

Syed Rafay Hasan

Assistant Professor

Department of Electrical and Computer Engineering
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EDUCATION

Ph.D. Electrical Engineering 2009
Concordia University, Montreal, Canada

WORK EXPERIENCE

Assistant Professor

Department of Electrical and Computer Engineering,
Tennessee Tech University, Cookeville, TN, USA

2011 to date

Research Associate

Department of Electrical Engineering
École Polytechnique de Montréal, Montreal, QC, Canada

2009 to 2011

Research Assistant and Contract Faculty Member

Department of Electrical and Computer Engineering
Concordia University, Montreal, QC, Canada

2001 to 2009

RESEARCH PROJECTS:

- Real time hardware security of integrated circuits using quarantining the suspected modules
- Towards soft error tolerant digital system design through soft error glitch propagation modeling
- Exploring magnetic sensors for identifying anomalies in digital systems

SELECTED HONORS AND AWARDS:

- Post-Doctoral Fellowship award from Scholarship Regroupement Stratégique en Microsystèmes du Québec (RESMIQ, which is a Quebec interuniversity alliance for research in Microsystems) (2011)
- RESMIQ scholarship for Doctoral studies (2008)

Selected Publications (underlined authors are the students under my co-supervision):

1. G. B. Hamad, S. R. Hasan, O. A. Mohamed, Y. Savaria, "Characterizing, modeling, and analyzing soft error propagation in asynchronous and synchronous digital circuits." *Microelectronics Reliability*, Vol. 55, January 2015, pp. 238-250.
2. G. B. Hamad, S. R. Hasan, O. A. Mohamed, and Y. Savaria. "New Insights into the Single Event Transient Propagation through Static and TSPC Logic." *IEEE Transaction on Nuclear Science*, Vol. 61, No. 4, August 2014, pp. 1618 - 1627
3. F. K. Lodhi, S. R. Hasan, O. Hasan, F. Awwad, "Hardware Trojan Detection in Soft Error Tolerant Macro Synchronous Micro Asynchronous (MSMA) Pipeline", in *IEEE 57th Int'l Midwest Symposium on Circuits & Systems*, August 2014, pp. 659-662.
4. C. Thibeault, Y. Hariri, S.R. Hasan, Y. Savaria, Y. Audet, and F.Z. Tazi, "A Library-Based Early Soft Error Rate Estimation Technique for SRAM-based FPGA Design", accepted for publication in *Springer's Journal of Electronics Testing Theory and Applications (JETTA)*, July 2013, pp. 457 – 471.
5. F. K. Lodhi, S. R. Hasan, O. Hasan, F. Awwad, "Low Power Soft Error Tolerant Macro Synchronous and Micro Asynchronous Pipeline", in *International Symposium on VLSI (ISVLSI)*, July 2014, pp. 601 – 606.
6. G. B. Hamad, S. R. Hasan, O. A. Mohamed, and Y. Savaria, "Abstracting Single Event Transient Characteristics Variations Due to Input Patterns and Fan-out" in *International Symposium of Circuits and Systems (ISCAS)*, May 2014, pp. 1468 – 1471.
7. S. F. Mossa, S. R. Hasan, O. S. A. Elkeelany, "Introducing Redundant TSV with Low Inductance for 3-D IC ", in *IEEE NEW Circuits and Systems Conference (NEWCAS' 2014)*, June 2014, pp. 117 – 120.
8. S. R. Hasan, S. F. Mossa, O. S. A. Elkeelany, "Tenacious Hardware Trojans Due to High Temperature in Middle Tiers of 3-D ICs", accepted as an extended Abstract in *Design Automation Conference 2015 (Work in Progress)*