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Inventions: At IEEE.org on 24-May-2022

By David Zornes

Founder & CEO, Tip Path, USA

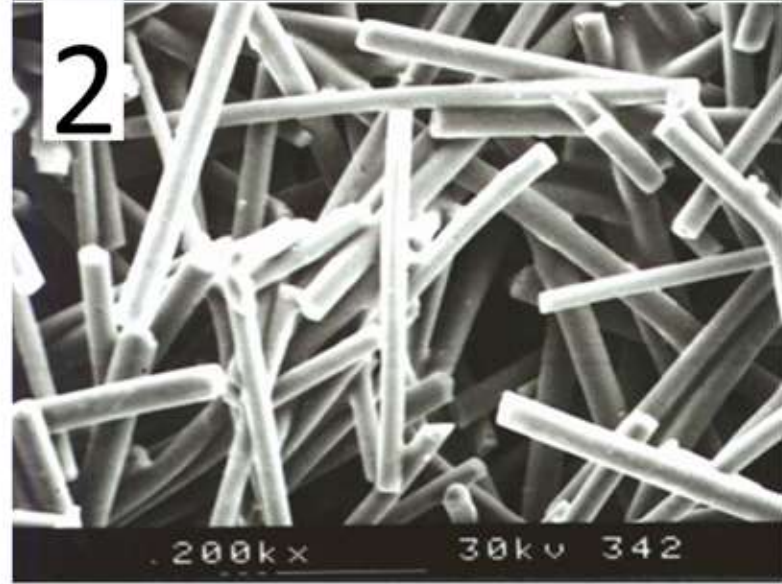
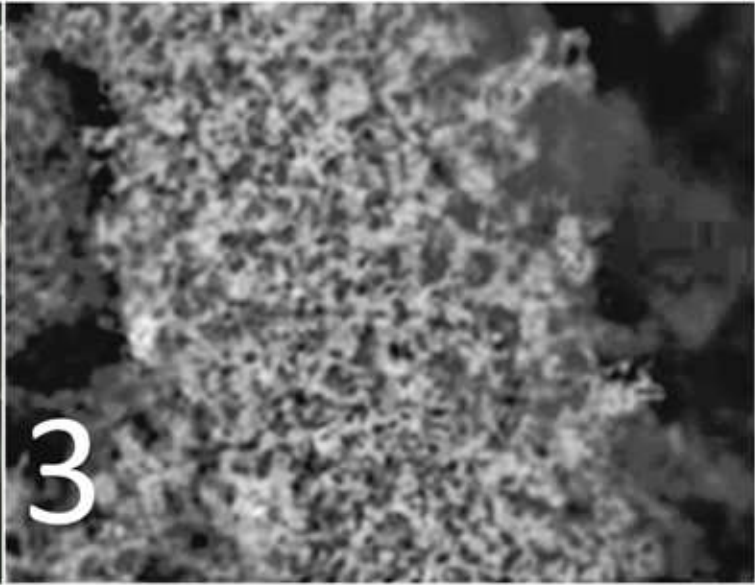
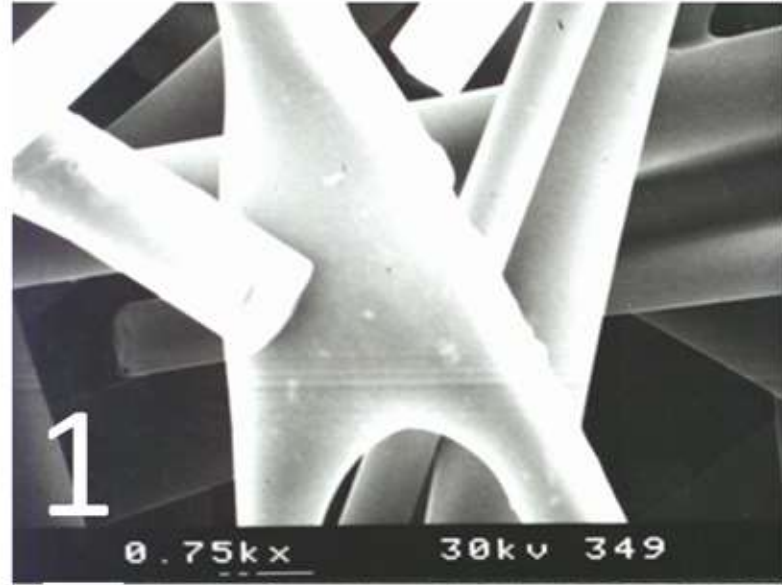
www.linkedin.com/in/davidzornes/

david@zornes.tech or david.zornes@gmail.com (Preferred)

All Patents are Pending in this PowerPoint of David Zornes (President & CEO) Founded Tip Path Inc. on Earth Day 22-April-2018 to commercialize all energy systems based on optimization of [Nanotechnology-Patent](#). Zornes has an Universal Patent Scope: Chemistry, Physics, Software, Biology, Quantum Computers. etc. No Limit.

Carbon Fiber Composite Molecular Sieve (CFCMS) is a connected network of micropores within a monolith of carbon fiber that teaches carbon monolithic electric swing adsorption/desorption. CFCMS open structure allows the free flow of fluids through the monoliths Mechanisms of adsorption and desorption associated with monoliths are, by virtue of their continuous carbon skeleton, electrically conductive, so attractive forces, static electrical forces, or perhaps van der Waals forces between the carbon and the gas (adsorbate) are disrupted or perhaps reversed in polarity by the electric current.

**Inventions Patents Pending
Nanotubes Grown On Carbon Fiber Monolith**



View 1 Is A Closeup Of View 2's Carbon Fiber BOND. Carbon Nanotubes In View 3 Are Grown On Fibers In 1. Nanotube Open Ends Are Hydrophilic For Electrolysis Of Water.

Vertically aligned carbon nanotube arrays are grown by thermal chemical vapor deposition.

- A substrate (quartz, silicon, stainless steel, etc.) is coated with a catalytic metal Iron (**Fe**), Cobalt (**Co**), and Nickel (**Ni**) layer.
- Iron is deposited via sputtering to a thickness of 1–5 nm.

Substrate is heated to the growth temperature ($\sim 700\text{ }^{\circ}\text{C}$), the continuous iron film breaks up into small islands that nucleates a carbon nanotube.

- Sputtered thickness controls island size nanotube diameter.
- Thinner iron layers drive down the diameter of the islands and drive down the diameter of the nanotubes grown.
- Annealing at the growth temperature reduces the site density (number of CNT/mm²) while increasing the catalyst diameter.

Carbon nanotubes, as-prepared, always have impurities such as other forms of carbon (amorphous carbon, fullerene, etc.) and non-carbonaceous impurities (metal used for catalyst).

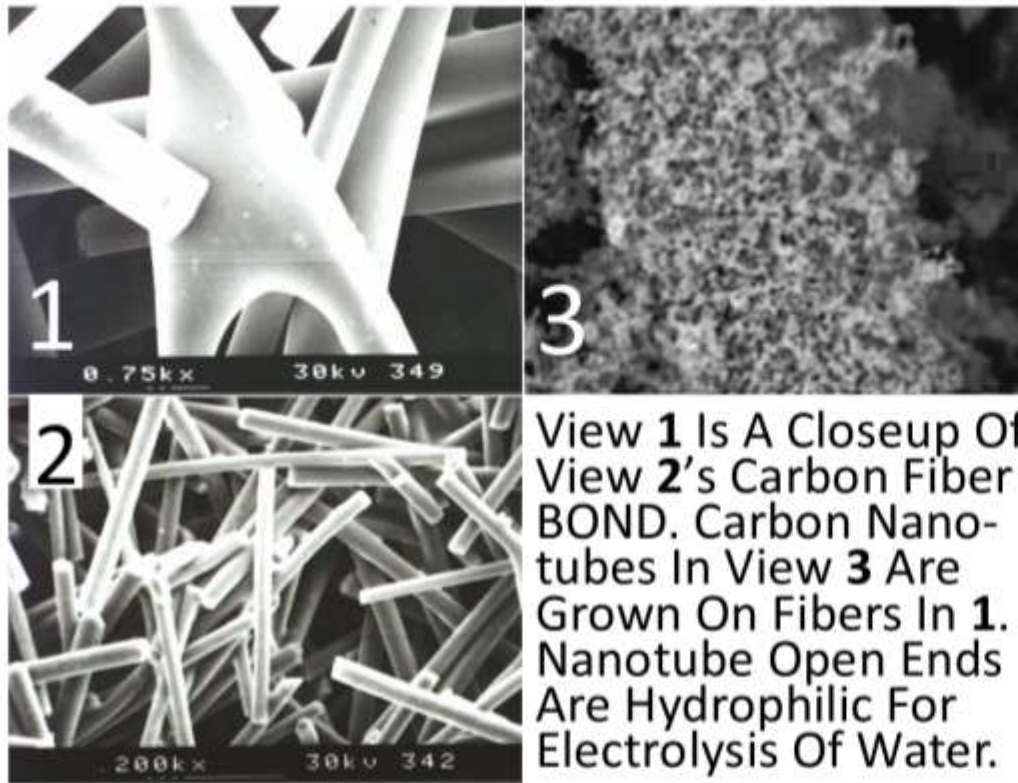
- These impurities need to be removed to make use of carbon nanotubes in applications. Iron-nickel oxy/hydroxide (FeNiO_x) is ACTIVE oxygen evolution reaction (OER) catalysts & degradation occurs during electrolysis relevant to HIGH Voltage commercial electrolysis. Iron from anode deposits on the cathode during electrolysis 200 mA/cm² in 5.4 M KOH (or 22% KOH). FeNiO_x & NiO_x films (NiO_x has a higher overpotential).

**Fe, Co, Ni
Are On END of
Nanotube
45-Degree\
View**



Axial View

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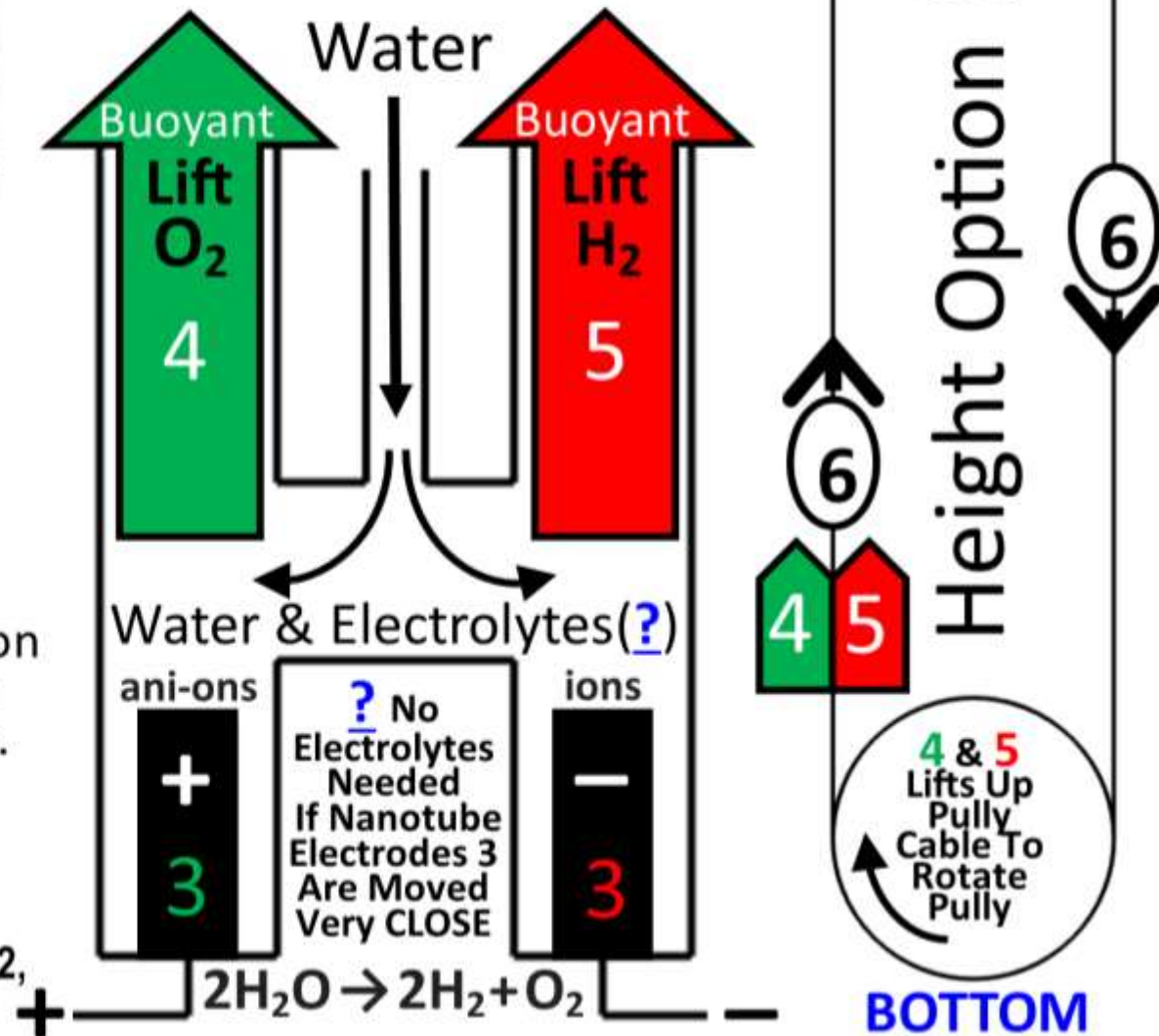


BlueOceanIoT.blue®'s Patent Pending is a bidirectional Sensors-To-Circuit grid data-connection we use, so Artificial Intelligence provides a data-concentrator to the CLOUD to CONTROL Systems.

No need for: Wind, Solar, Waterfalls, or Petroleum

US Patents Pending 2020-DEC 63125969, 63134181, 63146572, 63222942 2021-JUL ALL Rights Reserved

Electrolysis Of Water From Electrodes 3 Provides Buoyant GASES: Oxygen 4 & Hydrogen 5 In Containers to LIFT Pully Cable 6 Rotating Electric Generator 7 To FILL Next Gas Container At Bottom For Constant-ENERGY.



Tower's TOP

**Guanidine POWDER CH_5N_3 Synthesis is Provided by
Electrolysis of **WATER exposed to AIR****

**CH_5N_3 SOLID is Storable, Non-explosive, & SAFE to
Distribute but **NOT** H_2**

CO_2 Neutral by Removing CO_2 from AIR

**Guanidine is a Hydrogen Source that is SAFELY
Stored (on/off vehicle)**

**Exhaust Emission: N_2 (Fertilizer), H_2O and
 $2/3^{\text{rds}}$ less CO_2 than fossil fuels, life-cycle neutral O_x**

3rd Party Test For Validation Primex Lab Redmond WA

Left: Oak Ridge Nat. LAB Staff (17-May 2000 License)
Right: NASA Lab Space Shuttle TEST Assembly



SILENT Climate Control Device Zornes' co-Inventor [US5813248](#) had Space Shuttle Test

**ALL 27-Claims were Novel, Inventive Steps
International Search Report 09-Dec-2021**

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US2021/036273

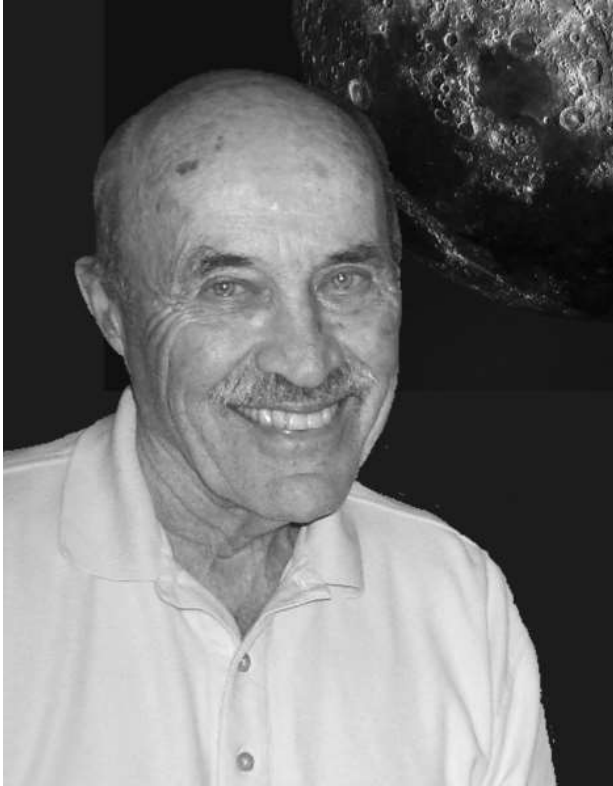
Box No. V		Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement	
1. Statement			
Novelty (N)	Claims	1-27	YES
	Claims	None	NO
Inventive step (IS)	Claims	1-27	YES
	Claims	None	NO
Industrial applicability (IA)	Claims	1-27	YES
	Claims	None	NO

David Zornes wrote & filed [Kevin Supinger's Sensor System patent](#) because ALL of Zornes' ENERGY Inventions require minimum bandwidth bidirectionally over the Internet CLOUD. Semiconductor shortages for Gateway-Circuits had to be replaced too. Control of IoTs done



PROOF I visit MANY U.S. Govt Labs





Jan Van Wyk, RIP-27-FEB-2021 I remember Jan for his kind loving spirit and his talented work as my co-Inventor & Lunar Rover engineer at Boeing. Patent LINK [Solid-lubricant bearing US Pat. 4906110](#)

Boeing's Kent WA-State is where Jan Van Wyk engineered/invented Lunar Rover mechanical parts because of ZERO maintenance required in Buggies that are still on the Moon from Apollo trips in early 1970s. Replaced liquid lubricant.



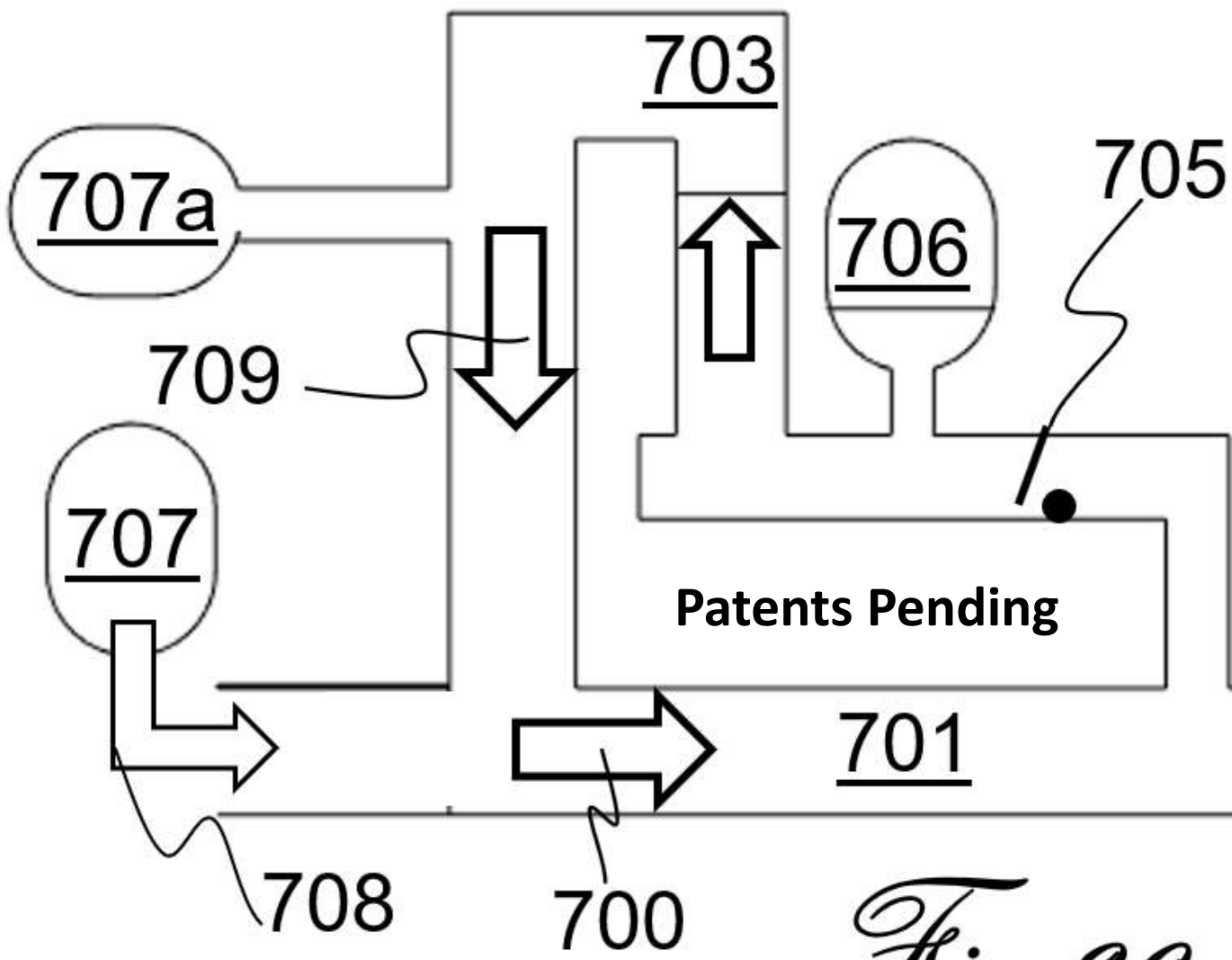
A Lunar Rover on the Moon surface.

Lloyd Grant managed ALL nuclear shipments for USA from East Coast to West Coast, so my 1st business partner working in Hanford PRIVATELY. I wrote one of his Scotch Yoke engine Patents in 1970s. His wife managed WW2 nuclear bomb assembly. Picture of me in [Hanford Nuclear Soviet Weapons disarmament program](#).

Middle: My two 33-year partners **David E. Anderson** ran 80,000-acre of Hanford standing on cooling tower. Left: Texas 1st Governor, **Sam Huston's** Grandson.



FIG 29: Hydraulic ram (hydram) is a cyclic water pump powered by hydropower that requires no outside source of power other than the kinetic energy of flowing water 701.



Inlet drive pipe 701, Free flow at waste valve 702, Outlet delivery pipe 703, Waste valve 704, Delivery check valve 705, and Pressure vessel 706.

Filled container 707a pulls an electric generator around then empties into 701. 707 lands on 704 adding energy.

Fig. 29

End Of Hydrogen Presentations

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www.linkedin.com/in/davidzornes/

david@zornes.tech or david.zornes@gmail.com **(Preferred)**

“Future” WEBSITE www.TipPathInc.com

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