# Dossier: BUSEK CO., INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $74,952.00

**Award Date:** 2024-06-18

**Branch:** USAF

## AI-Generated Intelligence Summary

**Company Overview:**

Busek Co. Inc. is a research, development, and manufacturing company specializing in advanced spacecraft propulsion systems. Their primary business is the design, testing, and production of electric propulsion (EP) systems for a broad range of space missions, from small satellites (CubeSats) to larger, more complex spacecraft. Their core mission focuses on providing innovative and efficient propulsion solutions that enable extended mission lifetimes, increased payload capacity, and novel operational capabilities in space. Busek aims to solve the limitations of traditional chemical propulsion, particularly for smaller spacecraft where mass and volume are critical constraints, by offering high-performance, low-thrust EP systems. Their unique value proposition lies in their vertically integrated approach, encompassing in-house design, fabrication, testing, and operation of EP systems, coupled with a demonstrated track record of delivering flight-qualified hardware.

**Technology Focus:**

* Hall Effect Thrusters (HETs):\*\* Busek develops and manufactures a range of HETs, including miniaturized versions for CubeSats and larger, higher-power systems for spacecraft requiring more substantial propulsion capabilities. Specific examples include the BHT-200 (flight-proven on multiple missions) and higher-power variants undergoing development.
* Electrospray Thrusters (ESTs):\*\* Busek is a leader in EST technology, developing highly precise and controllable micro-propulsion systems. These systems use ionic liquid propellants to generate thrust, offering very fine thrust control for precise attitude control and station keeping. This includes their BIT-3 electrospray thruster, achieving thrust levels in the micro-Newton range.

**Recent Developments & Traction:**

* NASA Tipping Point Award (October 2020):\*\* Busek was awarded a NASA Tipping Point contract to mature high-power electric propulsion technology for future deep space missions. The award focused on the development of a 100-kW-class HET system.
* Delivery of Propulsion Systems for Government Programs:\*\* Busek has consistently delivered electric propulsion systems for various government and commercial satellite missions. While specific contracts details are not fully public, public releases and trade publications indicate ongoing delivery of systems for US Government space programs.
* Continued Development of High-Power HETs:\*\* Busek has continued research and development on high-power Hall Effect Thrusters, with a focus on increasing thrust efficiency and lifetime for demanding mission profiles. Public presentations and industry reports suggest progress in this area.

**Leadership & Team:**

* Vlad Hruby (President):\*\* Dr. Hruby is the President of Busek Co. Inc. and a leading expert in advanced propulsion systems. He has decades of experience in the field, with a strong background in plasma physics and electric propulsion.
* (Other key leadership details are limited in publicly available information.)\*\*

**Competitive Landscape:**

* Aerojet Rocketdyne:\*\* A major aerospace and defense contractor with a broad portfolio of propulsion systems, including electric propulsion. Busek differentiates itself by focusing on smaller, more specialized EP systems, especially for CubeSats and micro-satellites, where Aerojet Rocketdyne has a less concentrated presence.
* Accion Systems:\*\* Accion Systems focuses on tiled electrospray propulsion. Busek distinguishes itself with a broader portfolio that includes Hall Effect Thrusters as well as Electrospray Thrusters and a long operational history in the space industry.

**Sources:**

1. [https://www.busek.com/](https://www.busek.com/)

2. [https://www.nasa.gov/press-release/nasa-selects-companies-for-artemis-tipping-point-partnerships](https://www.nasa.gov/press-release/nasa-selects-companies-for-artemis-tipping-point-partnerships) (NASA Tipping Point Award announcement)

3. [https://spacenews.com/](https://spacenews.com/) (Search for Busek Co. Inc. to find relevant articles)

4. [https://directory.eoportal.org/web/eoportal/satellite-missions/content/-/article/propulsion-system-technology](https://directory.eoportal.org/web/eoportal/satellite-missions/content/-/article/propulsion-system-technology) (Overview of electric propulsion technologies)