours of testing, we are currently entering the $15B offshore market to help our customers reduce their operational costs, complexity, and carbon-intensity. Our ultimate target market is the $35B utility-scale electricity generation market. In this initial market, C-Power's patented technology effectively serves as an offshore power strip and Wi-Fi connection, enabling autonomous, electric, and digital applications not possible today. As the company builds scale, revenue, and reach, it will enter the utility-scale market, delivering a new cost-competitive, reliable clean energy resource to the global market.

Reenst Lesemann: rlesemann@cpower.co

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canvass.ai

Canvass AI | Toronto, Canada

Canvass AI puts industrial companies in control of their data to achieve operational excellence. Designed to be readily accessible and quick to deploy, companies use Canvass AI's award-winning patented software for high performance decision making, to future-proof operations, and drive net-zero targets. Backed by Alphabet, and Yamaha Motor Ventures, the company is recognized by CB Insights as one of the top technology companies that is advancing manufacturing.

Humera Malik: humera.malik@canvass.io

COMPANY DIRECTORY

capwell.org

Capwell Services | Houston, TX

Capwell is a methane abatement products and services company. We curb the global emission of methane by capping abandoned oil and gas (AAOG) wells. We provide a cost effective, modular, and easily transportable system that can be applied to even the hardest to reach wells. We cap large amounts of wells in a short period of time, preventing methane emissions for years until P&A can take place. We serve both the public and private sector by immediately mitigating leaks, helping states receive IIJA performance grants and E&Ps meet market demand of clean production as well as avoiding IRA methane fines.

Andrew Lane: andrew@capwell.org

Carvis Energy Solutions (TEX-E) | College Station, TX

Carvis Energy Solutions specializes in harnessing the power of nanotechnology and advanced materials to safeguard and optimize the most critical asset in reservoirs: water. Our advanced solutions are engineered to dramatically cut costs associated with fluid lifting, handling, and treatment, leveraging tailor-made, functionalized particles that enhance reservoir performance. Our focus extends beyond mere optimization of oil production processes across the United States; we're deeply committed to reducing environmental footprints and slashing greenhouse gas emissions. By driving technological innovation, we guarantee significant efficiency and productivity gains, helping our clients achieve cost savings and bolster environmental stewardship in their operations

Henry Galvis: henry.galvis@tamu.edu

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cavernenergy.com

Cavern Energy Storage | Houston, TX

We combine the existing technologies of pumped storage hydroelectric and salt dome caverns to produce a means of long duration energy storage that can be implemented in Texas, Louisiana, and Mississippi. We are raising money to complete our preliminary engineering and develop a demonstration unit to confirm the technology. Underground pumped storage utilities off-the-shelf technology to produce a long duration energy storage that is 70-80% round trip efficient and has more than 10 hours of storage.

William Taggart: william@cavernenergy.com

Coflux Purification (TEX-E) | Houston, TX

coflux.carrd.com

Our solution permanently destroys PFAS in the filtration cycle, using only light and our Photocatalytic Absorbent Foam. Our target market is industrials focused on PFAS remediation specifically in the U.S., where there are there are 192 current policies in 29 states and 72 adopted policies in 21 states, which will continue to drive up demand to an estimated $6.5B total addressable market. Current technologies to remove PFAS are incredibly energy intensive and don't permanently destroy PFAS. By using Coflux, customers can avoid energy use (and emissions) through using our solution, which uses significantly less energy per gallon of water processed.

Dana Vazquez: dv25@rice.edu

Decimetrix | Houston, TX

decimetrix.com

Decimetrix, founded by Alejandro Zotti, a UC Berkeley alumnus with over 15 years of experience in the Oil & Gas industry, offers a comprehensive carbon footprint management solution. The company, headquartered at GreenTown Labs, owns all its intellectual property and is profitable. Their platform, Decimetrix® Green Dragon, has been implemented in over 3000 wells and 50 facilities, addressing sustainability and energy efficiency in the energy industry.

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Dersalis | Vitória, Brazil

dersalis.com/en

Dersalis pioneers industrial safety through cutting-edge wearable devices, with a focus on accident prevention and occupational health. Explore the diverse landscape of wearable technology and its applications across various industrial settings. Unearth essential features and data types, enhancing adaptability in high-risk environments, championing proactive safety measures, and promoting employee well-being. Experience concrete successes as wearable devices revolutionize safety practices. Join us in unveiling the crucial role of wearable technology, cultivating a preventive culture, and shaping the future of occupational safety. Stay tuned for our upcoming launch of the first EX wearable, dedicated to human factor analysis, marking a groundbreaking advancement in workplace safety.

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COMPANY DIRECTORY

Dynamik Fluid Power | Houston, TX

Dynamik Fluid Power will be a world leader in the high pressure pump market, with the world's most advanced high efficiency reciprocating pump technology to substantially reduce operating costs, maintenance costs, and equipment downtime, for significant reductions in energy use and reduced carbon footprint.

Sean Thomas: sthomas@dynamikfluidpower.com

EarthEn Energy | Phoenix, AZ

earthen.energy

EarthEn makes thermo-mechanical energy storage solutions that use CO2 in a closed loop to store 4-100+ hours of energy in a uniquely flexible & future-proof manner. Our main solution, EarthEn Pods, is a thermo-mechanical energy-storage system—meaning that it leverages temperature and pressure differential in CO2 to charge and discharge its system. The system uses supercritical CO2 (sCO2), which is carbon dioxide in a state that has high density, especially at high pressures, allowing for compact storage and efficient utilization of space. Furthermore, sCO2's low viscosity, high heat capacity, and non-toxic nature allow EarthEn to create a compact, small-footprint system. EarthEn's technology utilizes 27 metric tons of CO2 per megawatt hour. We can also convert CO2 pipelines into energy storage, making CCUS hubs, and blue hydrogen potential targets for us.

Manas Pathak: manas@earthen.info

Elemental Advanced Materials | Houston, TX

elementaladm.com

Elemental has developed a patented, single step process that produces turbo stratic graphene and hydrogen from mixed and contaminated plastics, along with other organics. A CO2e neutral machine, the size of a large SUV, is designed to produce 20,000 lbs/day of single to multi layer graphene and 5,000 lbs/day of hydrogen. This production would be from a feedstock of 25,000 lbs of plastic. The process uses chemistry and thermodynamics to break down any organic material introduced to the molten metal bath. The process can handle materials that have chlorine, fluorine or bromine in them. The process does not produce a waste stream as everything that comes off the process has a value. Elemental expects to begin production with its first machine in the first half of 2024.

Ian Bishop: ibishop@elementaladm.com

excipioenergy.com

Excipio Energy | Houston, TX

We were founded by 2 ex-offshore oil and gas development experts. Excipio holds two patents, one on a platform that integrates wind, wave, currents, and OTEC together into one system, with room to spare for other Blue Economy activities. But our latest patent, and our subject for this proposal, is a game changer. It is an Enhanced OTEC (EOTEC) system that makes 2x the power of conventional OTEC for the same CAPEX; replaces the cold water riser (14m in diameter for a 100MW system) with two smaller risers within current oil and gas technology capabilities; eliminates the water column mixing; and reduces the topsides space requirement by a factor of 5. The reduction in topsides space and use of conventional riser pipes means EOTEC can generate commercial amounts of power from one platform and is ideal for repurposing retiring offshore oil and gas deepwater assets.

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fexenergy.com

FeX Energy | Montreal, Canada

FeX Energy is a startup born in McGill University's world class Alternative Fuels Lab. We're developing a groundbreaking long duration energy storage (LDES) solution to decarbonize industry to cut dependence on fossil fuels and enable a clean energy revolution. Our proprietary iron reactor is the core of this innovation. The key attributes of FeX Energy's LDES solution make it an ideal fit for industrial processes requiring heat up to 900°C and/or power, for example chemical processing, refining, or other industrial processes. Our passionate and diverse team is actively working on product development and seeking strategic partnership for a pilot.

Hayden Smith: hayden.smith@fexenergy.com

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flux12.com

Flux XII | Madison, WI

Flux XII is building grid batteries to expand renewable electricity. This has economic, reliability, and emission impacts. Instead of burning dirty carbon fuels for energy, we upgrade sustainable carbon feedstocks to store clean energy. We've developed organic chemistries with targeted flow battery properties, produced them in industrial batch reactions, and are testing them in prototypes that could about power a house! In 2024, we are expanding our team and partners to create a materials platform primed for strategic scaling to a mega-scale impact by 2030.

Patrick Sullivan: patrick.sullivan@flux12.com

COMPANY DIRECTORY

geowellex.com

Geowellex | Macaíba, Brazil

Geowellex field services focus on the data acquisition, processing and analysis while drilling, as well as detailed descriptions of cutting samples and customized reports and analysis for operators. Through a secure and connected infrastructure in the field, we transfer our data to a private cloud, providing real-time remote monitoring systems. We also have innovative and award-winning technologies for data analysis, including an AI-system for automated geological analysis and generation of synthetic LWD curves (AUTOMUD), as well as an advanced gas system and real-time formation evaluation - Gas Oil Logging while Drilling (GOLD).

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greenirr.com

GreenIRR | Westport, CT

Right now, trucking companies are facing the threat of losing customers, due to increasing regulation that requires their customers to report their supply chain emissions. This means a new and urgent demand for emissions data from customers that has never been seen before in the trucking industry. This is where greenIRR comes in. GreenIRR is a carbon accounting platform built specifically for the trucking industry, that automatically measures fleet emissions and generates regulation compliant reports at the push of a button. We integrate into existing vehicle monitoring systems and fleet management software, to collect emission data sourced directly from the vehicle. This allows fleet managers to keep customers who require emissions data and comply with new regulations, while reducing the cost of data collection and reporting.

Celine King: celineking@greenirr.com

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gridwrap.com

GridWrap | San Diego, CA

Headquartered in San Diego, GridWrap® is a woman-owned company leading the charge in addressing the global energy crisis. GridWrap®, Inc., formerly ALD Technical Solutions LLC, is dedicated to delivering high-quality Grid Enhancing solutions for utility and grid infrastructure. Recognizing the crucial role of the grid as the backbone of modern civilization, the company focuses on creating a robust, reliable, and resilient grid to support clean electricity goals.

Talieh Zargar: talieh@gridwrap.com

haffner-energy.com

Haffner Energy | Paris, France

Haffner Energy is the designer and builder of SYNOCA, HYNOCA and SAFNOCA. SYNOCA, a disruptive carbon-negative solution for producing competitive renewable syngas. HYNOCA is a world Game-Changer for the renewable hydrogen market and related decarbonization, protected by 15 patent families, and over 100 international patents. HYNOCA processes clean syngas to produce cost competitive Hydrogen. SAFNOCA value proposition is the combination of SYNOCA technology with mature technologies to produce clean fuels (SAF, methanol..) as well as biogenic CO2 which can be upgraded to added value products.Haffner Energy core expertise is in energy engineering and biomass to energy projects for nearly 30 years. This long experience has enabled since 2010, the maturation and subsequent development of HYNOCA, a disruptive renewable hydrogen process from biomass. Since 2023 Haffner Energy team is developing SAFNOCA opportunities.

Nathalie Ionesco: nathalie.ionesco.ext@haffner-energy.com

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hyperfuel.us

Hyperfuel Labs | Houston, TX

Hyperfuel Labs is an industrial-scale testbed and FOAK accelerator for clean fuels technologies. It has a10 acre, 25MW balance of plant providing pre-permitted land, multi megawatt power, deionized water, steam and access to H2 and CO2 pipeline.

Ali Adoudou: ali@hyperfuel.us

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icarusrt.com

Icarus RT | Carlsbad, CA

Icarus' Quartet system converts PV arrays into hybrid PV/thermal systems, harvesting waste heat as hot water to increase energy production while also improving PV panel efficiency by 12-18%. Quartet doubles the energy output per square foot and cuts the CO2 emissions and payback period in half. Icarus has demonstrated Quartet's viability at the 2.5 kW scale, with additional projects underway up to 250 kW. Quartet has full retrofit capability on existing PV arrays, as the proprietary heat extractors noninvasively attach to commercial solar panels.

Mark Anderson: manderson@icarusrt.com

COMPANY DIRECTORY

liquid-charge.com

Liquid-Charge | Houston, TX

Liquid-Charge is developing fuel-cell systems applied as electric-vehicle range extenders for fleets and heavy duty vehicles. Our fuel cell system is unique because it efficiently uses a cheap liquid fuel, (m)ethanol, yet CO2 is effortlessly retained on-board the vehicle as a chilled liquid. This liquid CO2 is collected at fuel depots and eventually brought by truck to either a recycling or sequestration opportunity. Our system offers the convenience of economics of liquid fuels, the efficiency of fuel cells, and the benefits of electric transportation--silent torque and zero-emissions.

Jared Moore: jared@liquid-charge.com

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lithiumharvest.com

Lithium Harvest | Houston, TX

Lithium Harvest is at the forefront of sustainable lithium extraction, utilizing proprietary technology to convert oilfield wastewater into high-quality lithium compounds. As a market leader dedicated to minimizing environmental impact, our innovative approach not only addresses the growing demand for lithium in the electric vehicle and battery sectors but also significantly reduces waste and conserves water resources. Our commitment to eco-friendly practices and efficient extraction methods positions us as a vital player in the sustainable energy landscape, ensuring a greener future while catering to the fast-evolving needs of the battery market with cost-effective, responsibly sourced lithium solutions.

Sune Mathiesen: sma@lithiumharvest.com

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lithostechnology.com

Lithos | Bessemer, AL

The company's mission is to deliver sustainable lithium production without the use of evaporation ponds. AcQUA™ is LiTHOS' patent-pending technology that spans the complete value chain from the conditioning and pre-treatment of raw brines through the DLE phase into the polishing and purification of battery grade lithium feedstock. LiTHOS has two fully operational processing facilities: a 4,000 sq ft lab in Denver, CO and a 55,000 sq ft complex in Bessemer, AL. LiTHOS is working under contract and processing brines from the largest producing Salars in Chile and Argentina, and the Smackover reservoir in the Southeastern United States.

Scott Taylor: scott@lithostechnology.com

Litus | Calgary, Canada

litus.ca

Litus is an emerging leader in using nanotechnology to provide groundbreaking solutions to some of the world's biggest energy challenges. Litus was formed in Calgary, Canada in 2019, by a team of experienced scientists and engineers. The Company's first offering is a solution that selectively extracts lithium directly from water sources using a proprietary and patent-pending nanomaterial composite. This technology enables companies to recover lithium with unmatched purity, speed and efficiency, resulting in far lower financial and environmental costs than any other known method.

Ghada Nafie: ghada@litus.ca

MacroCycle Technologies | Cambridge, MA

MACROCYCLE
CIRCULAR PLASTICS, ZERO CARBON

www.macrocycle.tech

MacroCycle upcycles PET and polyester plastics with lower emissions than competing "Advanced Recycling" processes. Our patented process technology exploits thermodynamics and catalysis to achieve the recovery of a new intermediate species from plastic waste (PET bottle flakes, polyester textiles, and other functional polymers), followed by re-polymerization of these intermediates to produce high-quality plastics. This process offers virgin-grade plastics to brands currently using vast amounts of plastics packaging. It can be produced with zero-carbon emissions as the process is fully electrifiable, and at cost parity with fossil-based plastic since it is 80% more energy efficient and 50% less capital intensive. At widespread industrial scale operation, this will be an advanced recycling technology that is able to convert and upcycle 90% of more than 110 million tons / year unrecycled PET, Polyamide and Polyurethane plastics back into high molecular weight "virgin grade" polymers.

Stwart Peña: stwart@macrocycle.tech

Marel Power Solutions | Plymouth, MI

MAREL
POWER SOLUTIONS

marel.tech

Electrification relies on batteries storing DC energy, while most applications and sources use AC. Bridging the DC-AC gap presents singular challenges, especially the precise water-based heat evacuation from electrically live high-power semiconductors. leading to over-complicated converters that are slow to market, expensive, limited in scalability, un-reusable, and inefficient in semiconductor utilization. Marel fundamentally reimagines how electrical and thermal paths interact within a power converter, allowing semiconductors to be utilized to their fullest. The resulting ultra-compact, three-dimensional power blocks reduce size 75%, weight 50%, with a third fewer semiconductors. It's quickly customizable, fast to market, materials efficient, reusable, & massively scalable.

Amrit Vivekanand: amrit.vivekanand@marel-power.com

COMPANY DIRECTORY

mercuriusbiorefining.com

Mercurius Biorefining | Ferndale, WA

Mercurius Biorefining is developing and scaling up technology to produce carbon negative drop in fuels and chemicals using its patented REACH™ process. REACH uses a liquid phase catalytic approach to produce fuels and chemicals from lignocellulosic feedstocks such as agricultural and forestry residuals (stover, bagasse, rice or wheat straw, wood chips or sawdust) or MSW. Primary fuel products include sustainable aviation fuel, renewable diesel, and marine fuel. In addition to fuels, renewable chemical products include FDCA, a precursor to the polymer PEF, formic acid, levulinic acid and furfural.

Eric Seck: eric@mercuriusbiorefining.com

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mesodyne.com

Mesodyne | Somerville, MA

Mesodyne's LightCell is a transformational energy solution that enables people, sensors, autonomous vehicles - virtually any system that requires portable power - to perform their mission beyond what is possible today and extend range and endurance across a multitude of use cases. In the LightCell, a patented thermophotovoltaic (TPV) generator converts gaseous and liquid fuels into electricity (natively JP-8 compatible) with no moving parts delivering unprecedented runtimes in a highly portable form factor.

Veronika Stelmakh: stelmakh@mesodyne.com

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mitico.tech

Mitico | Los Angeles, CA

Mitico offers state-of-the-art services and equipment to capture carbon dioxide (CO2). Our patent-pending granulated metal carbonate sorption technology (GMC) captures over 95% of the CO2 emitted from post-combustion point sources (flue gases). With a low footprint and few permitting requirements, GMC is easily and quickly fitted to post-combustion processes, including gas-fired power plants and boilers, and waste-to-energy and biomass-to-energy facilities. We are able to enable carbon capture, utilization, and storage (CCS) as a service at a low cost.

Clement Cid: clement@mitico.tech

MITO Material Solutions | Indianapolis, IN

mitomaterials.com

MITO Material Solutions makes products lighter, stronger, and more durable. Our patented platform technology is the first and only process with the power to functionalize substances like graphene and biomaterials—creating hybrid additives that give fiber-reinforced composites and thermoplastics lab-verified improvements in strength, durability, flexibility, and reduced material consumption. Our products transform legacy materials, like plastics and composites, into advanced materials. We push the limits of performance to meet the needs of markets like automotive, transportation, and consumer goods manufacturing by making materials that can do more, with less. Our mission is to engineer polymer additives that respond to market needs with intentionality, versatility, and next-generation innovation to drive a material evolution focused on sustainability and design.

Haley Keith: haley@mitomaterials.com

Momentum Technologies | Houston & Dallas, TX

momentum.technology

Momentum Technologies provides safe, scalable, sustainable, and commercially attractive processing technology to energy storage industries, gigafactories, recyclers, waste handlers, and original equipment manufacturers. We aim to satisfy the mounting demand for critical minerals and metals around the globe.

Mahesh Konduru: mahesh@momentum.technology

Nditive3D | St. John's, Canada

nditive3d.com

Nditive3D is at the forefront of safety technology, specializing in AI-powered gas detection systems designed to revolutionize industrial environments. Our state-of-the-art sensors provide real-time monitoring of hazardous gases, significantly reducing the risk of accidents and ensuring workplace safety. By integrating advanced algorithms and IoT capabilities, we offer predictive insights that preemptively identify potential threats, allowing for immediate action. Serving industries like oil and gas, mining, and manufacturing, Nditive3D aims to set new standards in safety, efficiency, and reliability, while our commitment to innovation drives us to continuously improve and adapt to our clients' evolving needs.

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COMPANY DIRECTORY

New Sun Road | Richmond, CA

newsunroad.com

New Sun Road P.B.C. is a leading provider of sustainable energy solutions, specializing in the development and deployment of solar power infrastructure. Our innovative energy management technology optimizes the performance and reliability of distributed energy, delivering clean and cost-effective electricity to communities worldwide. By leveraging advanced analytics, AI and remote operating capabilities, New Sun Road is driving the global transition to clean, local energy. Formed in 2014, New Sun Road's cloud-based platform is now managing more than 1000 systems in over 22 countries as individual sites and fleets of systems.

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Novamera | Toronto, Canada

novamerainc.com

Novamera has developed Surgical Mining Technologies to quickly, sustainably, and economically extract critical minerals. The transformative small-footprint method can unlock over $6T in small deposits globally that have been uneconomic to mine using traditional underground or open-pit mining methods because of their size and geometry. Novamera's suite of data-driven hardware and software works with conventional drilling equipment to provide a low-capital, dynamic mining approach with 95% less waste, 44% less GHG emissions, and minimal water discharge.

Dustin Angelo: dangelo@novamerainc.com

Ozark Integrated Circuits | Fayetteville, AK

ozarkic.com

Ozark IC designs and manufactures solutions that bring visibility and control to places that IoT is not; anywhere very hot, cold or in extreme vibration. Utilizing unique semiconductors and packaging technologies, our XNode(r) single board computers are designed to work in extreme environments. Imagine taking data in a nuclear reactor, controlling a jet engine, or drilling a geothermal well, an eXtreme Node unlocks multi-billion dollar opportunities to expand any industry that extracts or transforms energy into useful work. We've put them to the test; XNodes have operated for a year in orbit, on engines and to the moon in 2024!

Matt Francis: francis@ozarkic.com

Pani Clean | Iowa City, IA

paniclean.com

Pani Clean. a women-owned enterprise is at the forefront of addressing climate change with cutting-edge clean technology. Pani Clean is the leading innovator developing a renewable-powered process that converts nitrate pollutants, a negative feedstock, into valuable green ammonia. By transforming these pollutants into resources, Pani Clean not only offers a sustainable solution to reducing environmental toxins but also produces green ammonia, which serves as a fertilizer and a potential energy source. This innovative approach supports local agriculture, promotes a green economy, and marks a significant stride towards environmental sustainability and economic growth as the demand for green ammonia escalates worldwide.

Joun Lee: jlee@paniclean.com

Pike Robotics | Austin, TX

pikerobotics.com

For owners of above-ground petrochemical storage tanks who experience difficulty maintaining their floating roof seals, Pike Robotics provides an in-service robotic inspection solution that guarantees safety of facility personnel, eliminates asset downtime, greatly simplifies the overall inspection process, reduces COGS for this inspection by 30%, and helps to remove around 480,000 metric tons of greenhouse gas emissions by improving the accuracy of the inspection results. This is a solution that is helping the industry solve a number of major pain points that exists today.

Connor Crawford: info@pikerobotics.com

Pix Force | Porto Alegre, Brazil

pixforce.ai

Pix Force has been ranked as the #1 AI startup in Brazil for the past five years, with operations in Brazil, Finland, and the US. Specializing in computer vision, the company develops AI products enabling computers to interpret and analyze digital images accurately. Major corporations harness Pix Force's innovations to maximize video analytics, ensuring faster, more precise inspections at reduced costs. Moreover, these products eliminate the need for human inspectors in hazardous environments, such as drone-led high-altitude inspections or mundane tasks like continuous monitoring in manufacturing processes.

Daniel Moura: daniel.moura@pixforce.ai

COMPANY DIRECTORY

poseidonminerals.com

Poseidon Minerals | Richmond, TX

The Permian Basin yields four times more water than oil and has the potential to power five million EV annually with its dissolved Lithium. Currently, Lithium is sourced from South America, Australia, and China, posing logistical and environmental challenges. Poseidon Minerals is pioneering sustainable and economical direct lithium extraction (DLE) technology from O&G wastewater. Leveraging our team's O&G expertise, we are also developing robust and efficient proprietary operational processes. Collaborating with the University of Tulsa we are advancing DLE research focusing on scaling and field pilot initiates to revolutionize lithium sourcing.

Mohammad Hamad: mohammad@poseidonminerals.com

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power-h2.com

Power to Hydrogen | Columbus, OH

Power to Hydrogen is simplifying hydrogen. Our technology solves the cost challenges around hydrogen production and transportation to enable a clean hydrogen future. Our hybrid liquid alkaline/AEM (anion exchange membrane) technology reduces the electrolysis stack cost by ~65%, eliminating the expensive and supply chain constrained metals like iridium, titanium, and platinum while integrating directly with variable, renewable energy. This technology can reduce the cost of hydrogen to enable clean transportation, store energy efficiently, and decarbonize industrial processes. In addition to low-cost materials, the technology can produce hydrogen at 250-bar which can solve the cost challenges created from compressing and transporting hydrogen.

Alex Zorniger: alexz@power-h2.com

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protiumdynamics.com

Protium Dynamics | Maringá, Brazil

Acting as a strategic partner in our customers' decarbonization journey, we develop safe and easy-to-apply hydrogen-based technologies to reduce fossil fuel consumption and pollutant emissions by up to 15% swiftly in existing assets and operations. Our mission is making the world sustainable through hydrogen based technologies.

Igor Zanella: igor.zanella@protiumdynamics.com

Quino Energy | San Leandro, CA

quinoenergy.com

Quino Energy is the leading developer of organic flow battery technology from Harvard University. Organic Flow batteries are an emerging alternative to Li-ion batteries for the grid including renewable, resiliency, commercial/industrial, and other utility storage applications. Quino Energy's organic flow batteries enjoy long lifetime, are non-flammable, and use no critical or fluorinated materials at a target cost <<$100/kWh. The company headquarters is in San Leandro, CA with manufacturing expansion planned in Houston later this year. Quino Energy is seeking commercial demonstration pilot partners and venture financing this year.

Eugene Beh: eugene@quinoenergy.com

Rhizome | Washington, DC

rhizomedata.com

Rhizome is a climate resilience software company helping electric utilities optimize grid resilience by embedding climate risk into asset investment and planning processes. The AI-powered platform allows distribution planners and engineers to identify grid vulnerabilities from extreme weather threats, build scenarios of resilience investments, and quantify the benefits of those investments to justify regulatory approval. Leveraging the latest machine learning technologies, causal inference techniques, and dynamically downscaled climate models, Rhizome's cloud-hosted platform autonomously assesses the fragility of distribution assets against extreme weather conditions and forecasts feeder-level risk profiles for multiple decades.

Mishal Thadani: mish@rhizomedata.com

Rocsole | Kuopio, Finland

rocsole.com

Breakthrough, non-evasive tomographic imaging technology that sees through industrial vessels and process equipments.

Pekka Kaunisto: pekka.kaunisto@rocsole.com

COMPANY DIRECTORY

solidec.com

Solidec (TEX-E) | Houston, TX

Solidec is a spinout from Rice University that was founded by engineers and physicists trained at Yale, Stanford, and Rice. We are developing a platform technology, which has been published in Nature and Science, that captures carbon and generates chemicals without fossil fuels, using only air, water, and electricity. It is our mission to reverse decades of emissions while producing net-zero chemicals and fuels for years to come.

Ryan Duchanois: ryan.duchanois@solidec.com

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sungreenh2.com

SunGreenH2 | Singapore

SunGreenH2 is at the forefront of the green hydrogen revolution, developing the world's highest-performance electrolysers. Our proprietary technology leverages advanced nanostructured materials to significantly boost hydrogen production efficiency and reduce costs, aiming for affordable green hydrogen on a global scale. Recognized for our groundbreaking approach, we focus on sustainability, offering core components for various electrolyser types and advancing renewable energy generation. With over a decade of innovation in electrochemistry and nanotechnology, we're committed to driving the transition towards zero-emission, low-cost green hydrogen, catering to industry, transport, energy storage, and power-to-X applications.

Tulika Raj: tulika@sungreenh2.com

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sustainableenergy.no/en

Sustainable Energy | Stavanger, Norway

Sustainable Energy offers world leading facilities for testing of green full-scale technologies. SE supports companies and startups to qualify solutions and get market access. SE has a strong partner network and stakeholders across Europe. SE focuses on Green Shipping, Energy Transition, Floating Offshore Wind and Small-Scale CCS with state-of-the-art testing and demonstration sites, technical/business support for accelerating innovation and commercialization. SE: Operates the world's first and largest test center for marine energy and propulsion systems for fuels, engines, batteries, and hybrid solutions. Runs the world's most advanced test facility and verification of smart energy systems and microgrids, simulation and optimization of energy production, consumption and storage. Manages the world's first grid-connected floating wind farm, for testing and demonstration of different designs, materials, and components for floating wind turbines. Develops the world's first small-scale CCS plant, for testing and validation of different technologies and methods for capturing, transporting, and storing CO2.

Willie Wagen: willie@sustainableenergy.no

Teknobuilt | Houston, TX

Teknobuilt is a digital technology firm transforming the trillion-dollar capital projects industry with PACE OS that provides unmatched digital assurance in meeting delivery timelines. Over 80% of capital projects get delayed and suffer costly overruns. Teknobuilt's unified AI/GIS platform brings a paradigm shift in bringing people, processes, and data with AI predictive mitigation for faster execution of energy and infrastructure projects. Already used in over $10Bn. projects with Fortune 50 companies, Teknobuilt's award-winning technology helps project owners, investors, and contractors with real-time visibility while optimizing timelines, costs and carbon from construction and to asset lifecycle.

TEKNOBUILT

teknobuilt.com

Abhishek Srivastava: abhishek@teknobuilt.com

Tellevare Reservoir Services | Austin, TX

Our technology allows operators to obtain increase production with less resources (or the same level with fewer resources) by utilizing acoustic sources at the surface to affect reservoir conditions at depth. The resulting effect lowers the amount of energy required during hydraulic stimulation to create optimal conditions for more effective completions and better wells.Robust IP position (broad patent issued), extensive modeling work has been performed to address the technical risk, team has been formed and initial positive reaction from industry and potential customers.

TELLEVARE
RESERVOIR SERVICES

tellevare.com

Royce Ferguson: royce@tellevare.com

Terradote | Houston, TX

Our patented, carbon negative manufacturing process will reduce carbon emissions by producing petroleum-free chemicals and replacing fossil derived chemicals. Our first product will be renewable acrylonitrile. It is a chemical intermediate to manufacture plastics, and fibers (our customers) which is used in every day objects such as toys, containers, and in vital components of automobiles, airplanes, computers, and medical devices. We use biomass, and captured greenhouse gases, and our waste is recycled back into to the system making us a zero waste manufacturing company. Our process also doesn't have any hazardous byproduct such as cyanide like our competitors. Not to mention, we conserve >3lb. of carbon emissions compared to the competitors who are emitting >4lb. of it per pound of acrylonitrile. We have an LOI, and received $3.25M in non-dilutive funding which helped us validate our technology, and product/market viability. Our next milestone is to scale to a pilot plant.

terradote.com

Mo Hossain: mo.hossain@terradote.com

COMPANY DIRECTORY

themesllc.com

THEMES | Houston, TX

THEMES repurposes idle oil & gas wells to provide grid-scale geological long duration energy storage. We enable increased intermittent solar & wind generation on the grid to provide carbon-free firm dispatchable power cheaper than existing fossil-fuel power generation. Our vision is to decarbonize electricity grids by making it economically feasible to retire all fossil-fuel generation, replacing it with cheaper firm dispatchable 100% renewable power by repurposing oil & gas infrastructure. We use commercially available adiabatic Compressed Air Energy (CAES) surface plant to store compressed air in saline aquifer porous rock using existing idle oil & gas wells. DOE's most recent benchmark assessment rates conventional CAES as the lowest cost mature technology ready to deploy over the next 10 years. Our solution is carbon-free, and has lower subsurface cost by repurposing existing oil & gas infrastructure.

Ram Shenoy: ram@themesllc.com

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thiozen.com

Thiozen | Pasadena, CA

Thiozen is an MIT spinout and the first-ever company to commercialize a process that can produce hydrogen from sour gas waste streams. By developing a low-cost, low-emission method of producing hydrogen, Thiozen helps meet the energy industry's growing demand for clean, affordable hydrogen. Thiozen recently validated its technology in an in-field pilot unit in the Permian Basin. The 3 year-old company has headquarters in Pasadena, CA. Learn more at www.thiozen.com.

Ryan Gillis: ryan@thiozen.com

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vareaenergy.com

Varea Energy | Houston, TX

Varea is developing a comprehensive geophysical approach for the identification and mapping of Geological Hydrogen Reservoirs (GHRs) by characterizing their seismic, gravity, and well-log signatures. This effort is aimed at leveraging existing exploratory seismic, density, and well data to explore the potential for GHRs of biogenic origin associated with hydrocarbon basins, contributing to the broader understanding of hydrogen resource exploration and utilization.

Anna Dai: anna@vareaenergy.com

Vaulted Deep | Houston, TX

vaulteddeep.com

Vaulted delivers at scale the lowest-cost, permanent, high quality carbon removal. We do this through geologic sequestration of carbon-filled organic wastes that today are sent to a landfill, dumped into an ocean/river, land applied, or otherwise left to decompose, releasing GHGs into the atmosphere. By leveraging a suite of patented, mature, geologic slurry injection technologies, Vaulted's approach is the lowest-cost, gigaton scale, permanent carbon removal. We inject deep under the earth's surface, where the carbon is permanently trapped under layers of impermeable rock - the same formations that have kept hydrocarbons underground for millions of years. We have two permitted, operational, facilities allowing us to reach near-term meaningful scale. Vaulted was spun out of Advantek Waste Management Services to utilize their oilfield technology for the purpose carbon removal. Vaulted Deep is backed by leading carbon removal and climate investors, including Lowercarbon Capital, Earthshot Ventures, WovenEarth Ventures, and Ecosphere VC.

Omar Abou-Sayed: omar@vaulteddeep.com

Vidya Technology | Curitiba, Brazil

vidyatec.com

Vidya is a deeptech company that offers solutions for the integrity and performance of industrial assets through Vidya Platform. Using AI, spatial computing, and software, applications of the Platform transform data, reality capture, images, and documents into real and scalable tools for monitoring, inspection, integrity, and maintenance of industrial plants.

Otávio Corrêa: otavio@vidyatec.com

Vroom Solar | Springfield, MO

vroomsolar.com

Vroom Solar is changing the way solar is perceived. Today when people think about solar, they think it has to be paired with batteries or the grid to operate. Vroom Solar is proving that is not true with a new Smart Solar Management system. Our patent-pending control center converts sunlight to usable power with the flip of a switch – no battery or grid needed to produce power instantly.

Luke Phelps: luke@vroomsolar.com

www.xplorobot.com

Xplorobot (FKA Exploration Robotics Technologies), Houston, TX

Xplorobot's Methane Emissions Management System, ranked as the most accurate among new technologies, enables operators to meet the new US and European regulatory requirements while minimizing cost and labor burden of compliance. Xplorobot Laser OGI technology allows operators to detect, repair and verify compliance in a single site visit. Xplorobot SaaS digitizes and streamlines the reporting process by seamlessly linking component-level inspection results to corporate reporting platforms. Xplorobot received the 2022 World Oil Technology award for its solutions and is now working with companies on four continents. We are also expanding the solution to detection of other gases and pollutants.

Oleg Mikhailov: oleg@xplorobot.com

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