

AsianHOST 2017 Technical Program

AsianHOST 2017 Program Highlights

- 6 Featured Invited Speakers showcasing some of the world's leading innovative thinkers in hardware security! It includes 2 Keynote Talks and 4 Visionary Talks.
- 22 Technical Papers
- One panel on industrial view towards hardware security in Asia
- Cisco Best Paper Award

Thursday, October 19, 2017

7:15 - 8:15AM Registration

SESSION 1: PLENARY SESSION

Moderator: Gang Qu, University of Maryland

8:15 - 8:30AM Opening Remarks: AsianHOST 2017 General and Program Chairs

8:30 - 8:45AM Welcome Remarks

Speaker: Zheng You, Vice President of Tsinghua University, Member of China Engineering Academy

Title: *Hardware Security in Asia*

8:45 - 9:30AM KEYNOTE I

Speaker: Shaojun Wei, Tsinghua University

Title: *Reconfigurable Computing and Hardware Security*

9:30 - 10:00AM VISIONARY TALK

Speaker: Ramesh Karri, New York University

Title: *Towards Securing Biochips*

10:00 - 10:30AM BREAK

10:30 - 11:50AM SESSION 2: IP/IC PROTECTION

Session Chair: Pingqiang Zhou, ShanghaiTech University

- **DOST: Dynamically Obfuscated Wrapper for Split Test against IC Piracy*
Xiaoxiao Wang, Yueyu Guo, and Dongrong Zhang - Beihang U.
M. Tauhidur Rahman, and Mark Tehranipoor - U. of Florida
- *PCH Framework for IP Runtime Security Verification*
Xiaolong Guo, Jiaji He, and Yier Jin - U. of Florida
Raj Gautam Dutta -U. of Central Florida
- *Secure Integration of Non-Trusted IPs in SoCs*

Festus Hategekimana, Taylor Whitaker, Md Jubaer Hossain and Christophe Bobda - U. of Arkansas

- *Scalable Security Path Methodology: A Cost-security Trade-off to Protect FPGA IPs against Active and Passive Tamper*
Sharareh Zamanzadeh and Ali Jahanian - Shahid Beheshti U.

*** Cisco Best Paper Candidate**

11:50AM - 1:20PM LUNCH

1:20 - 1:50PM SESSION 3: VISIONARY TALK

Session Chair: Jing Ye, Chinese Academy of Science

Speaker: Swarup Bhunia and Demonic Forte, University of Florida

Title: *Security of the Internet of Things: New Frontiers*

1:50 - 3:30PM SESSION 4: PHYSICAL UNCLONABLE FUNCTION AND RANDOM NUMBER GENERATOR

Session Chair: Jiun-Lang Huang, National Taiwan University

- **On-chip jitter measurement for true random number generators*
Bohan Yang, Vladimir Rozic, Milos Grujic, Nele Mentens and Ingrid Verbauwhede - IMEC-COSIC, KU Leuven
- **An Energy-efficient True Random Number Generator Based on Current Starved Ring Oscillators*
Yuan Cao, Chip Hong Chang, and Yue Zheng - Nanyang Technological U.
Xiaojin Zhao - Shenzhen U.
- *Implementation of Stable PUFs Using Gate Oxide Breakdown*
Wei-Che Wang, Yair Yona, Yizhang Wu, Szu-Yao Hung, Suhas Diggavi, and Puneet Gupta - UCLA
- *The Impact of Discharge Inversion Effect on Learning SRAM Power-Up Statistics*
Zhonghao Liao, George Amariuca, Raymond Wong and Yong Guan - Iowa State U.
- *Polymorphic PUF: Exploiting Reconfigurability of CPU+FPGA SoC to Resist Modeling Attack*
Jing Ye, Yue Gong, Yu Hu and Xiaowei Li - Institute of Computing Technology, Chinese Academy of Sciences

*** Cisco Best Paper Candidate**

3:30 - 3:50PM BREAK

3:50 - 5:30PM SESSION 5: IOT AND CPS SECURITY

Session Chair: Wei Sheng, University of Nebraska-Lincoln

- *Secure Intra-Vehicular Communication over CANFD*
Ali Shuja Siddiqui, Chia-Che Lee, and Fareena Saqib - U. of North Carolina at Charlotte
Wenjie Che and Jim Plusquellic - U. of New Mexico
- *Mixed-Granular Architectural Diversity for Device Security in the Internet of Things*
Robert Karam - U. of South Florida
Tamzidul Hoque, Kevin Butler and Swarup Bhunia - U. of Florida
- *Obfuscating Branch Decisions based on Encrypted Data using MISR and Hash Digests*
Nektarios Georgios Tsoutsos - New York U.
Michail Maniatakos - New York U. Abu Dhabi
- *MPA: Model-assisted PCB Attestation via Board-level RO and Temperature Compensation*
Zimu Guo, Xiaolin Xu, Mark Tehranipoor and Domenic Forte - U. of Florida
- *'The Dangers of Sleeping', an Exploration of Security in Non-Volatile Processors*
Patrick Cronin and Chengmo Yang - U. of Delaware
Dongqin Zhou and Keni Qui - Capital Normal U.
Xin Shi and Yongpan Liu - Tsinghua U.

6:30 - 8:30PM DINNER AND AWARD CEREMONY (DoubleTree by Hilton Beijing)

Ceremony Moderators:

Hualu Liu, Editor-in-Chief, China Post and Communication Press

Huaqiang Wu, Associate Director, Beijing Innovation Center for Future Chip

Gang Qu, Professor, University of Maryland

Cisco Best Paper Moderator:

Yousef Iskandar, Cisco

Friday, October 20, 2017

7:30 - 8:30AM Registration

SESSION 6: PLENARY SESSION

Moderator: Yier Jin, University of Central Florida

8:30 - 9:15AM KEYNOTE II

Speaker: Marilyn Claire Wolf, Georgia Tech

Title: *HARDWARE-ORIENTED SECURITY, CPS, AND IOT*

9:15 - 9:50AM VISIONARY TALK

Speaker: Wenyuan Xu, Zhejiang University/University of South Carolina

Title: *Analog Security of Cyber-Physical Systems – From 0101 to Mixed Signals*

9:50 - 10:20AM BREAK

10:20AM - 11:40PM SESSION 7: SIDE-CHANNEL ANALYSIS AND PHYSICAL UNCLONABLE FUNCTION

Session Chair: Xiaoxiao Wang, Beihang University

- *Improved low-entropy masking scheme for LED with mitigation against correlation-enhanced collision attacks*
Fan Zhang, Liang Geng, and Jizhong Shen - Zhejiang U.
Shivam Bhasin - Nanyang Technological U.
Xinjie Zhao and Shize Guo - The Institute of North Electronic Equipment
- *A New Key Rank Estimation Method to Investigate Dependent Key Lists of Side Channel Attacks*
Shuang Wang, Yang Li and Jian Wang - Nanjing University of Aeronautics and Astronautics
- *Extending 1kb RRAM Array from Weak PUF to Strong PUF by Employment of SHA Module*
Rui Liu and Shimeng Yu - Arizona State U.
Huaqiang Wu, Yachuan Pang, and He Qian - Tsinghua U.
- *PUFSec: Protecting Physical Unclonable Functions Using Hardware Isolation-based System Security Techniques*
Mengmei Ye, Mehrdad Zaker Shahrak, and Sheng Wei - U.of Nebraska-Lincoln

12:00 - 1:00PM Lunch

1:00 - 1:30PM SESSION 8: VISIONARY TALK

Session Chair: Domenic Forte, University of Florida

Speaker: Yousef Iskander, Cisco

Title: *Making Hardware Security and Trust the Next Market Differentiator*

1:30 - 2:50PM SESSION 9: ATTACKS AND DEFENSES

Session Chair: Chengmo Yang, University of Delaware

- *A Split Manufacturing Approach for Unclonable Chipless RFIDs for Pharmaceutical Supply Chain Security*
Kun Yang, Ulbert Botero, Haoting Shen, Domenic Forte and Mark Tehranipoor - U. of Florida
- *A Practical Cold Boot Attack on RSA Private Keys*
Tian Wang, Xiaoxin Cui, Yewen Ni, and Dunshan Yu - Peking U.

Xiaole Cui - Peking U. Shenzhen Graduate School
Gang Qu - U. of Maryland

- *Employing Dual-complementary Flip-Flops to Detect EMFI Attacks*
Chinmay Deshpande, Bilgiday Yuce, Patrick Schaumont and Leyla Nazhandali - Virginia Tech
- *Evaluating Obfuscation Performance of Novel Algorithm-to-Architecture Mapping Techniques in Systolic-Array-based Circuits*
Jiafeng Xie - Wright State U.
Xiaojun Zhou - Central South U.

2:50 - 3:50PM SESSION 10: PANEL

Topic: *Global Electronic Supply Chain Security: What Can Asian Pacific Region Do About it?*

Panel Organizers: Yousef Iskandar and Mark Tehranipoor

Panel Moderator: Yousef Iskandar, Cisco

Panelists:

Mark Tehranipoor - University of Florida

Xiaowei Li - Institute of Computing Technology Chinese Academy of Science (ICT)

Brian Cohen - Institute for Defense Analyses (IDA)

Qiang Xu - Chinese University of Hong Kong

Gang Qu - University of Maryland

3:50 - 4:00M Closing Remarks

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