



Technology Readiness Level: **6**
System/subsystem Model or Prototype
Demonstration in a Relevant Environment

Antistatic Paint Prevents Buildup of Static Electricity

Protects Spacecraft Polymers and Electronic Components

Static charges that build up on a satellite in orbit can lead to a static discharge, producing an intense electromagnetic pulse that can destroy delicate electronic components.

The Solution

Eltron Research and Development has created an antistatic paint with silent discharge capability for protecting spacecraft polymers from attack by atomic oxygen, while preventing buildup of static electricity. These paints are used to bleed electric charges from surfaces to prevent the discharge of static electricity.

Features and Benefits

Eltron's new coatings adhere well to a number of metals, ceramics, and plastics. They emit no volatile organic compounds, are nonflammable, and are good shields for electromagnetic radiation. Satellite components could be coated with electrically conductive oxides that can be tailored for either black or white applications, depending on the thermal needs.

In addition, crystallites with needle-like growth morphologies can be produced. The extremely sharp points allow for very intense local electric fields to be produced, which eject negative and positive electric charges by electron field emission and field ionization.

Emitting built-up charges back into space by this silent discharge reduces the probability of a large, damaging discharge. Recent work for the NIH has dealt with optimizing these coatings for terrestrial applications including personal protective gear for preventing explosions in the fuel handling and powder manufacturing industries.

Stage of Development

Eltron has paint and process available for sale and commercialization.

Commercial cost is \$100/gallon.

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Contact Us

To discuss the possibility of entering into a business relationship with Eltron, contact the Business Development Group at business@eltronresearch.com.

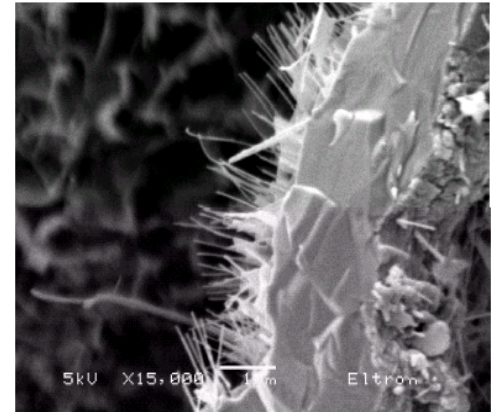


Figure 1. Crystallites with needle-like morphologies synthesized at Eltron Research and Development. Paints incorporating electron-conducting oxides are inert to atomic oxygen and can control charge on spacecraft by electron emission.