Intro to Averatek Corporation
Averatek is a high tech company founded by SRI International is based in Santa Clara, CA. The Averatek technology allows the creation of high density electronics in 3D for a variety of substrates (flexible, rigid, printed, molded, and cast) that use a variety of materials (polymers, metals, fibers) in a variety of applications (medical devices, wearable electronics, 3D printing, mobile electronics, and electronic sensors).

Averatek’s technology is based on patent protected nano-catalytic ink and ink blocker materials that facilitate the metallization of very high density and high precision electrical circuits and materials at low cost and low environmental impact.

The Averatek process is called print-and-plate because it includes the printing (imaging) of its nano-catalytic ink on a rigid or flexible substrate followed by the plating of a conducting metal on the image created by the ink. This represents a potential paradigm shift in rigid and flexible printed circuits, interposers, and other substrates.

Averatek technology (products and materials) easily fit within existing supply chains and production processes, is ideally suited and cost effective for advanced designs; and helps streamline existing production processes.

The additive feature of this technology allows the direct deposition of copper on a substrate in the pattern specified by the circuit design artwork without tie coat, adhesive, etching, or waste of copper.

Innovation in 3D metallization
Averatek’s breakthrough innovation is a special nano-catalyst that can be applied as a precursor “ink” that can be imaged to create the patterns or areas where conducting metal is to be deposited.

This ink controls the surface dimensions of line width and spacing.

The vertical dimension of metal thickness is controlled by using a proven plating process that deposits metal only on the patterns defined by the precursor ink.

An additional benefit is that the interior of vias can be plated with metal using the same process and at the same time that the surface conductors are also coated with the Averatek precursor ink.

This precursor ink creates strong bonds between the metal and the substrate, which improves lifetime and eliminates the need for adhesives and other bonding types.

Why this process is great
- Additive: no etching needed
- Semi-additive: all other apps
- High density: fine lines/spaces
- Productivity: eliminates steps
- Less cost: eliminates chemicals
- Less cost: no metal waste
- Less cost: 25% to 50% less
- Cleaner: no acid etchants
- Yields high quality copper
- 2D: Fine lines/spaces (> 3 μm)
- 3D: Via Excellence:
  - Most efficient via plating
  - Selectively plates inside vias
  - Facilitates stacked microvias
  - Creates nano-alloy on surfaces
  - Circuits inside 3D printed parts
  - Coats metal on various fibers

Materials Innovation for Rigid and Flex Circuits and the Internet of Things
Averatek Parts: Made-to-Order

Averatek parts are single layers of custom circuitry: patterned copper using customer-specific designs on a customer specified substrate with or without vias.

These single layers of fine line circuits are shipped to customer facilities for final assembly, test, and packaging. In essence, Averatek products are replacing or bypassing many, if not all, of the front-end masking, etching, trimming, and re-plating steps in the conventional circuit fab line.

Range of applications

- Fine line flex circuits
- Interposers
- Rigid PCBs
- Flex PCBs
- Medical devices
- Touch screens
- HD Displays
- Wearable sensors
- Nickel plated aluminum
- 3D printed parts
- Fiber circuits

Our current production capability is for copper patterns on substrates material of various thicknesses with features of any size down to 5 microns lines and spaces. The optical, and scanning electron microscope images below are examples of the clean, sharp edged lines that are necessary at these very narrow circuit widths.

For those flex circuit users who are open to this level of change, they could find that an Averatek solution can eliminate multiple production steps, and eliminate substantial cost. Use of the fine lines and thin copper can easily enable major new product capabilities in the industries using flex technology.

Averatek Materials: Ink Materials and Tech Transfer

For high volume manufacturers, Averatek will provide the ink, ink blocker, and other related materials and the necessary tech transfer services under a right-to-use license so that the benefits of the Averatek additive process can be integrated into existing high volume production operations.

About Averatek Corporation

Averatek Corporation was founded by SRI International, a global contract research and development institution, and a team of successful Silicon Valley entrepreneurs who have a long history in specialty metal plating businesses and products for companies such as CSL, IBM, Honeywell, and Sperry Univac.

SRI International was part of Stanford University as the Stanford Research Institute from 1946 until 1970 when it became independent as a non-profit contract research firm.

SRI has been developing and commercializing advanced technology products and processes for over 60 years.

Averatek has established its first production facility and headquarters in Santa Clara, CA.

Contact Us

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