

# Helgi Skuli Skulason

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## CONTACT

### INFORMATION

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## CITIZENSHIP

Icelandic

## EDUCATION

**McGill University**, Montreal, QC, Canada

Ph.D. Electrical and Computer Engineering, Expected 2012

M.Eng. Electrical and Computer Engineering, October 2009

*Optical Properties of Few and Many Layer Graphene Flakes*

**University of Iceland**, Reykjavik, Iceland

B.Sc. Electrical and Computer Engineering, June 2007

B.Sc. Physics, June 2007

## ACADEMIC

### EXPERIENCE

**McGill University**, Montreal, QC, Canada

*Teaching Assistant*

- Electric Circuits 1 (ECSE 200)  
Weekly tutorials, writing assignments and solutions, grading.  
**Winter 2009, 2010, 2011, Summer 2009, 2010, Fall 2010, 2011.**
- Design Principles and Methods (ECSE 211)  
Weekly lab tutorials and marking demos.  
**Fall 2009.**
- Circuit Analysis (ECSE 210)  
Weekly tutorials, writing assignments and solutions.  
**Fall 2008, Winter 2011.**

*Graduate Student of Prof. Thomas Szkopek*

**Aug 2007 to present**

- Research focused on electrical and optical properties of graphene.

**University of Iceland**, Reykjavik, Iceland

*Teaching Assistant*

- Solid State and Semiconductor Physics  
Weekly tutorials, grading homework.  
**Fall 2005, 2006**
- Computer Hardware Fundamentals  
Weekly laboratory tutorials, grading homework.  
**Winter 2006**

*Undergraduate Summer Researcher*

**Summer 2007**

- Measured thermal radiation of THz antennas made of nanowires. Published in Phys. Rev. B. **78**, 085402 (2008).

*Undergraduate Summer Researcher*

**Summer 2006**

- Designed a device to regulate power applied to nanowires for THz antennas.

*Undergraduate Summer Researcher*

**Summer 2005**

- Designed and fabricated a plasma etcher using a commercial microwave oven for University of Iceland's cleanroom.
- Assisted a graduate student patterning a spin-measurement circuit using Scanning Electron Microscope and Electron Beam Lithography.

*Undergraduate Student*

**Aug 2003 to Jun 2007**

## PUBLICATIONS

1. H.S. Skulason, H. Nguyen, A. Guermoune, V. Sridharan, M. Siaj, C. Caloz, and T. Szkopek. *110 GHz measurement of large-area graphene integrated in low-loss microwave structures*. Submitted to Appl. Phys. Lett.
2. A. Guermoune, T. Chari, F. Popescu, S. Sabri, J. Guillemette, H. Skulason, T. Szkopek and M. Siaj. *Chemical vapor deposition synthesis of graphene on copper with methanol, ethanol, and propanol precursors*. Accepted in Carbon.
3. P. E. Gaskell, H. S. Skulason and T. Szkopek. *High spatial resolution ellipsometer for characterization of epitaxial graphene*. Optics Letters. **35** (20), pp. 3336-3338, 2010.
4. H. S. Skulason, P. E. Gaskell and T. Szkopek. *Optical reflection and transmission properties of exfoliated graphite from a graphene monolayer to several hundred graphene layers*. Nanotechnology **21**, 295709, 2010.
5. P.E. Gaskell, H. S. Skulason, C. Rodenchuk and T. Szkopek. *Counting Graphene Layers on Glass via Optical Reflection Microscopy*. Appl. Phys. Lett. **94**, 143101, 2009.
6. Y. Au, H. S. Skulason, S. Ingvarsson, L. J. Klein and H. F. Hamann. *Thermal radiation spectra from individual subwavelength micro-heaters*. Phys. Rev. B. **78**, 085402, 2008.
7. H. S. Skulason, S. Ingvarsson. *Rafgas í orbylgjuofni (e. Microwave Oven Plasma Etcher)*. Timarit um raunvísindi og staerdfraedi (e. Icelandic Journal of Science and Math). **4** (2), 2006. (In Icelandic)

## PRESENTATIONS

1. H. S. Skulason, P.E. Gaskell, C. Rodenchuk and T. Szkopek. *Counting Graphene Layers on Glass by Optical Reflection Microscopy*. Presented at American Physical Society March Meeting, Pittsburgh, 2009.

## POSTERS

1. H. S. Skulason, H. V. Nguyen, A. Guermoune, M. Siaj, C. Caloz and T. Szkopek. *Integration of graphene into low-loss, high frequency coplanar waveguide circuits*. Presented at Graphene: The Road to Applications, May 11th 2011.
2. H. S. Skulason, P. E. Gaskell and T. Szkopek. *Optical Reflection and Transmission Properties from a Graphene Monolayer to Graphite*. Presented at CLEO/QELS 2010, May 19th 2010.
3. H. S. Skulason, P. E. Gaskell and T. Szkopek. *Optical reflection and transmission properties of exfoliated graphite from graphene to graphite on bulk transparent substrates*. Presented at Graphene Week 2010, April 22nd 2010.

4. H. S. Skulason and S. Ingvarsson. *Rafgasorbylgjuofn (e. Microwave Plasma Etcher)*. Presented at the Natural Science Symposium in Reykjavik, March 3rd and 4th 2006.

#### AWARDS

- Icelandic Chamber of Commerce Award, 2009
- McGill Engineering Doctoral Award, 2009-2012

#### SPECIAL SKILLS

- Computer Skills:
  - Extensive experience using Matlab, LabVIEW, L<sup>A</sup>T<sub>E</sub>X, HTML, PHP, MySQL.
  - Experience using Simulink, Java, C/C++, Visual Basic, Assembly language for PIC and Motorola 68HC11, Gnuplot, Electronics Workbench, Spice, Coventor.
  - MacOS, Windows, Linux.
- Considerable experience using Scanning Electron Microscopy (SEM), Electron Beam Lithography (EBL) and Atomic Force Microscope (AFM).
- Extensive experience with cleanroom protocols and systems, such as photolithography, e-beam deposition, profilometers, plasma etching, wet benches and multiple laboratory and cleanroom equipments.

#### WORKSHOPS ATTENDED

- *T-PULSE Graduate Teaching Workshop*, McGill University, Fall 2009.
- *Workplace Hazardous Materials Information System (WHMIS)*, McGill University, Fall 2007.
- *Radio Amateur*, Icelandic Radio Amateurs, Summer 2005.
- *Project Management*, IEEE Student Branch Iceland, Spring 2004.
- *Leadership training*, IEEE Student Branch Iceland, Fall 2003.

#### MEMBERSHIPS

- IEEE - Institute of Electrical and Electronics Engineers, 2003 to present.
- APS - American Physical Society, 2009 to present.