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SPECIAL ISSUE ON
“SI: Cryptography and Data Security in Sustainable Computing”

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AIMS & SCOPE:
With the proliferation of several kinds of attacks towards ICT infrastructures and the relative effects caused by a successful compromise of them, data security is of pivotal importance in our current society. As a practical example, health-related data are rapidly being digitalised passing from paper-based communications among patients and physicians to computer-based ones. However, the occurrence of data leakage is increasing, with the consequence of stealing sensitive personal information from the leaked health-related data. In order to protect the ICT infrastructures from these attacks, several solutions have been proposed, where cryptography plays a key role. Despite being able to provide a suitable degree of security and privacy, such solutions have not been designed by taking care of their energy consumption and resource usage. Therefore, they are not optimal in the case of resource-constrained systems, such as sensor networks, and are under radical rethinking in order to be effectively adopted in such context. Moreover, the recent increasing attention to climate changes and environmental issues are leading a considerable debate on how changing the current computing technologies so as to have less severe effects on the global warming and resource usage. Such a debate involves also the current cryptosystems and the other widely-accepted solutions to provide data security, so as to modify them by considering their sustainability.

The aim of the special issue is to solicit novel contributions to the current debate of realizing sustainable solutions to support data security and to realize cryptosystems to protect the data at rest and in motion within the current ICT infrastructures, by also seeking practical experiences in using these solutions in concrete use cases of Green Computing and Resource-Constrained Systems.

Topics of interest include, but are not limited to:

- Lightweight Cryptography
- Sustainable Data Security
- Data Security and Cryptography in Resource-constrained Systems
- Sustainability in Mission Critical Systems
- Security, Privacy and Trust for IoT and CPS Systems
- Security and Privacy for RFID, sensors, actuator technologies
- Security in Smart Grids and Smart Cities
- Low power IoT sensor cryptography
- Multi-level IoT sensor cryptography
• Shared IoT firewall services
• IoT Security as a Service, via ISPs

Submission instructions:
• Submission deadline: September 1, 2017
• Author notification: November 30, 2017
• Revised papers due: January 31, 2018
• Final notification: April 1, 2018
• Publication: As per the policy of journal

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