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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health



National Institutes of Health Commercialization Assistance Program  
(NIH-CAP)

## Company Profile

**Industry Sector:** Medical Devices

**Company Overview:** Strategic Polymer Sciences, Inc. (SPS) was founded in 2006 by Ralph Russo, a Silicon Valley executive and investor, and Dr. Qiming Zhang, an internationally recognized polymer scientist from Penn State University to commercialize electroactive polymer (EAP) technology. The mission of SPS is to create enabling technologies to improve the quality of living. SPS products currently serve the medical device, military, transportation, electronics, and energy industries. The company has plans to create three more technology platforms that will have applications in the optoelectronic, refrigeration, and semiconductor industries.

**Target Market(s):** Major medical device manufacturers worldwide

## Key Value Drivers

### Technology\*:

SPS's initial product offering is high energy density capacitors for pulse power and high energy density applications.

### Competitive Advantage:

Our thin film technology provides a distinct advantage in cost, size, and weight over traditional polypropylene capacitors. With energy densities at 3 to 5 times greater than competitive technologies, SPS customers can design smaller, energy-efficient capacitors for their products. The company is working on next-generation resins that will expand its market offerings to include a large segment of the electrolytic capacitor market. Next-generation capacitor applications include: hybrid electric vehicles market, power grid applications, power supplies, and lighting.

**Plan & Strategy:** Seeking strategic partner

\*Technology funded by the NIH Cardiovascular Diseases, National Heart, Lung, and Blood Institute and being commercialized under the NIH-CAP

## Management

### Leadership:

Ralph Russo, President and CEO (Board of Directors)  
Qiming Zhang, Ph.D., Vice President and CTO (Chairman, Board of Directors)  
Shihai Zhang, Ph.D., Director of Engineering  
Dean Anderson, Ph.D., Director of Operations  
Paul Rehrig, Ph.D., Director of Program Management  
Ailan Cheng, Ph.D., Program Director, Solid-State Cooling

### Scientific Advisory Board/Board of Directors:

Griff Baker, Managing Partner, Chengwei Ventures LLC (Board of Directors)  
Michele Washko, VP Strategic Services, Life Sciences Greenhouse of PA (Board)  
Dr. Mario Gonzalez, M.D., Program Director of Clinical Electrophysiology, Penn State Heart and Vascular Institute  
Dr. Doug Rittenhouse, M.D., Chairman, Department of Obstetrics and Gynecology, Seton Medical Center

## Electro-Active Polymer (EAP) Product Pipeline

Phase I

Phase II

Phase III

### High Energy Density Capacitors

Medical defibrillators, railgun

### High Performance Actuators

Steerable medical devices

### Solid-State Cooling

Next gen cooling