21st International Workshop on Post-Binary ULSI Systems

May 13, 2012
Harbour Towers Hotel & Suites, Victoria, British Columbia, Canada

Final Program

09:30 - 09:40 Opening Remark

Naofumi Homma (General Co-chair, Tohoku University, Japan)

09:40 - 10:05 The Solution of Ultra Large Grid Problems

Bernd Steinbach (Freiberg University of Mining and Technology, Germany) and Christian Posthoff (The University of The West Indies, Trinidad & Tobago)

10:05 - 10:30 Techniques and Prospects for Fault-tolerance in Post-CMOS ULSI

Yangyang Tang (Université de Bretagne Sud, France/Utah State University, USA), Gopalakrishnan Sundararajan, Chris Winstead (Utah State University, USA), Emmanuel Boutillon (Université de Bretagne Sud, France), Christophe Jégoz (Institut Polytechnique Bordeaux, France), and Michel Jézéquel (Institut TELECOM/TELECOM Bretagne, France)

10:30 - 10:55 Integration Issues in Medical Implants: Electrical Recording vs. Image Sensing

Brendan Crowley, Vincent Gaudet (University of Waterloo, Canada), and Vivian Mushahwar (University of Alberta, Canada)

10:55 - 11:10 Break

11:10 - 11:35 Two-stage Approach to the Minimization of Quantum Circuits Based on ESOP Minimization and Addition of a Single Ancilla Qubit

Nouraddin Alhagi (Portland State University, USA), Martin Lukac (Tohoku University, Japan), Linh Tran, and Marek Perkowski (Portland State University, USA)

11:35 - 12:00 A Method for Optimizing Quantum Multiplexers

Tahsin Saffat (Westview High School, USA) and Marek Perkowski (Portland State University, USA)

12:00 - 13:30 Lunch Break

13:30 - 13:55 Synthesis of Reversible and Quantum Permutative Circuits Using Non-blocking Orderings, Tree Search and a Single Ancilla Qubit

Alberto Patino (Portland State University, USA), Martin Lukac (Tohoku University, Japan), and Marek Perkowski (Portland State University, USA)

13:55 - 14:20 Synthesis of Reversible Circuits with PSE Gates

Marek Perkowski, Robert Fiszer (Portland State University, USA), Pawel Kerntopf (Warsaw University of Technology, Poland), and Martin Lukac (Tohoku University, Japan)

14:20 - 14:55 Direct Synthesis of Quantum Automata from Flowcharts

Ankit Gupta, Kevin Wang, Prathyusha Ganti and Marek Perkowski (Portland State University, USA)

14:55 - 15:05 Break

15:05 - 15:30 Proposal for Normalized Quantum Cost through Compliance with Linear Near Neighbor Model

Maher Hawash and Marek Perkowski (Portland State University, USA)

15:30 - 15:55 Comparison of Maslov's Quantum Costs and LNNM Quantum Costs for Four Types of Multi-qubit Toffoli Gates

Alan Cheng, Edison Tsai, Marek Perkowski (Portland State University, USA), Anu Rajendar (University of Southern California, USA), and Yushi Wang (Stanford University, USA)

15:55 - 16:20 Minimization of Quantum Circuits Using Quantum Operator Forms

Martin Lukac, Michitaka Kameyama (Tohoku University, Japan), Marek Perkowski (Portland State University, USA), and Pawel Kerntopf (Warsaw University of Technology, Poland)

16:20 - 16:30 Closing

Shinobu Nagayama (General Co-chair, Hiroshima City University, Japan)