

## *A Survey of Hardware Trojan with Case Studies on FPGAs*

Hongyuan Ding and Miaoqing Huang, *University of Arkansas*

Due to the globalization of the Integrated Circuit (IC) manufacturing industry where outsourced alternatives have gradually replaced in-house processes, hardware Trojans increasingly become a threat to both commercial and military applications and systems. A hardware Trojan is a malicious modification of the circuitry of an IC. A hardware Trojan can either leak confidential information, or disable or destroy the entire chip or its constituent components. In this survey, a hardware Trojan taxonomy is provided for a better understanding of the existing and potential threats. In addition, Trojan detection methodologies are introduced at both the chip level and the architectural level. A recent progress of our research is presented as a case study to demonstrate how hardware Trojan is designed and affects the performance of multiprocessor system-on-chip (MPSoC) on FPGAs.