

NANOPLEX
FILMS



CAPABILITIES BRIEF



PEAK NANOPLEX™
FILMS



2-4x POWER STORAGE SOLUTIONS

Peak Vital Stats

Company Data

- Founded: 2015
- Headquarters:
224 W. Campbell Road, Suite 45
Richardson, TX 75080
- Federal Tax ID: 85-0700734
- DUNS: 117678034
- Unique Entity ID:
QXJ3DJSU2RL1
- CAGE/NCAGE: 8RW08
- NAICS Codes: 541713

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Contract Vehicles

- ONR SBIR Phase 2 Option
- (N68335-18-C-0101)CWRU
Sub-Contract
- ARL Congressional Plus-Up
(W911NF-17-2-0080)

PNO contracts

- FY 2022 Congressional Plus-Up
(DOTC-19-01-INIT-1068)
- FY 2023 Congressional Plus-Up
(W15QKN-24-C-0005)
- ManTech Contract Extension
(W15QKN-18-9-1008)



NANOPLEX™

PEAK NANOPLEX™ FILMS CAPABILITIES

Peak Mission

Our mission is "To develop nanoscale technologies that deliver macro-scale benefits." Peak NanoPlex is 100% US-engineered and manufactured - with no reliance on China. Developing technology is critical for our nation's innovation, but a safe and secure supply chain is required to ensure our national security.

Peak Overview

Peak Nano was founded in 2016 to leverage revolutionary advances in nanotechnology for defense, energy, and communications. The foundational research for NanoPlex was a collaboration of the Case Western Reserve University, DARPA, the Naval Research Laboratory (NRL), and grants from the National Science Foundation. In 2002, NRL conceived the idea of using nanolayer materials to improve energy storage and increase the operational lifetime of capacitors for pulsed power applications, which drove the initial research into the metamaterial we brand as NanoPlex.

NanoPlex-based capacitors can create energy storage solutions with 2-4x higher energy density than current technology, package it in half the footprint, extend the lifetime by 3-5x, and significantly improve thermal limits compared to Biaxially Oriented Polypropylene (BOPP). Peak energy solutions can enhance our power grid, enable fusion energy, accelerate and charge EVs, launch fighters with EMALS, and support many other pulsed power applications including electromagnetic and directed energy platforms. Peak NanoPlex films and our HawkAI optics are the leading nanotechnology metamaterials in the market.

Peak technology
is protected by
over 20 patents

100% US-based
engineering and
manufacturing
facilities

Over 100K
SQFT of
manufacturing
space in Ohio.

2023 Edison
Award Gold
Medal in
Material Science

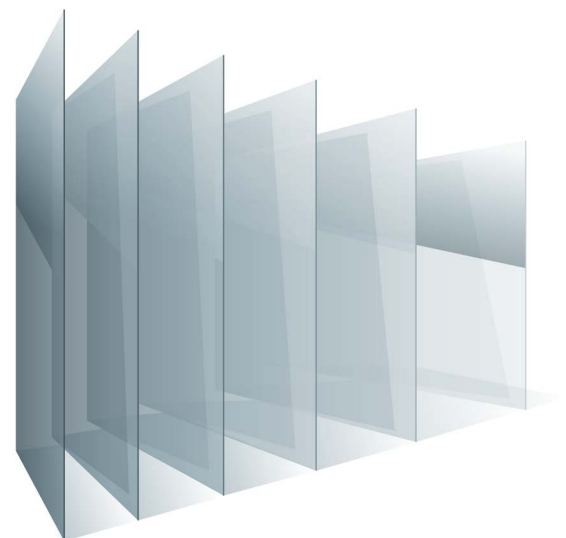
Peak Markets and Customers

Markets

Defense
Power Systems
Fusion Energy
Aerospace
Life Sciences
Packaging

Customers

US Army
Canadian Army
Millbrook Tactical
Wilcox Industries
SRI
Rampart
General Atomics
Panasonic
SARA
EATON
TDK





NanoPlex Leadership

- NanoPlex and HawkAI lenses are 100% US engineered and manufactured - with no reliance on China.
- NanoPlex based capacitors can store 2-4x more energy than industry standard BOPP-based capacitors.
- NanoPlex based capacitors can be up to 50% smaller and lighter than industry-standard BOPP-based capacitors.
- NanoPlex based capacitors enable faster discharge with lower impedance, making fusion reactions more efficient.
- NanoPlex based capacitors last up to 3-5x longer than industry standard BOPP, reducing the TCO of fusion energy generation systems.
- NanoPlex based capacitors enhance the scale and stability of the US power grid by delivering burst power and improving step-up and step-down power transmission.
- NanoPlex capacitor films can be rated up to 135 degrees C, which is over 35 degrees C better than conventional BOPP capacitors.
- HawkAI LGRIN Lenses, based on NanoPlex, improve the FOV, clarity, and distance of optics night vision goggles, fire control systems, and UAS reconnaissance.

NanoPlex Pulsed Power Use Cases

Provide extra power conditioning and distribution to support critical applications, including national power grids, EVs, medical devices and military uses.

Peak is The Leader in Nanotechnology Metamaterials

Peak's researchers, scientists, and engineers develop solutions based on our NanoPlex metamaterial. We are the leader of the world in nanotechnology for material science. Our core competencies include:

- 1 | **Optimized Power Storage** - Capacitors based on NanoPlex can be used for electric vehicles, Electromagnetic Aircraft Launch Systems (EMALS), fusion energy, and scaling and stabilizing power grids.
- 2 | **HawkAI Optics** - Our Layered Gradient Refractive Index (LGRIN) lenses, made from NanoPlex, improve the field of vision (FOV), color clarity and distance of optics, for night vision goggles, fire control systems, and UAS reconnaissance.
- 3 | **Solar Reflection Management** - NanoPlex films can manage and reduce solar reflections and radiation to protect equipment and stabilize operating temperatures for satellites and other aerospace applications.

NANOPLEX
MANAGES LIGHT
AT THE
**WAVE
LENGTH
LEVEL**

NANOPLEX
INCREASES POWER
STORAGE
AT THE
**MOLECULAR
LEVEL**

NANOPLEX
CREATES STRENGTH
AT THE
**META-
STRUCTURE
LEVEL**

NanoPlex Drives Next-Gen Pulsed Power Applications

Many next-generation pulsed power applications such as fusion energy, Electromagnetic Aircraft Launch Systems (EMALS), utility grid power factor correction, EV acceleration and charging stations, and dozens of other infrastructure and national security applications require advanced pulsed power solutions, and Peak has the technology necessary today.

