



**newtech**

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608-238-6001 [ TEL ]

greg@infinitysupercritical.com [ Email ]

**Infinity  
Supercritical LLC**

## **New technology and licensing from Infinity Supercritical**

### **Structured Data**

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    "description": "New technology and licensing from Infinity Supercritical including LED and laser vertical grow towers, liquid CO2
cavitation pump, solid state chiller, and flowbar for distributing CO2 through botanical extraction vessel."
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New technology and licensing from Infinity Supercritical including LED and laser vertical grow towers, liquid CO2 cavitation pump, solid state chiller, and flowbar for distributing CO2 through botanical extraction vessel.

**PDF Version of the webpage (first 10 pages)**

This webpage QR code

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<https://infinitysupercritical.com/newtech.html>

## Producing Alcohol from Liquid CO2

Infinity has already built lots of closed-loop supercritical CO2 systems, and experimented with CO2 cavitation to make a one-moving-part liquid CO2 pump.

Infinity currently sells a cart-mounted portable on-demand supercritical CO2 phase change system for \$150,000 which can be used for the experiments listed below, along with many others. It is a cart which was designed to fit through any standard door, hallway, or elevator and has heavy duty casters for mobility.

We are currently looking for funding to develop the following:

1. On-Demand CO2 to Alcohol: Using our closed-loop liquid CO2 phase change system, adding Nafion in the process to make alcohol. Inputs: Liquid CO2, water, and electricity. About 3-4 kW to make a liter of alcohol (from lab experiments).
2. CO2 to Alcohol with In-Situ Power Generation: Using our closed-loop supercritical CO2 phase change system, produce the power via miniature CO2 turbine generator or static electricity generator (SEG) to power the conversion via Nafion.
3. Spin-To-Liquid (STL): A novel one-step approach to producing alcohol from liquid CO2 using a cavitation device with Nafion. This is a one-moving-part device employing sonochemistry with inputs of water and liquid CO2. Electricity is produced in-situ. Shaft rotation is required to spin the device (this can be done via a electric motor, pressure expanding turbine, or other shaft rotation such as a wind turbine).

You can further our efforts by buying our \$150,000 systems (which we build - and have four in stock) or by considering an investment to fund our development.

Teaser: Why was Nikola Tesla so fascinated with static electricity and spinning discs ? Our guess is that he had already found the worlds best battery - water. The Tesla turbine (while a fascinating pump) was actually a static electricity generator originally designed to charge water. All of his Colorado Springs experiments revolved around static electricity. Power generation and (wireless) transportation was via static electricity.



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## Vortex Extraction of Oil from Botanicals

Infinity has experimented with many technologies which perform cell lysis. One of those is the fascinating vortex tube. It has traditionally used for pressurized air to produce spot cooling and heat, along with separation functions in the oil and gas industry. The vortex converts pressure into rotational energy (over 1,000 g force) which effectively becomes a centrifuge liquids (air, water, oil, etc.). The high g forces can result in cell lysis, and the rotational element can separate resulting extract.

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## Solid State Chiller System

Since 2015 Infinity Supercritical has been looking for ways to provide chilled water for its phase-change systems. With their liquid supercritical systems, the vapor CO<sub>2</sub> needs to be phase changed back to liquid so that it can be stored and then pumped (via electric silent liquid pump) into the extraction vessel.

The closed loop system requires a chiller to accomplish this phase change process. A standard mechanical chiller deploys legacy moving parts compression and expansion technology with a refrigerant, to make a cooled liquid.

Traditional extraction systems require a pump to either pressurize liquid CO<sub>2</sub> (typically with a piston pump or other hydraulic pump), or pump the gas CO<sub>2</sub> (vapor) using a loud air compressor and diaphragm pump.

Either system requires a chiller.

Liquid Phase Change Pump System: the phase change requires a chiller to go from vapor to liquid.

Gas Vapor CO<sub>2</sub> Diaphragm Pump System: requires a chiller to cool the air compressor, which drives the vapor pump, and other parts of the extraction process.



## **Solid State Chiller System Prototype**

Our concept is to chill the vapor CO<sub>2</sub> into a liquid by using a back-to-back counterflow chiller system based on Peltier cell technology.

This technology deploys solid state cells that cool on one side, and heat on the other.

This unique technology allows you to heat and cool simultaneously. Since the liquid CO<sub>2</sub> needs to be compressed and expanded into a vapor, this provides the perfect opportunity to take advantage of both heating and cooling (chiller) cycles.

With funding, we believe we can make a solid state extraction system with no moving parts.

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## **FlowBar for Distributing CO2 throuout Botanicals in Supercritical Extraction**

Licensing Starting At: \$9,999 for unlimited production for original purchaser only. May not be transferred or sold to another party. Size of company will determine license fee.

Using existing patent.

Please email for more information.

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## Liquid CO2 Cavitation Pump

One moving part liquid CO2 cavitation pump. Virtually maintenance free. Pressures up to 2,000 psi depending on various factors.

Licensing Starting At: \$99,999 for unlimited production for original purchaser only. May not be transferred or sold to another party. Size of company will determine license fee.

Using existing patent.

Please email for more information.

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## Rotary Evaporator

There are countless ways to evaporate a liquid. One interesting concept is a spinning ball, which has lots of surface area. Using magnetics, you can not only heat up the ball from Eddy Current, but also spin it without any mechanical connection drive. The spinning magnetic field can even be done with coils, instead of the traditional magnetic mixer technology. This technology can also be used for seawater desalination, oil and water separation, and other processes.

Licensing Starting At: \$9,999 for unlimited production for original purchaser only. May not be transferred or sold to another party. Size of company will determine license fee.

Using existing patent.

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