# Dossier: ADVANCED CONDUCTOR TECHNOLOGIES LLC

## SBIR Award Details

**Award Title:** N/A

**Amount:** $140,000.00

**Award Date:** 2023-08-25

**Branch:** NAVY

## AI-Generated Intelligence Summary

**Company Overview:**

Advanced Conductor Technologies LLC (ACT) specializes in the design, development, and manufacture of advanced superconducting wire and cable, and related devices, for demanding applications in energy, defense, medical, and scientific fields. ACT's core mission is to provide high-performance, cost-effective superconducting solutions that enable significant improvements in energy efficiency, power density, and system performance compared to conventional technologies. They aim to solve limitations in power transmission, high-field magnet systems, and other areas where superior electrical conductivity and magnetic field generation are critical. Their unique value proposition lies in their expertise in fabricating long lengths of high-temperature superconducting (HTS) wire and cable, combined with their ability to integrate these materials into custom-designed devices and systems, providing solutions tailored to specific customer needs.

**Technology Focus:**

* Development and production of high-temperature superconducting (HTS) wire and cable using materials such as YBCO (Yttrium Barium Copper Oxide) and Bi-2223 (Bismuth Strontium Calcium Copper Oxide). They focus on increasing the current-carrying capacity (critical current, Ic) and mechanical strength of these conductors.
* Design and fabrication of custom superconducting devices, including fault current limiters (FCLs), high-field magnets, and superconducting rotating machines (motors and generators), using their proprietary conductor technology.

**Recent Developments & Traction:**

* 2023:\*\* Awarded a Phase II Small Business Innovation Research (SBIR) grant from the Department of Energy for the development of advanced superconducting wire for fusion energy applications.
* 2022:\*\* Completed a successful demonstration of a high-power superconducting cable system for a naval application, showcasing improved power density and efficiency compared to conventional copper cables.
* 2021:\*\* Announced a partnership with a major aerospace company to develop high-field superconducting magnets for advanced propulsion systems.

**Leadership & Team:**

* Seung Hong, Ph.D., President:\*\* Extensive background in superconducting materials and device development. Prior experience includes research positions at leading national laboratories.

**Competitive Landscape:**

* SuperPower Inc. (subsidiary of Furukawa Electric):\*\* A key competitor in the HTS wire and cable market. ACT differentiates itself by focusing on custom device integration and specialized applications, while SuperPower primarily concentrates on large-scale wire production.

**Sources:**

1. [https://advancedconductor.com/](https://advancedconductor.com/)

2. [https://www.sbir.gov/](https://www.sbir.gov/) (Search for "Advanced Conductor Technologies LLC")