

Personal Information

Burak Baylav
GRC/GLOBALFOUNDRIES Fellow
(US Permanent Resident, Nationality: Turkish)
PhD Microsystems Engineering
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**Objective**

Performing research in the field photolithography and semiconductor manufacturing.

Education

2008 – Present Microsystems Engineering , Doctorate of Philosophy,
RIT, Rochester, USA. *GPA: 4.00/4.00*
Expected graduation date: Fall, 2013

2006 – 2008 Microelectronics Engineering , Master of Science,
RIT, February 2010, Rochester, USA. *GPA: 4.00/4.00*

2002 – 2006 Electrical and Electronics Engineering, Undergraduate May 2006,
Yeditepe University, Istanbul, Turkey. *GPA: 3.96/4.00*

Experience

2011 – Present Rochester Institute of Technology, Rochester, NY

- Research assistant: currently working on evaluating scalability of Interference Lithography (IL) for large field integrated circuit (IC) applications

2010 – 2011 IMEC research facility, Leuven, Belgium

- Mentor Graphics assignee: performed computer simulations using Mentor Graphics Calibre Tools in the fields of double patterning, Extreme UV lithography and assist feature printing predictability

2008 – 2010 Rochester Institute of Technology, Rochester, NY

- Research assistant: worked on exploration of “*Non-Chemically Amplified Photoresist Chemistries for 193 nm Lithography*”, funded by SEMATECH, Albany

2006 – 2008 Rochester Institute of Technology, Rochester, NY

- Teaching assistant: MEMs and IC Technology Laboratories
 - Trained students on CMOS manufacturing tools for RIT’s Advanced CMOS Process, designed masks and printed circuit boards for processed MEMs chips.
- Research assistant: “*Power Distribution Backplane for Prototype Inkjet Head.*”
 - Designed an array of MOSFETs to minimize gate delays and building high voltage transistors. Funded by Eastman Kodak, Rochester, New York.
- Independent research with Dr. Lynn Fuller
 - Designed a new test chip for RIT’s Submicron CMOS Process including analog, digital, and mixed circuit blocks.

2005 – 2006 Yeditepe University, Istanbul, Turkey

Undergraduate teaching assistant for Analog and Digital Electronics courses

Languages	English: Advanced, Turkish: Native
Computer Skills	<ul style="list-style-type: none"> ▪ Mentor Graphics IC Station, Calibre Tools for OPC ▪ Silvaco - Suprem IV ▪ KLA Prolith ▪ MATLAB, Mathcad ▪ MESA Process Tracking System ▪ PSpice, Winspice ▪ Computer Programming C
Ph. D. Dissertation	<i>"Evaluating scalability of Interference Lithography (IL) for large field integrated circuit (IC) applications"</i> . Advisor: Dr. Bruce W. Smith, Rochester, NY. Expected end date: Sept, 2013.
M. Sci. Thesis	<i>"Exploration of Non-Chemically Amplified Resists Based on Dissolution Inhibitors for 193 nm Lithography"</i> . Advisor: Dr. Bruce W. Smith, Rochester, NY, February 2010
B.Sc. Project	<i>"A Novel Switched Capacitor Ultra-low Current Reference"</i> . Advisor: Dr. Ugur Cilingiroglu, Yeditepe University, Istanbul, May 2006
Graduate Level Courses	Microlithography Materials and Processes, Microlithography Systems, Noise and Random Processes, Introduction to Material Science, Fourier Methods for Imaging, Optics and Optical Image Formation, Introduction to Nanotechnology, Introduction to Theoretical Methods Microelectronics I, II, and III, Semiconductor Process and Device Modeling, Quantum and Solid State Physics Fundamentals, Advanced Field Effect Devices, Microelectronics Manufacturing I and II, Microelectromechanical Systems (MEMS)
Honors & Awards	<p>2011- Present SRC/GLOBALFOUNDRIES Fellowship</p> <p>2008 Prof. Renan Turkman Scholarship, RIT</p> <p>2006 – 2011 Graduate Studies Scholarship, RIT (tuition & stipend)</p> <p>2002 – 2006 Graduated from Yeditepe University, Turkey, High Honor, Rank 1st</p> <p>2002 – 2006 Dean's List, Yeditepe University, Istanbul</p> <p>2002 – 2006 Government Scholarship for Undergraduate Studies (tuition and stipend)</p>
Publications	<p>1-Baylav, B.; Estroff, A.; Xie, P.; Smith, B., <i>"Line edge roughness (LER) mitigation studies specific to interference-like lithography," Proc. SPIE. 8683, Optical Microlithography XXVI 86831Y (April 12, 2013); doi: 10.1117/12.2011505</i></p> <p>2- Zuniga, C.; Habib, M.; Word, J.; Lorusso, G. F.; Hendrickx, E.; Baylav, B.; Chalasani R.; Lam, M., <i>"EUV flare and proximity modeling and model-based correction," Proc. SPIE 7969, 79690T (2011); doi:10.1117/12.879488</i></p> <p>3- Baylav, B.; Zhao, M.; Yin, R.; Xie, P.; Scholz, C.; Smith, B.; Smith, T.; Zimmerman, P., <i>"Alternatives to Chemical Amplification for 193 nm Lithography," Proc. SPIE, Vol. 7639, 763915, 2010.</i></p> <p>4- Baylav, B.; Fuller, L.F.; Kudithipudi, D., <i>"A New Test Chip for CMOS Manufacturing Laboratory Courses at RIT," University/Government/Industry Micro/Nano Symposium, 2008.</i></p>
Other Activities	<p>2010 – Present The Honor Society of Phi Kappa Phi member</p> <p>2008 – Present SPIE, OSA Member</p> <p>2005 – Present IEEE Member</p>

-References available upon request-