



**University  
of Victoria**

Graduate Studies

Notice of the Final Oral Examination  
for the Degree of Master of Applied Science

of

**SHUBHA MURALIDHAR**

BE (Visveswaraya Technological University, 2011)

**“Systolic Integer Divider for Sunar-Koç ONB Type II Multiplier”**

Department of Electrical and Computer Engineering

Monday, March 27, 2017

11:00 A.M.

Engineering Office Wing

Room 430

Supervisory Committee:

Dr. Fayez Gebali, Department of Electrical and Computer Engineering, University of Victoria  
(Supervisor)

Dr. Mihai Sima, Department of Electrical and Computer Engineering, UVic (Member)

External Examiner:

Dr. Sudhakar Ganti, Department of Computer Science, UVic

Chair of Oral Examination:

Dr. Stan Dosso, School of Earth and Ocean Sciences, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies

## **Abstract**

This thesis focuses on the Binary Integer Modulo-Division Algorithm that is essential for the permutation process in Sunar-Koç ONB Type II Multiplier. The algorithm has been developed based on the systolic array architecture which gives an iterative process for the Modulo-Division. The scheduling and projection timing functions are proposed for the processor array allocation and the matlab code has been implemented to verify the efficiency of the algorithm. The thesis also explores the possibility of word based algorithm for design optimization.