



Innovolt: The Next Generation of Power Protection

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To date, Americans have bought more than \$2 billion worth of surge protectors, a commonly available consumer product designed to protect electronic devices from voltage spikes. But state-of-the-art research done by Deepak Divan – co-founder and chief innovation officer of Innovolt, Inc, a new member of Advanced Technology Development Center (ATDC) family – says that the level of protection provided by the existing products is just not enough in today’s digital world.

Divan discovered that traditional surge protectors only protect consumers from only one percent of the damage-causing voltage spikes. The other **99 percent** of damage-causing events relate to **voltage sags**, the very small fluctuations that occur over the grid all the time.

“I had worked in the power protection area for decades, and I was puzzled that electronics equipment still kept failing in the field despite the application of transient voltage surge suppression or TVSS devices,” explained Divan, also a professor in the School of Electrical and Computer Engineering and Director of the Intelligent Power Infrastructure Consortium (IPIC) at Georgia Tech. “I started digging and found that although lightning strikes are routinely blamed for damage, there is very little data that supports that.”

Divan’s research revealed that the culprit was not voltage surges but current-inrush surges – electrical current spikes that follow the small voltage sags. Such sags typically show up as a momentary flickering of lights. Many times our eyes don’t see it but the electronics does. Then, as electrical flow recovers, current surges can damage every type of electronics equipment from consumer to industrial.

Innovolt’s patented device, a current-inrush voltage surge suppressor (CVSS), was invented by Divan. This “next generation” surge protection technology combines current-in-rush suppression in addition to the traditional TVSS found in existing surge protectors. Whereas TVSS devices protect against voltage surges, CVSS devices additionally **protect against over-voltage and current surges**, as well as allowing for **micro-processor enabled diagnostics**.



“Last year alone, 45 million surge protectors were sold in the U.S. market at a median price of \$20 each. Those customers have already bought into the concept that they need some kind of protection,” said Divan. “Our idea is to come out with a product that is demonstrated to be superior and already includes the level of protection they are buying today. Getting people to purchase something that costs a comparable amount but protects more is a low hurdle to cross.”

Innovolt’s addressable market is comprised of residential, commercial, industrial, manufacturing and utility customers. Suresh Sharma, president and CEO of Innovolt, says that the company is developing a line of products that will help protect anything containing electronics, from televisions and computers to industrial equipment, and even the utilities grid.

“We looked at the market and this is a snapshot of where our products will immediately fit – retail consumers, offices, home theaters and industrial. You can see the potential for growth,” said Sharma, who previously served as global technology leader for GE Energy in Atlanta. “When there is enough consumer awareness, then there will be market pull. Our global team is innovating across all business functions – technology, marketing, supply chain and product development.”

Already, Innovolt has developed three types of surge protection devices, including a plug-in unit for consumers and a DIN rail-mounted unit for industrial equipment in equipment racks. The plug-in device was recently certified by Underwriters Laboratories (UL) and has been launched for sale. The DIN rail device would be marketed to industrial customers. Later business plans call for rolling out products and services to the commercial and utility sectors.

“Our sales and marketing strategy is two-pronged – top down and bottom up,” explained Sharma. “We will work from the customers’ end and address their needs, but we are also taking a different approach by creating awareness via ‘viral’ marketing – leveraging **Web 2.0 technologies** including Facebook, MySpace, Wikipedia, and others.”

Founded in October 2005, the company became fully operational during the first quarter of 2007, with more than \$2.5 million in angel funding. The vision of the company is to make a start in the energy industry from the power protection segment, but then continue to grow in energy management and energy efficient products for eco-friendly homes and environments. The company invested in Integral Technologies, India, Innovolt’s global product development partner, to produce **light-emitting diode (LED)** lighting solutions among several other **energy safety and efficiency** products. Sharma estimates the long-term global target market for Innovolt is more than \$270 billion.



“We see this as a next generation device, not as a completely different type of technology,” Divan said. “The users will not have to wonder if they need voltage or current protection – they will have both.”

Before joining the ATDC, the company received assistance from VentureLab, a Georgia Tech program that provides comprehensive assistance to faculty members, research staff and graduate students who want to form startup companies to commercialize the technology innovations they have developed. Sharma said he is excited about the potential of being associated with ATDC.

“I think this is one of the best business eco-systems I have ever seen. We like the ambience here, the access to the talent pool and the support,” he noted. “ATDC is creating a great legacy, and we would like to be a part of that.”

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About the ATDC: The Advanced Technology Development Center is a nationally-recognized science and technology incubator that helps Georgia entrepreneurs launch and build successful companies. ATDC provides strategic business advice and connects its member companies to the people and resources they need to succeed.

More than 110 companies have emerged from the ATDC, including publicly-traded firms such as MindSpring Enterprises – now part of EarthLink. Headquartered at Technology Square on the Georgia Tech campus in Atlanta, ATDC has been recognized by both BusinessWeek and Inc. magazines as among the nation’s top nonprofit incubators. Since 1999, ATDC companies have attracted more than a billion dollars in venture capital funding.

ATDC was formed in 1980 to stimulate growth in Georgia’s technology business base and now has locations in Atlanta, Savannah and Warner Robins. ATDC is part of Georgia Tech’s Enterprise Innovation Institute. For more information, please visit (www.atdc.org).

Research News & Publications Office
Enterprise Innovation Institute
Georgia Institute of Technology
75 Fifth Street, N.W., Suite 100
Atlanta, Georgia 30308 USA

Media Relations Contacts:
John Toon (404-894-6986); E-mail: (john.toon@innovate.gatech.edu) or
Nancy Fullbright (404-526-6235); E-mail: (nancy.fullbright@innovate.gatech.edu).

Writer: Nancy Fullbright