

eFuses and System Security

As chip design becomes more and more expensive, companies are going toward more and more joint development partnerships. Once in these partnerships, companies need ways to protect their intellectual property. Due to the testability required for chips it is very difficult to create a chip that is both testable and protected from the outside world. Chip manufacturers also have a vested interest in protecting their intellectual property from being reverse engineered by either their partners or a third party. This is usually done by either getting the chip into a manufacturing test mode to discover its function or by sending random commands into the chip to map its command architecture. With many new products having access to the Internet, it also becomes important to be able to verify that the product connecting to a company's servers was actually built by them. Keys and secure IDs can be stored in fuses on a chip inside the product but that information must then be hidden from hackers.

Additionally, as chip design becomes more and more expensive, it becomes useful to use one chip in as many applications as possible. One of the major issues with this is when a chip is used in two different applications where one application requires additional functionality and is more expensive. In the past customers have discovered ways to enable the additional functionality and negate any need to buy the more expensive part. This problem has limited the ability to use one chip over many applications.

All manufacturing processes yield a distribution of parts. Similarly, parts being used in the field see a distribution of environmental conditions and performance degradation over time. Problems arise when software running on hardware is unable to accommodate the full hardware and environmental distributions. Regardless of the distribution cause, it is desirable to make all parts behave like the nominal for the duration of their product life. Also, future software could be loaded onto the hardware that would require the hardware to operate at new nominal conditions.

All of these issues create needs for on chip security functions that are able to be activated and deactivated on demand. This presentation will cover using eFuses as a building block to implement solutions to security problems.

IEEE Online Communities

An Online Community consists of a group of individuals that have a shared purpose or common interests that utilize online communication and collaboration tools to facilitate the accomplishment of their goals or to fill voids that may currently exist by relying solely on in-person or real-time interactions. Online Community Members are engaged in value-creating relationships with "anytime/anywhere" access to shared knowledge. Through the use of tools in the software platform, community members interact socially, which facilitates a sense of togetherness.

IEEE delivers tools and methods for online collaboration so that each community can quickly focus on vital issues or projects at hand, operate in a cost-effective manner, enhance continuity of effort, clarify and gain consensus through dialog, create synergistic interdependence with other IEEE constituencies and create valuable resources.

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To preview or join any of the IEEE Online Communities visit:

<https://www.ieeeonlinecommunities.org>

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Featuring: Chris Paone

Monday, April 25th, 6:30 pm
Mayo Medical Sciences Building
(321 3rd Avenue SW, Rochester)

► Pizza at 6:30; Meeting at 7:00 ◀

Chris Paone is an Array designer for IBM at Rochester, MN. He has focused on ROM design during his five years with the array team. The ROM design experience has also included using electrically programmable fuses to enable system security functions. Some of his projects include the Playstation 3 and the Xbox 2.

Chris has a B.S. in Electrical Engineering from Iowa State University where he emphasized in device physics.

Opportunities in Biomedical Engineering?

A Career Center has been constructed to help those interested in careers in biomedical engineering connect with new employment opportunities. Employers and recruiters: You now have access to our specialized niche. Browse our resumes or post your employment opportunity. It's all at:

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The Bio•IT World Conference + Expo™ will feature two of the most prestigious scientists in their respective fields. **J. Craig Venter**, PhD, president of the J. Craig Venter Institute, pioneered the mapping of the human genome. **Tim Berners-Lee**, director of the World Wide Web Consortium, invented the World Wide Web. Both will share their unique perspectives on the changing landscape of bio-IT during their keynote addresses.

Now in its fourth year, Bio•IT World Conference + Expo will take place **May 17-19, 2005** at Boston's Hynes Convention Center. The Bio•IT World Conference + Expo attracts pharmaceutical, biotechnology, academic, government and life science professionals who come to learn how technology tools for the life sciences can drive efficiencies, create opportunities and increase profitability within their organizations.

The Bio•IT World Conference + Expo is the leading event to demonstrate how technology is transforming the life sciences throughout all discovery and development processes. It is designed for life science professionals looking to evaluate and understand advanced solutions that generate, collect and analyze the flood of information being produced by the life sciences industry. Visionaries from the biotechnology, pharmaceutical, healthcare, academic and government markets convene to learn how the latest tools, services and best practices will help revolutionize our health, our environment and our society. For more information, visit www.bio-itworldexpo.com.

Pre-College Educator Award

The IEEE Educational Activities Board is currently accepting nominations for the 2005 Pre-College Educator Award. The award is given to teachers that foster students' interest in and encourage students to pursue careers in mathematics, science, technology, and engineering.

The deadline for nominations is **30 April 2005**. The winning teacher receives \$1,000 US and a brass and walnut plaque.

Each candidate must be nominated by one of the 307 IEEE Sections. To date, IEEE has awarded teachers from sections within Regions 8, 3, 2, and 1.

For further information on the IEEE Pre-College Educator Award or for instructions on how to submit a nomination, go to <http://www.ieee.org/organizations/eab/EABAwards/awardprecollege-2004.htm>.

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Songs in the Key of E

We all know electrification changed music (insert name of your favorite guitar hero here), but there's a whole other range of instruments that relies on electronics to work.

The IEEE Virtual Museum has launched its latest exhibit, "Songs in the Key of E," which explores the numerous ways electronics have been used to create music. With examples such as the singing arc, the theremin and the synthesizer, among others, the exhibit highlights both the inventors of electronic instruments and the instruments themselves, and uses audio clips to demonstrate the various sounds.

This is the eighth IEEE Virtual Museum exhibit since its launch in 2002. Aimed at pre-college students and their educators, the museum explores the global impact of electrical and information sciences and technologies to demonstrate how relevant engineers are to society.

www.ieee-virtual-museum.org

Information Free-for-All?

If open access -- a movement gaining momentum in academic publishing circles that proposes journal articles be made available online to all readers for free -- becomes a reality, the results could dramatically reshape the activities of all scholarly publishers, including the IEEE. Read more at: <http://boldfish.ieee.org/u/openacc7d/01561869>



The Institute of Electrical and Electronics Engineers, Inc.

Southern Minnesota Section

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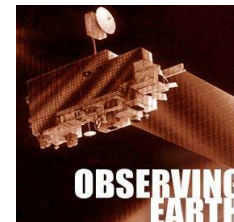
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