Many design companies have gone fabless and rely on external fabrication facilities to produce chips due to increasing cost of semiconductor manufacturing. However, not all of these facilities can be considered trustworthy; some may inject hardware Trojans and jeopardize the security of the system. One common objective of hardware Trojans is to establish side channel for data leakage. While extensive literature exists on various defensive measures, almost all of them focus on preventing the establishment of side channels, and can be compromised if attackers gain access to the physical chip and can perform reverse engineering between multiple fabrication runs. This talk discusses RECORD: Temporarily Randomized Encoding of Combinational Logic for Resistance to Data Leakage. RECORD a novel scheme of temporarily randomized encoding for combinational logic that, with the aid of Quilt Packaging, aims to prevent attackers from interpreting the data.

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