

Qing Li

CONTACT INFORMATION

E&CE Department
University of Waterloo
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RESEARCH AND PROFESSIONAL INTERESTS

- Analog and digital circuit design with amorphous materials and crystalline silicon
- Circuit-level impact of mechanical stress for flexible electronics
- Modeling of transistors with amorphous materials

EDUCATION

University of Waterloo, Waterloo, Ontario, Canada

Ph.D. Candidate, Electrical Engineering, September 2015 (expected graduation: December 2019)

- Dissertation Topic: “Backplane Circuit Design for Flexible Displays”
- Advisors: Dr. William S. Wong and Dr. Manoj Sachdev

M.ASc., Electrical Engineering, August 2012

B.ASc., Electrical Engineering (Honors with Distinction), July 2010

ACADEMIC EXPERIENCE

University of Waterloo, Waterloo, Ontario, Canada

Graduate Student **September 2015 - present**

Includes current Ph.D. research, graduate level coursework and research projects.

- Transistor modeling and pixel circuit design to tackle bias-induced performance degradation with amorphous technology on flexible substrate
- Analog and digital circuit design with amorphous silicon technology with focus on low power and high performance, including decoders, DACs, differential amplifiers and etc.
- Integration of amorphous silicon TFTs with μ LEDs to form flexible displays.
- Mask layout design for various circuits and systems for flexible wafer fabrication.
- Post-fabrication characterization for various circuits under mechanical stress.

Teaching Assistant for Circuit Courses **January 2011 - April, 2012**

Duties at various times have included delivering tutorial sessions, holding office hours and supervising lab exercises.

JOURNAL PUBLICATIONS

Asad M., **Li, Q.**, Lee, C.-H., Sachdev, M., and Wong, W. S. “Integration of GaN Light-Emitting Diodes with a-Si:H TFTs for Flexible Displays”, *Nanotechnology*, *accepted*.

Li, Q., Lee, C.-H., Asad, M., Wong, W. S., and Sachdev, M. “A 6-TFT Charge-Transfer Self-Compensating Pixel Circuit for Flexible Displays”, *IEEE Journal of the Electron Devices Society* (March 2019), Volume 7, PP 1-9.

Sanjeevi, S., **Li, Q.**, Lee, C.-H., Wong, W. S., Sachdev, M. “Effect of Charge Retention of Non-Volatile Memory TFTs Under Multiple Read Cycles”, *IEEE Journal of the Electron Devices Society* (July 2017), Volume 5, Issue 4, Page 266-270.

CONFERENCE PROCEEDINGS AND PRESENTATIONS

Li, Q., Asad, M., Lee, C.-H., Sachdev, M., and Wong, W. S. “Flexible Inverted InGaN Micro-LEDs Addressed by a-Si:H TFTs Pixel Circuits” 61th Electronic Materials Conference, Ann Arbor, Michigan, USA, to be held in June 2019. (Oral presentation)

Li, Q., Lee, C.-H., Asad, M., Sachdev, M., and Wong, W. S. "Operation and Control of Flexible Display Pixel Circuits Under Mechanical Bending", Proceedings of IEEE International Flexible Electronics Technology Conference (August 2018), Page 229-232.

Li, Q., Asad, M., Lee, C.-H., Sachdev, M., and Wong, W. S. "Integration of InGaN Micro-LEDs with Amorphous-Silicon Thin-Film Transistors for Flexible Displays" 60th Electronic Materials Conference, Santa Barbara, California, USA, June 2018. (Oral presentation)

PROFESSIONAL
EXPERIENCE

Senior Engineer, Full-Custom Layout Team, AMD Inc.
Markham, Ontario, Canada

Oct, 2012 - July, 2015

- Analog/Mixed signal layout for precision circuit considerations, high-speed interfaces, active/passive device matching/placement, signal matching, parasitic reduction, shielding, electro-migration, and etc.
- Layout floor-planning, hierarchical layout assembly, structured/standard cell planning and generation.
- Interpreting DRC and LVS reports to come up with fast and effective solutions.
- Implementing power grid, I/O, routing, shielding, bias consideration, matching techniques and layout designs for AMD products.

PROFESSIONAL
SKILLS

- Mixed-signal circuit design and layout with amorphous silicon TFT technology.
- Device and circuit characterization with various laboratory equipment.
- Anglog/digital circuit design/layout with 180nm, 65nm, 28nm, 14nm, and 7nm technologies.
- Expertise in Cadence Virtuoso Suite and Mentor Graphics Calibre.
- Experienced in Synopsys TCAD Sentaurus and Medici simulators.
- Experienced in C programming and Shell scripting, \LaTeX , and MS Office Suite.
- Operating Systems: Windows and Linux.

AWARDS

- Graduated from the Bachelor's degree with Distinction.
- University of Waterloo International Student Awards 2005 - 2010
- Honorable Mention in the Canadian Mathematical Olympiad (CMO) 2003
- Ranked top 1% in the Chinese National College Entrance Examination (NCEE) 2003

CITIZENSHIP

- Canadian