



## **High Temperature Superconductors, Inc. Powers Up: \$5M ARPA-E Program Work Begins**

***Company Announces Pivotal Partnerships with Advanced Conductor Technologies, and the Applied Superconductivity Center at the National High Magnetic Field Laboratory and the FAMU-FSU College of Engineering***

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SANTA BARBARA, Calif.--(BUSINESS WIRE)--High Temperature Superconductors, Inc., (HTSI) an innovation leader in the field of high-temperature superconducting tape, today announces the beginning of its novel manufacturing technologies project under the [superconducting tape exploratory topic](#) from the Advanced Research Project Agency – Energy (ARPA-E), within the U.S. Department of Energy (DOE). As previously [announced](#), HTSI received a \$5 million ARPA-E award, the largest fraction of the award granted under the \$10 million fund. The program is aimed at increasing production speed and reducing the cost of HTS tape to support the development of transformational energy technology applications for fusion power reactors, power transmission cables, and electric aircraft.

In fulfillment of the program, HTSI will develop a new PLD tool that increases production throughput up to five to ten times higher than present-day levels. The approach will also improve the quality and consistency of the HTS layer. Simultaneously, HTSI unveils strategic collaborations with [Advanced Conductor Technologies \(ACT\)](#) and [Florida State University's MagLab](#), setting the stage for groundbreaking advancements in superconductor materials.

HTSI's Founder and CEO, Ray Karam offered insights on the company's latest developments and partnerships.

"Today marks a significant milestone for HTSI as we begin the novel manufacturing technologies project for ARPA-E, aimed at enhancing the production efficiency and reducing costs of HTS tape in the United States," said Karam. "HTSI is poised to elevate production speeds and material quality. We are excited to be collaborating with the very experienced teams at ACT and FSU. They add tremendous support that will assist in driving our objectives to meet ARPA-E and our commercial goals."

## **New Strategic Alliances Facilitate Accelerated Impact**

In tandem with the program launch, HTSI proudly announces collaborative partnerships with two esteemed entities:

- **Advanced Conductor Technologies (ACT):** HTSI announces a strategic venture with Advanced Conductor Technologies, a leading provider of cutting-edge superconducting cable solutions. HTSI's expertise and ACT's innovative technologies will join forces to foster accelerated advancements in the field of high-temperature superconductor cables for a wide array of applications, including fusion, high-field magnets, and high-current cables for next-generation electrical machines.
- **Florida State University's National Mag Lab:** HTSI's partnership with the Applied Superconductivity Center at the MagLab at Florida State University aims to reduce HTS development time by providing best-in-class HTS characterization and testing, providing HTSI feedback on the performance of tape developed in the U.S. The collaboration leverages the combined strengths of both entities to drive transformative developments in superconductor materials.

Danko van der Laan, President and CEO of Advanced Conductor Technologies outlined the recent partnership with HTSI.

"Advanced Conductor Technologies' collaboration with HTSI yields a new era of possibilities in the realm of superconducting cable solutions. By combining ACT's expertise with HTSI's pioneering advancements, we aim to unlock new efficiencies and capabilities, propelling us towards a future powered by next-generation superconductor technologies across the U.S.," stated van der Laan.

Professor David Larbalestier, Chief Materials Scientist at the MagLab and Chair of the new Materials Science and Engineering Department in the FAMU-FSU College of Engineering, emphasized the collaboration with HTSI.

"The partnership between HTSI and Florida State University's Mag Lab represents a convergence of research excellence and industrial innovation aimed at expanding domestic US capabilities in high-field magnet technology. Together, my colleague Professor Tak Kametani and our team are pushing the boundaries of superconductor materials, leveraging US-based, state-of-the-art testing facilities and academic insights to accelerate the development of transformative energy technologies," Larbalestier said.

HTSI's recent developments underscore its position as a leader in HTS tape manufacturing in the United States. The company is poised to address the demand for commercial HTS tape manufacturing to meet industry needs. Adam Shelton, VP, Global Product Marketing and Business Development at HTSI, commented.

"The launch of the ARPA-E program and our new strategic partnerships mark a pivotal moment for HTSI, emphasizing our dedication to meeting the evolving demands of the HTS tape market. HTSI eagerly anticipates the opportunities these developments will unlock in shaping the future of our industry," said Shelton.

## **ABOUT HTSI**

Founded in 2019 and headquartered in Santa Barbara, CA, High Temperature Superconductors, Inc. (HTSI) has established a full-scale production line dedicated to manufacturing high-temperature superconducting (HTS) tape. Leveraging a best-in-class, modified pulse laser deposition (PLD) manufacturing process, the company focuses on serving key markets such as fusion power reactors and electrical power transmission. In 2022, HTSI acquired Boston-based PVD Products, a specialist in large-area PLD systems and equipment utilizing thin film physical vapor deposition (PVD) techniques.

## **ABOUT ACT**

Advanced Conductor Technologies was founded in June 2011 to commercialize high-temperature superconducting CORC<sup>®</sup> cables for high-field magnet and power transmission applications. Since 2012, twenty-four Phase I, nine Phase II, two Phase IIB, and one ARPA-E SBIR/STTR grants were awarded to Advanced Conductor Technologies by the U.S. Department of Energy, the U.S. Air Force, and the U.S. Navy, for developing CORC<sup>®</sup> cables and wires. The successful commercialization of CORC<sup>®</sup> cables and wires has resulted in a wide range of commercial orders from Lawrence Berkeley National Laboratory, Fermilab, General Atomics, Type One Energy, the United Kingdom Atomic Energy Authority, CERN, and Airbus, among many others.

## **ABOUT the National High Magnetic Field Laboratory (MagLab)**

The National High Magnetic Field Laboratory, a globally renowned facility located at Florida State University, hosts more than a thousand visiting scientists a year. The largest and highest-field magnet lab in the world enables researchers to utilize facilities for free, advancing understanding of materials, new technology, energy, health, the environment, and space.

**We invite you to explore in-depth information and resources available on both the [HTSI](#) and [PVD Products](#) websites.**

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