



SPECIAL ISSUE

TRUSTWORTHY HARDWARE

Edited by R. Karri and F. Koushanfar

1126 Physical Unclonable Functions and Applications: A Tutorial

By C. Herder, M.-D. Yu, F. Koushanfar, and S. Devadas

INVITED PAPER This paper is a tutorial on ongoing work in physical-disorder-based security, security analysis, and implementation choices.

1142 Public Physical Unclonable Functions

By M. Potkonjak and V. Goudar

INVITED PAPER This paper surveys the time-bounded or public PUFs, including their design and security evaluation and the new protocols that they can support.

1157 Microcontrollers as (In)Security Devices for Pervasive Computing Applications

By D. Strobel, D. Oswald, B. Richter, F. Schellenberg, and C. Paar

INVITED PAPER This paper discusses possible threats to embedded systems using two microcontroller case studies.

1174 Trustworthiness of Medical Devices and Body Area Networks

By M. Zhang, A. Raghunathan, and N. K. Jha

CONTRIBUTED PAPER This paper surveys the threat landscape of medical embedded devices and the merits and shortcomings of existing defenses.

1189 Mobile Trusted Computing

By N. Asokan, J.-E. Ekberg, K. Kostiainen, A. Rajan, C. Rozas, A.-R. Sadeghi, S. Schulz, and C. Wachsmann

INVITED PAPER This paper surveys the trusted computing features in mobile computing platforms.

1207 Counterfeit Integrated Circuits: A Rising Threat in the Global Semiconductor Supply Chain

By U. Guin, K. Huang, D. DiMase, J. M. Carulli, Jr., M. Tehranipoor, and Y. Makris

INVITED PAPER This paper surveys the state of the art in counterfeiting and detection technologies.

1229 Hardware Trojan Attacks: Threat Analysis and Countermeasures

By S. Bhunia, M. S. Hsiao, M. Banga, and S. Narasimhan

INVITED PAPER This paper is a survey of the state-of-the-art Trojan attacks, modeling, and countermeasures.

1248 FPGA Security: Motivations, Features, and Applications

By S. M. Trimberger and J. J. Moore

INVITED PAPER This paper discusses all aspects of FPGA security and trust.

1266 Regaining Trust in VLSI Design: Design-for-Trust Techniques

By J. Rajendran, O. Sinanoglu, and R. Karri

INVITED PAPER This paper surveys how concepts in VLSI test can be adopted in the context of hardware security and trust and design-for-trust techniques.

1283 A Primer on Hardware Security: Models, Methods, and Metrics

By M. Rostami, F. Koushanfar, and R. Karri

INVITED PAPER The paper is a primer on hardware security threat models, metrics, and remedies.

DEPARTMENTS

1118 POINT OF VIEW

Energy Return On Energy Invested (EROI): A Quintessential but Possibly Inadequate Metric for Sustainability in a Solar-Powered World?
By W. F. Pickard

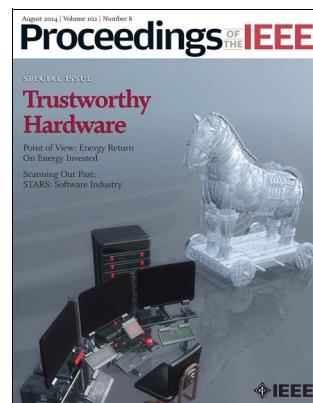
1123 SCANNING THE ISSUE

Trustworthy Hardware
By R. Karri and F. Koushanfar

1296 SCANNING OUR PAST

STARS: Software Industry
By B. Grad

1304 FUTURE SPECIAL ISSUES/SPECIAL SECTIONS



On the Cover: On this month's cover, security issues are highlighted in general by the illustration of the Trojan horse which the Greeks used successfully to breach the city of Troy.