




GALVORN

THE LIGHTEST, STRONGEST, AND MOST FLEXIBLE
CONDUCTIVE MATERIAL ON THE PLANET

Rethinking Data Center Materials in Cable Design and Beyond

DEXMAT

A wide-angle photograph of a massive open-pit mine. The mine's interior is characterized by numerous horizontal terraced levels, creating a stepped appearance. The rock faces are a mix of dark and light brown hues. In the foreground, a dirt road or path runs along the edge of the mine, with a yellow metal railing visible on the right side. The sky above is a deep blue with scattered white clouds. The overall scene conveys the scale and industrial nature of the mining operation.

**Existing mines and projects under construction will meet
only 80% of copper needs by 2030.**

International Energy Agency



GALVORN IS ADVANCED SOLID CARBON. IT WAS ORIGINALLY INVENTED BY NOBEL LAUREATES FOR HIGH-PERFORMANCE SPACE APPLICATIONS. DEXMAT HAS BEEN EXPONENTIALLY INCREASING PRODUCTION CAPACITY TO MAKE IT ACCESSIBLE TO CRITICAL APPLICATIONS ON EARTH.

97%

as conductive
as copper
weight for weight

80%

less weight
than copper

50X

stronger
than copper
weight for weight

1000X

more flexible
than copper

17%

more thermally conductive
than copper

CORROSION RESISTANT

No rusting, no pitting even over years.

FLAME-RESISTANT

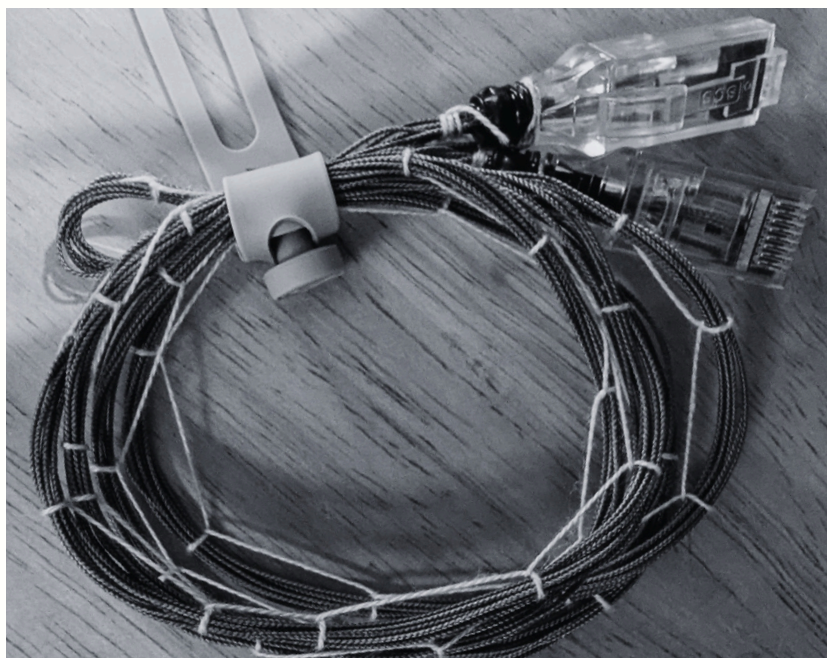
It does not melt, it's VERY hard to burn.

SUSTAINABLE & RECYLABLE

Sustainable to produce and can be recycled without losing properties.

[DOWNLOAD DATA SHEET](#) ↓

[WATCH DEMO VIDEO](#) ▶



PERFORMANCE ADVANTAGES

**GALVORN SIGNAL WIRE AND EMI SHIELDING OFFER
A DROP-IN SOLUTION WITH STRATEGIC IMPACT**

01 Unmatched Lightweighting

Galvorn's low density in signal wiring and cable, as well as EMI shielding can mean easier installation and maintenance for data center operators, as well as reduced structural load on server racks. In data centers housing thousands of cables, this cumulative weight savings is significant.

02 More Space- Saving Possibilities

More flexible Galvorn cables can allow for denser cabling configurations, optimizing precious real estate within crowded data centers. This translates to more compute power per square foot and lower operating costs, a critical advantage in hyperscale facilities where space is at a premium.

03 Superior Strength, Durability

Modular or high-density data centers require frequent reconfiguration. Copper cables can be rigid and prone to fatigue. Galvorn's strength and flexibility ensures durability under mechanical stress. Significantly reducing cable wear and failure during reconfigurations can reduce maintenance downtime.

04 Better Thermal Management

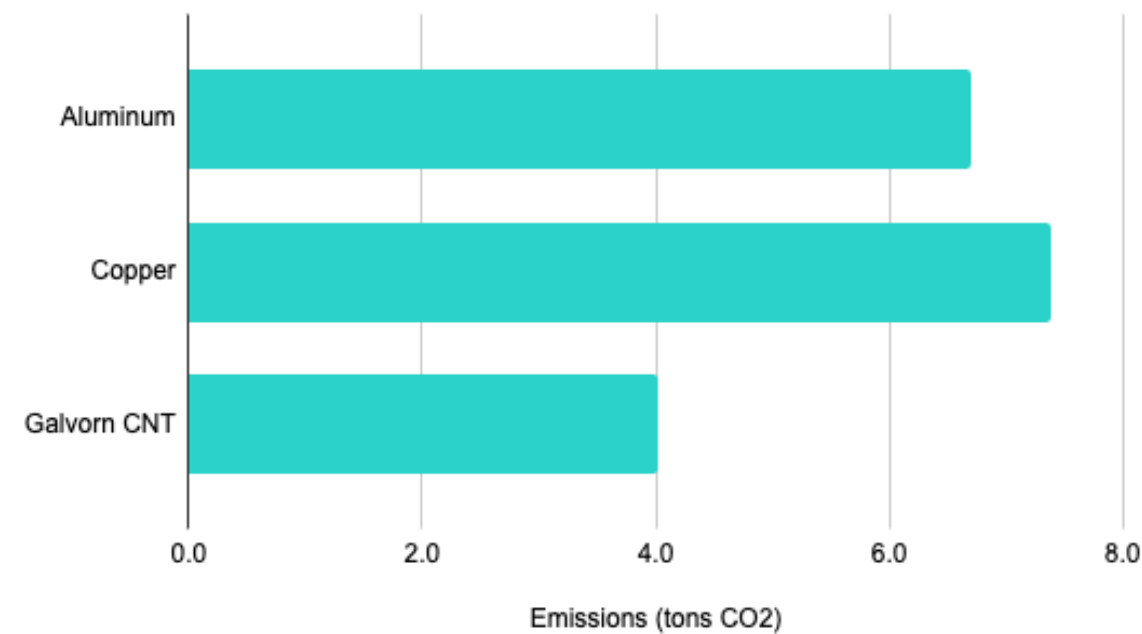
Thermal management isn't just about heat sinks. Galvorn's high thermal conductivity allows for more efficient heat dissipation within the cable itself, potentially contributing to cooler operating environments for sensitive components and prolonging equipment lifespan.

05 Superior Performance at High-Frequencies

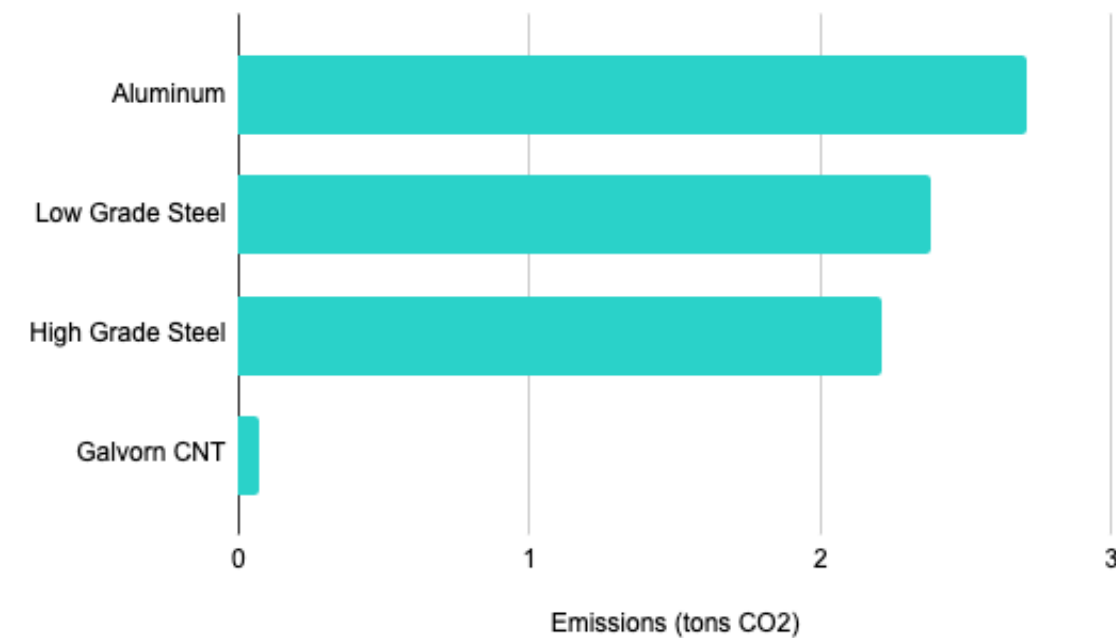
As data center cable systems evolve to support 5G/6G networks and other high-frequency applications, signal integrity and weight become paramount. Galvorn outperforms copper at higher frequencies. For intra-data center networks, this can mean reduced latency and weight compared to traditional copper-based systems.

Read: [Rethinking Materials in Cable Design for Data Centers](#)

Emissions to Conduct Same Amount of Electricity
As 1 ton of aluminum



Emissions to Support Same Weight
As 1 ton of low-grade steel



SUSTAINABLE PRODUCTION

**GALVORN PRODUCTION AT SCALE IS
HIGHER-PERFORMING, LESS ENERGY-
INTENSIVE, LESS EXPENSIVE, AND MORE
GEOPOLITICALLY RESILIENT THAN
TODAY'S MOST PERVASIVE METALS**

Additionally, unlike metals, its feedstocks do not require the broad destruction of land and ecosystems, which result from mining ore. By contrast, Galvorn feedstock can be produced from natural gas, landfill gas, and biogas, abating greenhouse gases like methane and carbon dioxide from entering our atmosphere.

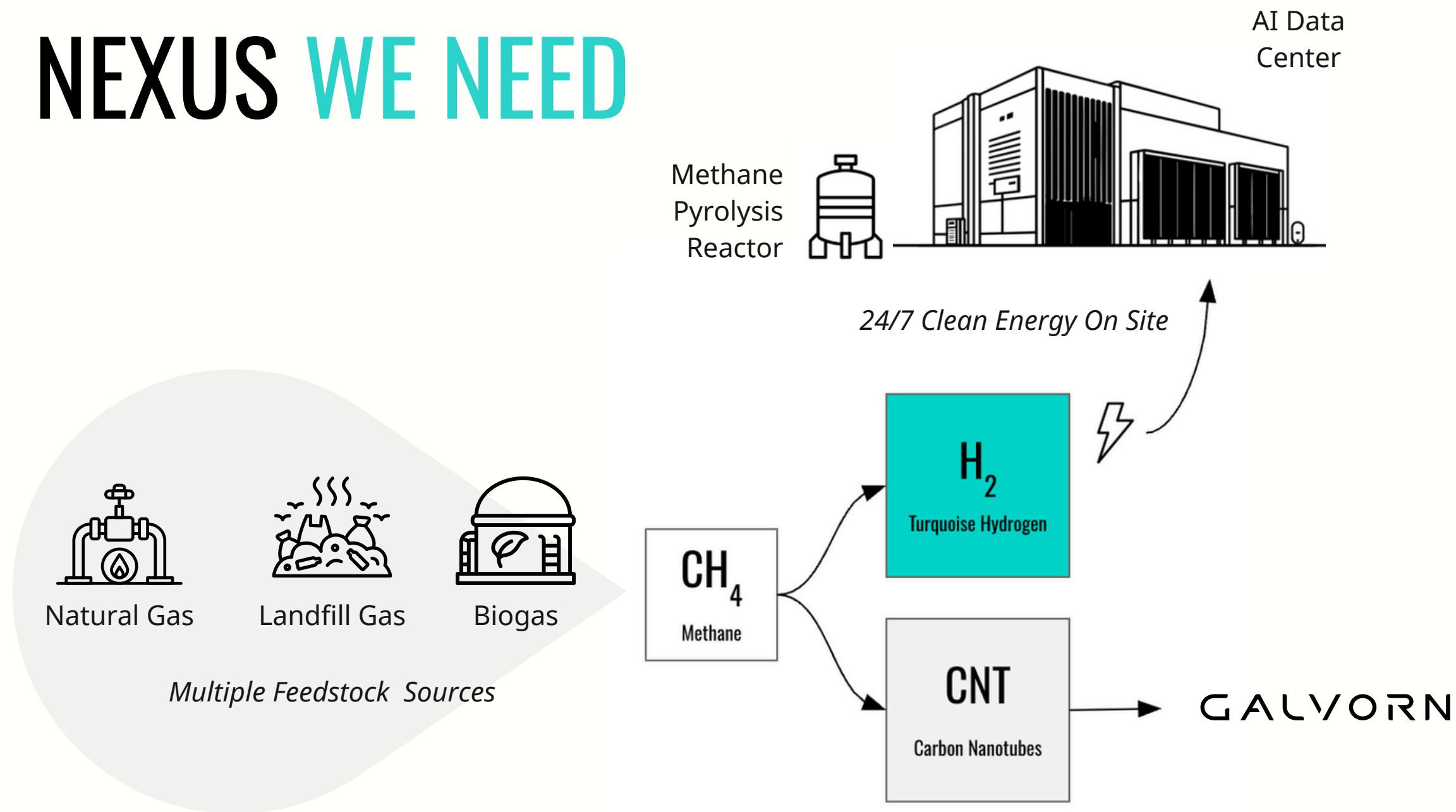


RECYCLABLE—AND NO LOSS OF PROPERTIES

We recycle Galvorn on a regular basis, but Rice University researchers demonstrated that carbon fibers made out of carbon nanotubes (aka Galvorn) can be fully recycled from mixed streams (i.e., in realistic conditions for end-of-life recycling). Their work was recently published in the journal Carbon (Elsevier).

[WATCH VIDEO](#) 

THE MATERIALS-ENERGY NEXUS WE NEED



01 Emissions Abatement

Galvorn feedstock can be produced from natural gas, landfill gas, and biogas, abating greenhouse gases like methane and carbon dioxide from entering our atmosphere.

02 Clean Energy 24/7

Turquoise hydrogen is 4x more efficient than green hydrogen production, offering a clean energy source to meet the vast energy demands of AI data centers.

03 Valuable Solid Carbon

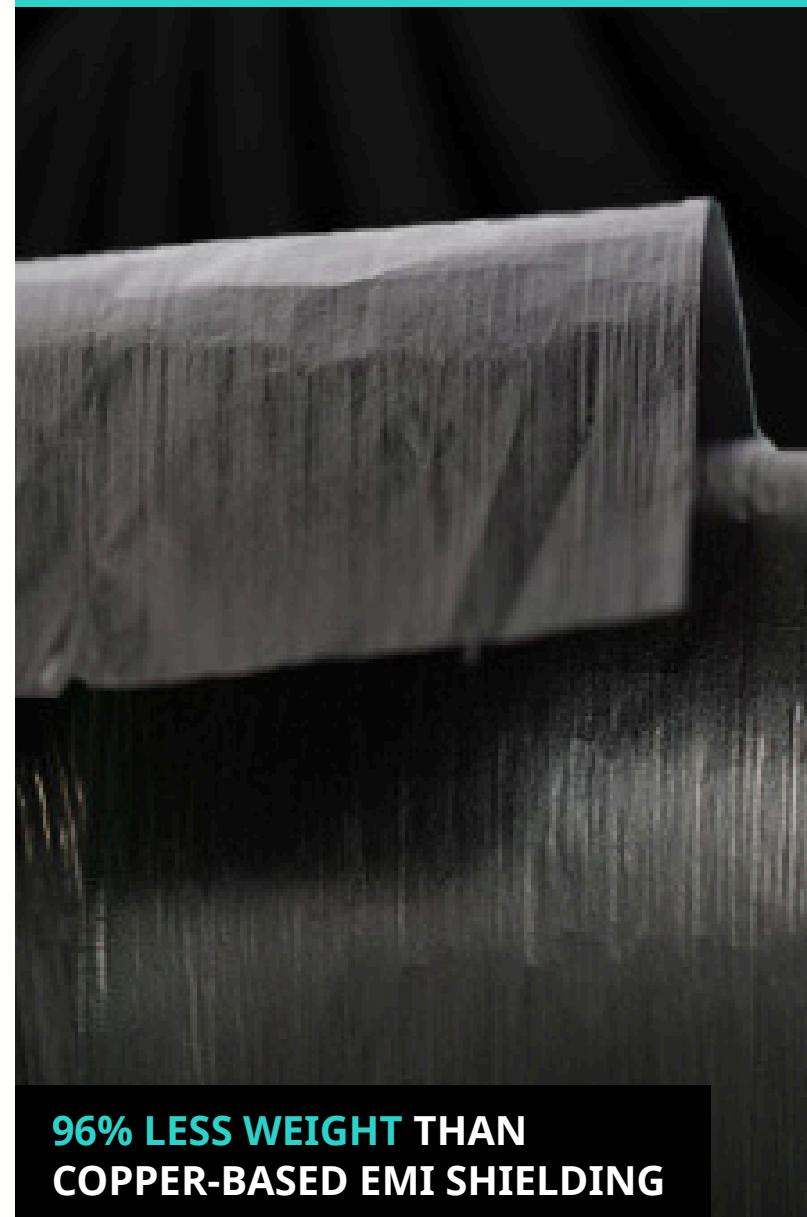
Methane pyrolysis can permanently embody carbon into Galvorn's feedstock (carbon nanotubes), while efficiently producing clean "turquoise" hydrogen.



**80% LESS WEIGHT
THAN COPPER**

↓ **35-60%**

Galvorn film reduces overall cable weight by 35-60% while also providing superior flex endurance.



**96% LESS WEIGHT THAN
COPPER-BASED EMI SHIELDING**

OUR PRODUCTS

Wire / Yarn

Superior alternative to copper-based signal wire.

Read: [Lightweight signal wire and cable with Galvorn](#)

Film

Superior alternative to copper-based EMI shielding.

Read: [Lightweight EMI Shielding with Galvorn](#)

TODAY

GALVORN'S VERSATILITY SUPPORTS APPLICATIONS BEYOND WIRE AND CABLE



Wire and Cable

Signal Wire, EMI Shielding



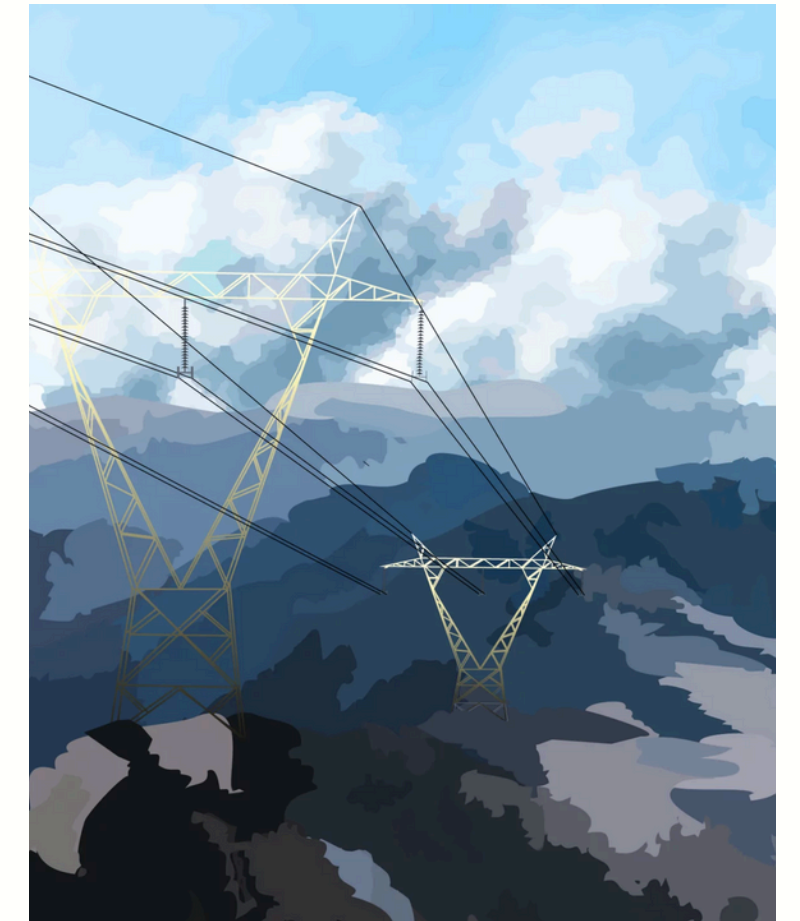
Composites

Structural Health Monitoring ("The Object is the Sensor"), Reinforced Carbon Fiber Composites, De-Icing



Advanced Textiles

EMI Shielding, Cut Resistance



Power Transmission Lines

Aluminum Carbon Nanotube (ACNT) Conductors

Normandy Bridge
856 meters between pylons

Imagine if that were 22km....



Bridges

Longer tension bridges



Buildings

Lighter, stronger tensile architectures



Construction

3D printed, stronger, lighter, recyclable

FUTURE

**AT MASSIVE SCALE,
GALVORN CAN
TRANSFORM OUR
BUILT WORLD**

GALVORN CASE STUDIES



Tokai Rika, a leading tier 1 automotive supplier, is using Galvorn for its ability to turn waste heat into electricity, feasible for a broad set of applications.



Air Force Research Laboratory (AFRL) has long been advancing field emission technology. It is using Galvorn in its field emission cathodes with great results.



Prysmian is developing Galvorn advanced conductors: stronger, lighter, and more resilient to extreme weather, improving grid reliability for Americans.

OUR FOUNDERS

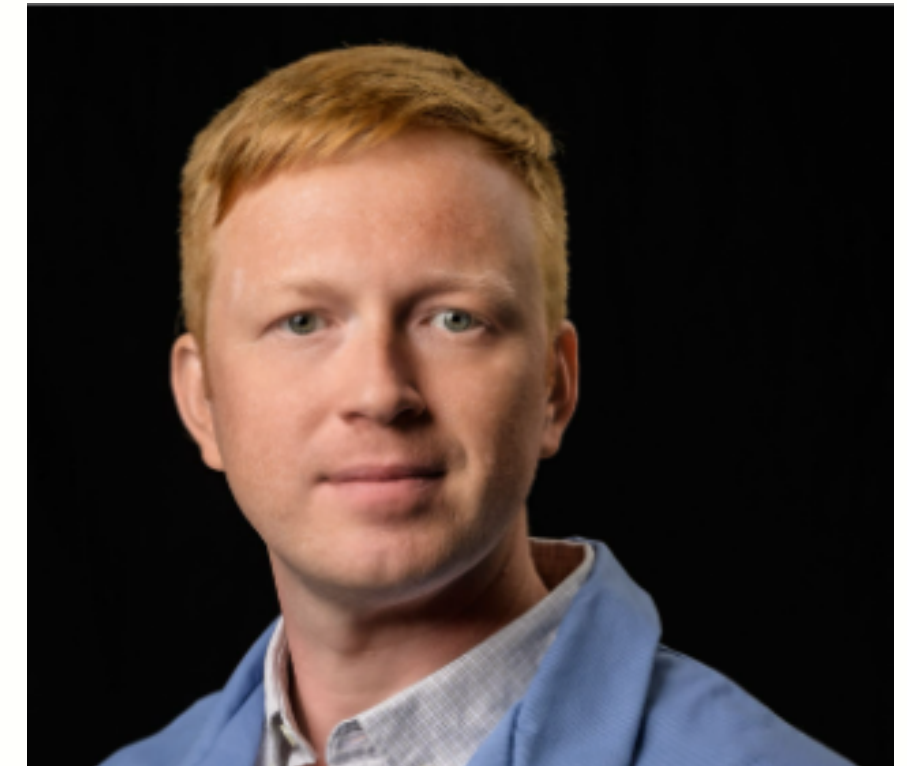
ARE AMONG THE LEADING MINDS OF THE CARBON NANOMATERIALS INDUSTRY

Our technical team also includes three additional Rice Pasquali Lab PhDs. Together DexMat has unmatched expertise in the production of high-performance and highly scalable carbon nanomaterials.



MATTEO PASQUALI, PHD
COFOUNDER
& CHIEF SCIENCE ADVISOR

Co-invented the technology with Nobel laureate, Rick Smalley, PhD, and created the scientific base for DexMat's CNT fiber spinning. Today he leads DexMat's science efforts. His experience includes 20+ years in CNTs and CNT fiber technology, 230+ articles, 20K citations, Kavli Prize Winner.



DMITRI TSENTALOVICH, PHD
COFOUNDER & CHIEF
TECHNOLOGY OFFICER

Began his career defining the industry's base understanding of how carbon nanotube properties affect carbon nanotube fiber properties, unlocking the high performance DexMat demonstrates today. 15+ years experience in CNT fiber technology.



SUPPORTED BY VISIONARIES

DexMat has a bold vision and we appreciate the support of our investors and advisors as we create the building blocks necessary for a cleaner, more secure economy.



CONTACT US

Write to **hello@dexmat.com**

Visit **dexmat.com**

Samples available for purchase at **dexmat.com/store**

Headquartered in **Houston, Texas, USA**





DEXMAT

THANK YOU