

Table of Contents

New Results for Rank-Based Cryptography	1
<i>Philippe Gaborit, Olivier Ruatta, Julien Schrek, and Gilles Zémor</i>	

Public-Key Cryptography

Proxy Re-Encryption Scheme Supporting a Selection of Delegates	13
<i>Julien Devigne, Eleonora Guerrini, and Fabien Laguillaumie</i>	
Trapdoor Privacy in Asymmetric Searchable Encryption Schemes	31
<i>Afonso Arriaga, Qiang Tang, and Peter Ryan</i>	
Kurosawa-Desmedt Key Encapsulation Mechanism, Revisited	51
<i>Kaoru Kurosawa and Le Trieu Phong</i>	

Hash Functions

Differential Biases in Reduced-Round Keccak	69
<i>Sourav Das and Willi Meier</i>	
Practical Distinguishers against 6-Round Keccak- f Exploiting Self-Symmetry	88
<i>Sukhendu Kuila, Dhiman Saha, Madhumangal Pal, and Dipanwita Roy Chowdhury</i>	
Preimage Attacks on Reduced-Round Stribog	109
<i>Riham AlTawy and Amr M. Youssef</i>	

Secret-Key Cryptanalysis

Breaking the IOC Authenticated Encryption Mode	126
<i>Paul Bottinelli, Reza Reyhanitabar, and Serge Vaudenay</i>	
New Treatment of the BSW Sampling and Its Applications to Stream Ciphers	136
<i>Lin Ding, Chenhui Jin, Jie Guan, and Chuanda Qi</i>	
Multidimensional Zero-Correlation Linear Cryptanalysis of E2	147
<i>Long Wen, Meiqin Wang, and Andrey Bogdanov</i>	

Public-Key Cryptanalysis and Number Theory

Further Improvement of Factoring RSA Moduli with Implicit Hint	165
<i>Liqiang Peng, Lei Hu, Jun Xu, Zhangjie Huang, and Yonghong Xie</i>	

New Attacks on the RSA Cryptosystem 178
*Abderrahmane Nitaj, Muhammad Reza Kamel Ariffin,
 Dieaa I. Nassr, and Hatem M. Bahig*

Formulae for Computation of Tate Pairing on Hyperelliptic Curve
 Using Hyperelliptic Nets 199
Christophe Tran

Hardware Implementation

New Speed Records for Montgomery Modular Multiplication on 8-bit
 AVR Microcontrollers 215
Zhe Liu and Johann Großschädl

Minimizing S-Boxes in Hardware by Utilizing Linear Transformations . . . 235
*Sebastian Kutzner, Phuong Ha Nguyen, Axel Poschmann, and
 Marc Stöttinger*

Efficient Masked S-Boxes Processing – A Step Forward – 251
Vincent Grosso, Emmanuel Prouff, and François-Xavier Standaert

A More Efficient AES Threshold Implementation 267
*Begül Bilgin, Benedikt Gierlichs, Svetla Nikova,
 Ventzislav Nikov, and Vincent Rijmen*

Protocols

Constant Rounds Almost Linear Complexity Multi-party Computation
 for Prefix Sum 285
*Kazuma Ohara, Kazuo Ohta, Koutarou Suzuki, and
 Kazuki Yoneyama*

Position-Based Cryptography from Noisy Channels 300
Stefan Dziembowski and Maciej Zdanowicz

Lattice-Based Cryptography

A Comparison of the Homomorphic Encryption Schemes FV and
 YASHE 318
Tancrède Lepoint and Michael Nachrig

Towards Lattice Based Aggregate Signatures 336
Rachid El Bansarkhani and Johannes Buchmann

Public-Key Cryptography

A Second Look at Fischlin’s Transformation	356
<i>Özgür Dagdelen and Daniele Venturi</i>	
Anonymous IBE from Quadratic Residuosity with Improved Performance	377
<i>Michael Clear, Hitesh Tewari, and Ciarán McGoldrick</i>	
Expressive Attribute Based Signcryption with Constant-Size Ciphertext	398
<i>Y. Sreenivasa Rao and Ratna Dutta</i>	

Secret-Key Cryptography

DRECON: DPA Resistant Encryption by Construction	420
<i>Suvadeep Hajra, Chester Rebeiro, Shivam Bhasin, Gaurav Bajaj, Sahil Sharma, Sylvain Guilley, and Debdeep Mukhopadhyay</i>	
COUNTER- <i>b</i> DM: A Provably Secure Family of Multi-Block-Length Compression Functions	440
<i>Farzaneh Abed, Christian Forler, Eik List, Stefan Lucks, and Jakob Wenzel</i>	
Universal Hash-Function Families: From Hashing to Authentication	459
<i>Basel Alomair</i>	
Author Index	475