DIRECT
KINETIC
SOLUTIONS

Everlasting Power

The Persistent Power Solution of Choice

Limitless Missions

LAND SEA SPACE

Extending the life of portable devices allowing them to complete the harshest of missions

DKS offers an ultra-compact radioisotopic power source that lasts for decades due to its unfair energy density advantage. Our devices go far beyond current market offerings, and enable missions previously thought of as impossible.

PROBLEM

Portable devices

Run out of Power

PERSISTENT

POWER OPTIONS

Need to be

PLUGGED

- Need to be connected into the grid to charge
- Require a large infrastructure

INTERMITENT

POWER OPTIONS

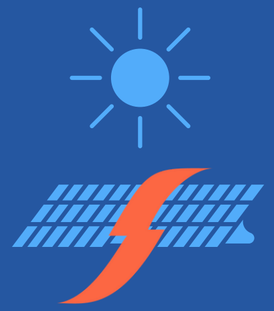
Need to be

MAINTAINED

- Millions of maintenance hours
- Replace batteries and/or devices
- Performance drops in hostile environments

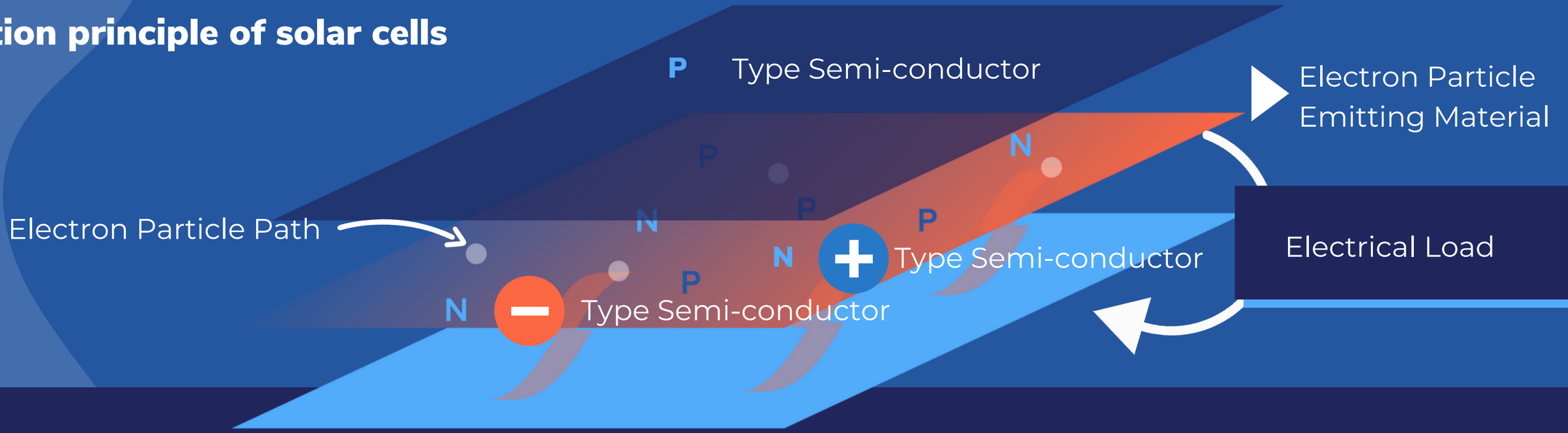
We compound the persistence and reliability of a power plant, with the convenience and mobility of a battery.

How our technology works



We place a small sun on top of a solar panel and capture its energy rain or shine, day or night.

Same generation principle of solar cells



In the Persistent Power Source (PPS), the power generating material (in orange) is surrounded by semiconductors to capture the decay and generate current

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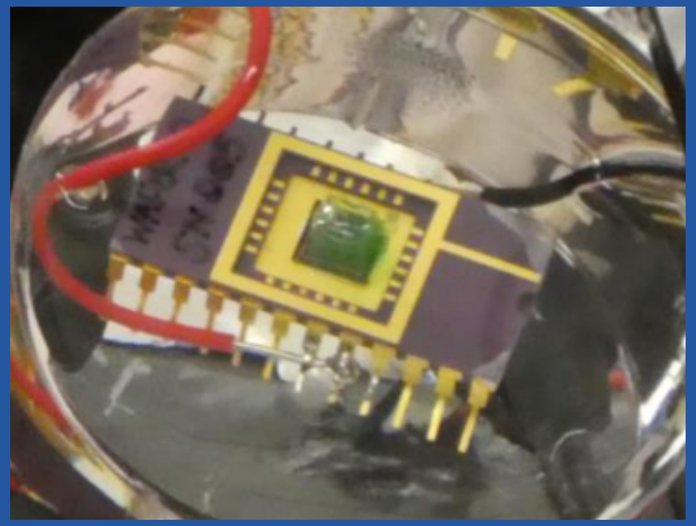
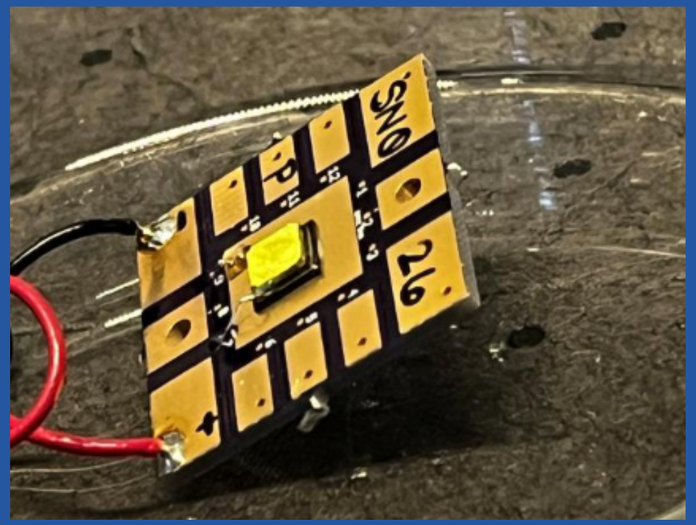
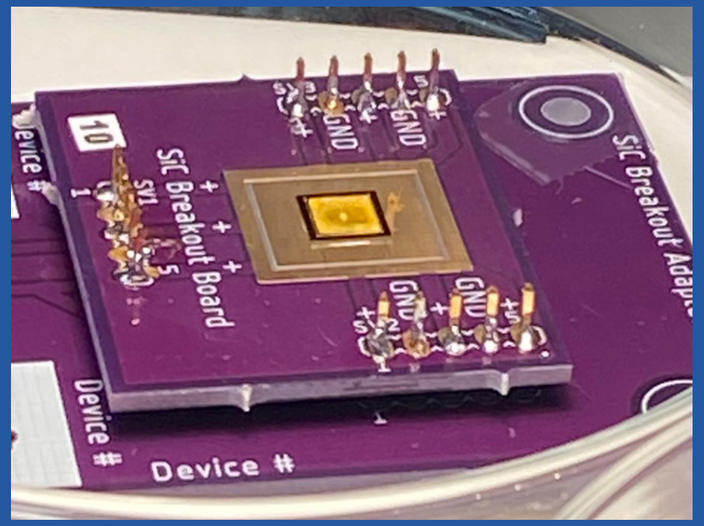
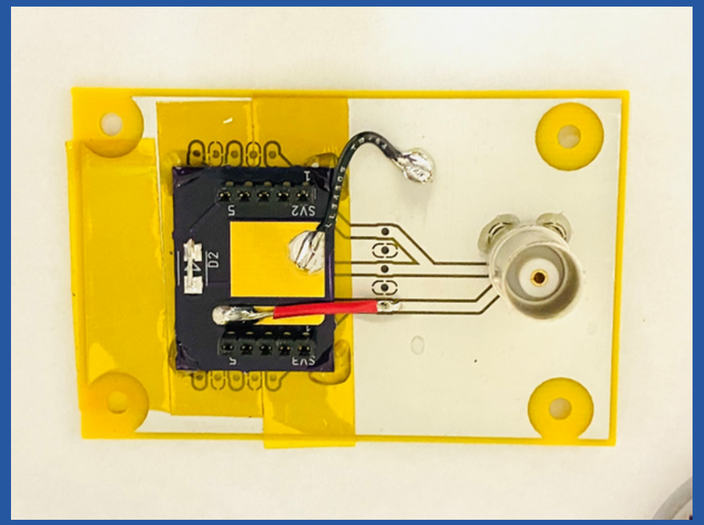
AN OVERVIEW OF

OUR PRODUCT









Completed Persistent Power Cell

As shown in the previous slide

Fully Integrated Power Source

Including Cell, harvester and converter

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Our business model

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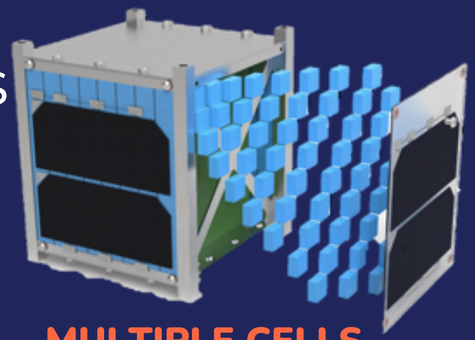
Our power generation capability scales with available area, from a simple one-cell device to power an IoT sensor, to multiple multi devices to generate power for a CubeSat.

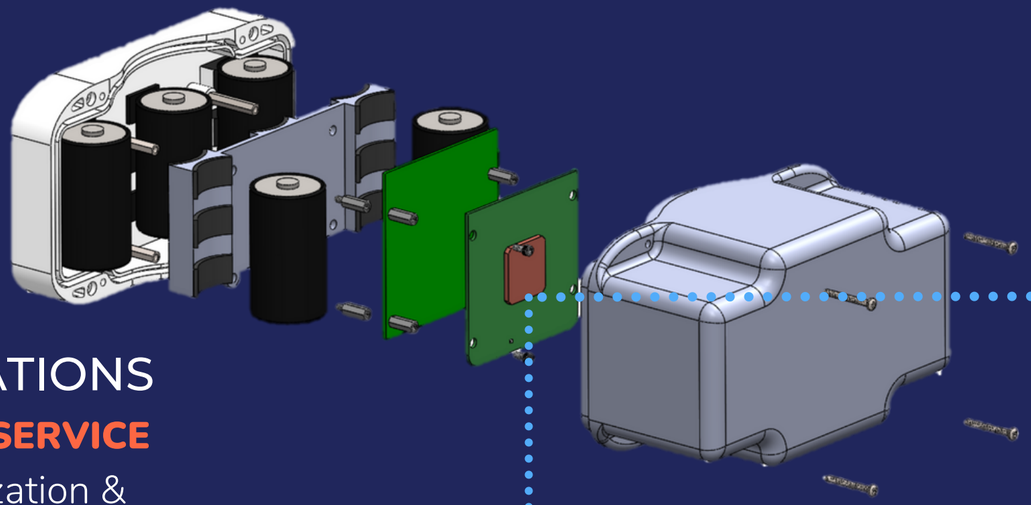
CUBESAT & SMALL SATELLITES

SPACE APPLICATIONS

- Reduce weight, optimize payload and elongate missions
- B2B direct sales model, custom solutions and plug and play catalog

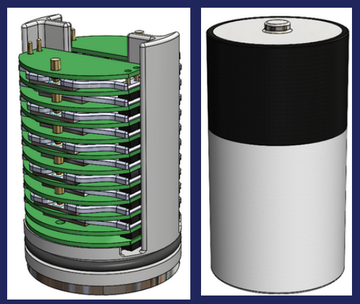


MULTIPLE CELLS



SINGLE CELLS

RPS DEVICE



IoT APPLICATIONS

SENSOR AS A SERVICE

- Increase asset utilization & reduce maintenance
- B2B direct sales model, custom solutions and retrofit product

COMMERCIAL FORM FACTORS

STACKABLE DESIGN

- D-Cell form factor includes 20 stackable devices.

PRODUCT - MARKET FIT

The Department of Defense is looking for **Li-ion** alternatives due to material, safety, and charging

Our Beach Head

$ 2B A YEAR
Invested in batteries

25% OF WEIGHT IN A 72H MISSION
30 lbs > 70 batteries

EXPECTED TO BALLOON BY **31%** by 2023

2ND HIGHEST COST
to an infantry battalion

$ 617M 2022 BUDGET FOR BATTERY R&D

Source: xTech Innovation Combine Meeting on 6/11/2021

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Maintenance Yard Contract

WITH THE UNITED STATES AIR FORCE

DKS SOLUTION

Closed GPS Device

Circuit Board with the RPS added to it

Problem

GPS tags failing within 6 months to a year of instillation on equipment expected to last for 20 years

Solution

By adding the RPS to the circuit board, we can extend the life of the tags to 5, 10, or 20 years

$30M POTENTIAL REVENUE

For 6,000 units operational in *one Air Force Base*

Oil Pipe Monitoring

DEVELOPMENT AGREEMENT IN PROCESS

IQrotech

Problem

Solar Panel which:

- Limits geographical availability
- Increases complexity of installation and maintenance

Solution

- Replace Solar Panel with Persistent Power Source
- Increase market size and share

2M Devices for subsea monitoring

OPENING NEW MARKET OPPORTUNITY FOR CUSTOMER.

Milestones

OUR CONTRACTS
+ ACHIEVEMENTS

2019

FedTech

$30,000

2020

TECH SEARCH

NSIN

$65,000

- NSIN Contract
- xTechSearch Whitepaper

2021

PSW
Paris Space Week

$625,000

- Air Force SBIR Phase I
- xTechSearch SBIR Phase 1
- Di2O contract
- Mass Challenge Cohort
- Paris Space Week
- Innovation Challenge Winner

2022

$3,825,000

- NSIC MVP Contract
- AFWERX Phase 1
- Air Force SBIR Phase 2
- HBS NVC Tough Tech
- Vertex Participation
- NSF Recommended

2023

$6,000,000

- NRE
- NASA Phase 2
- NSF Phase 2
- TACFI

MARKET OPPORTUNITY

TOTAL ADDRESSABLE MARKET

ANY DISPOSITIVE USING BATTERIES

$ 35B

POTENTIAL

CURRENT

Microsoft

TESLA

SAMSUNG

BLUE ORIGIN

SPACEX

SPiN Space Products and Innovation

NYK GROUP

IQrotech

Mitsubishi Corporation

BAE SYSTEMS

NASA

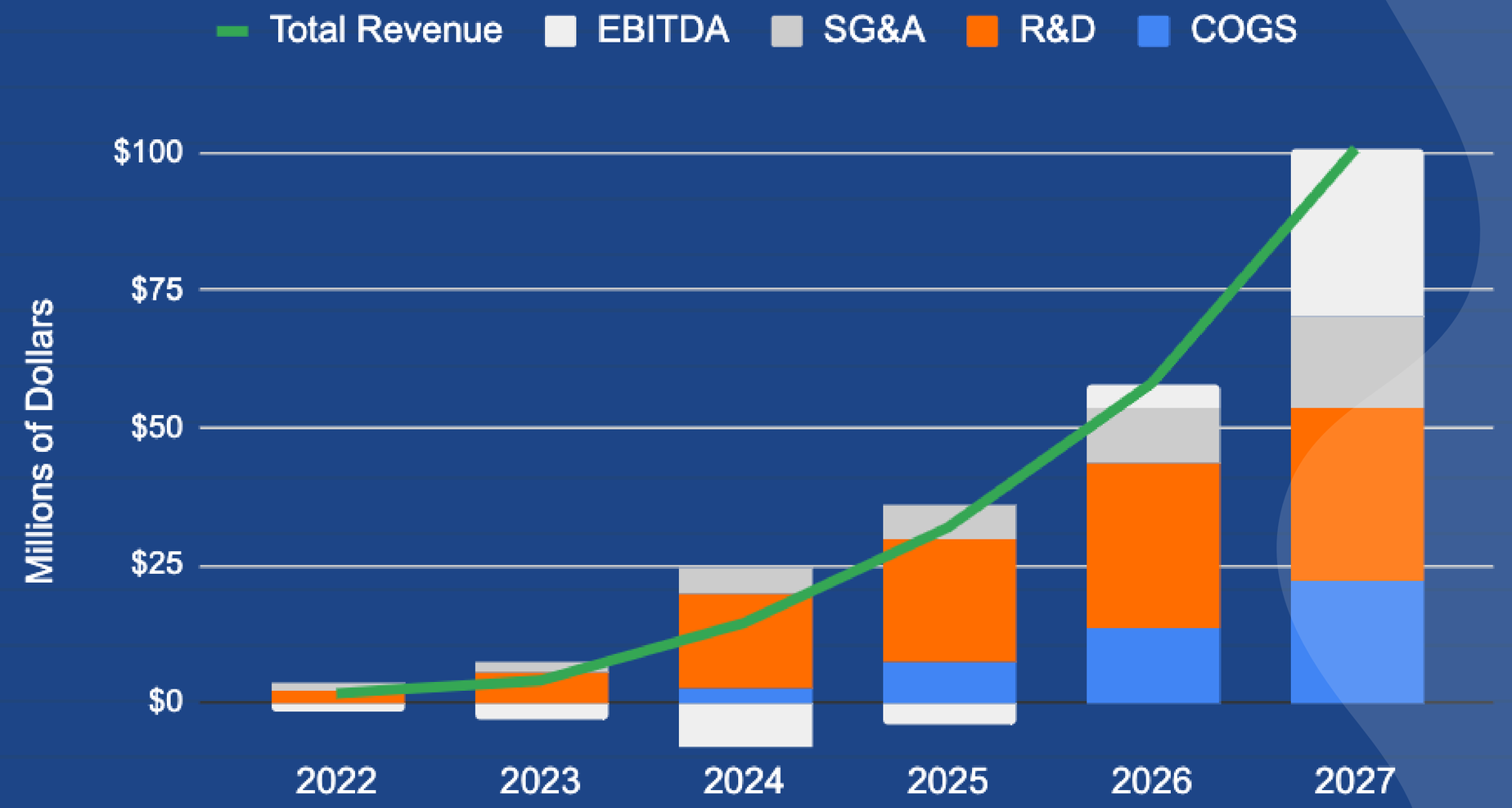
$ 4B — ADDRESSABLE

$900M — OBTAINABLE 2028

$350M — OBTAINABLE 2026

$ 30M — SERVICEABLE 2024

Financial Projections



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Why us?

Unique Technology

- Differentiated deposition method 3x over competition

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Market Opportunity

- Our customer: $2 Billion opportunity
- IoT and Space next, medical and consumer electronics long term

Better Materials

- Base materials have orders of magnitude energy density superiority.
- Compact design, decades of power, environmental immunity.

Experienced Team

- 40 + years of experience
- 30+ relevant publications

FUNDRAISING

$4M

The funds will used to achieve our comercialization goals

$1M committed

PRODUCT DEVELOPMENT

$1M to reach the Space market
$4B opportunity

BUSINESS DEVELOPMENT

$1M to keep our engagements
$10B opportunity with our traction

MANUFACTURING ACCELERATION

$2M to satisfy the AF contract
$2M match and $30M contract

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Leadership

EKHI MUNIATEGUI, CEO

MBA, Harvard Business School
BSIE, University of Texas at El Paso

Harvard Business School

Experienced in manufacturing, commercializing, and developing semiconductors and components for IoT industries.

Forbes UNDER 30

JOANNA PATSALIS, COO

MBA, Stern School of Business
BSB, University of Nottingham, UK

NYU STERN

Expert on global supply chain operations, and has led development and optimization projects in various industries.

Advisory Board

RICARDO RODRIGUEZ

Finance
CFO at Aspen Aerogels NYSE: ASPN

DAVID SCOTT ESQ

DoD Relationships & Contracting
Managing Director at OCEAN Accelerator Techlink

BRAD JENKINS & AUSTIN HILL

Sales & Strategy
Co-founders & Managing Directors at Seed Round Capital

DANIEL DUBOIS

Growth
Co-founder & President at Key 30 under 30 , Airbnb

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Technical Team

DR. MARC LITZ
ARL CRADA LIAISON

Ph.D. iBS, MS, PhD
Catholic University of America

Physicist in the Energy Sciences Division of the Army Research Laboratory. Expert in radioisotope power sources, and the study of advanced energetics utilizing nuclear materials.

DR. JOHNNY RUSSO
NUCLEAR ENGINEER

PhD, MS, BSME, University of Maryland

An ARL alumni with over 10 years of experience in nuclear technology. Extensive work on quantum mechanics and a patent holder for the base technology. He has experience with direct Beta emitting direct conversion radioisotopic power sources and has ideated indirect photovoltaic Alpha power sources.

DR. BRENDA SMITH
PRODUCT DEVELOPMENT SCIENTIST

Ph.D., Inorganic Chemistry, University of Tennessee
B.S. Chemistry, Kent State University

Former Oakridge National Labs (ORNL) Chemistry scientist, Brenda brings over a decade of experience in synthetic chemistry, radiochemistry, applied science, chemical processing, and energy converter systems, and designing novel radio- and photo-luminescent materials.

JUSTIN CHO
PRODUCT DEVELOPMENT ENGINEER

B.S. in Mechanical Engineering, University of Maryland Collage Park

ARL alum with over five years of experience as an Engineering Consultant in various fields, such as Mechanics, Nuclear Engineering, Robotics, Military Technology, and Artificial Intelligence.

WILLIAM RAY
ELECTRICAL ENGINEER

BSEE, BSCS, MSEE, Texas Tech University

Over 10 years of experience with power electronics, wide bandgap semiconductors, and RPS technologies. He has authored 31 publications and 1 patent for the base technology. He has worked along with Dr. Litz and Dr. Russo on the analysis and improvement of semiconductors for betavoltaic operation.

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