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## **(Ms.) Guangyu Liu**

Information updated up to: **August 2009**

### **Contact Information**

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PhD Candidate and Research Assistant  
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### **Birth Date and Place & Citizenship**

Feb. 1987, Changsha, Hunan Province, China & Chinese

### **Education**

**July 2008 – present, Lehigh University (Bethlehem, Pennsylvania, USA)**

**Ph.D. Candidate** in Electrical Engineering, Department of Electrical and Computer Engineering

- Cumulative GPA: 3.9/4.0
- Research Assistant, PhD Advisor: Prof. Nelson Tansu (ECE, Lehigh)
- Research Areas: physics of III-Nitride semiconductor optoelectronics materials and devices, physics of III-Nitride semiconductor nanostructures, and III-Nitride semiconductors light emitting diodes and lasers.

**Sep. 2004 – Jul. 2008, Huazhong University of Science and Technology (Wuhan, China)**

**Bachelor of Science (B.S.)** in Electronic Science and Technology

- GPA (Graduate Point Average) : 87.3 / 100
- Thesis: Fabrication of Nano-Magnetic Films and Influence of Film Microstructure to Microwave Properties
- Awarded “Best Graduation Thesis”

### **Professional Experiences**

**July 2008 – present, Lehigh University (Bethlehem, PA, USA)**

**Ph.D. Candidate and Research Assistant**

Department of Electrical and Computer Engineering (ECE)

P. C. Rossin College of Engineering and Applied Science & Center for Optical Technologies (COT)

Ph.D. Advisor: Prof. Nelson Tansu

### **Research Interests**

My research interests are in the field of semiconductor optoelectronics, covering fundamental studies on MOCVD epitaxy and fabrications of III-Nitride devices. My research works include the simulation of III-Nitride semiconductor and experimental study of devices such as solar cell, light emitting diodes (LEDs) and laser for solid state lighting.

### **Awards & Honors Received**

- **Lehigh University Research Assistantship**, July. 2008- present, Lehigh University
- **Best Graduation Thesis** (June, 2008), Huazhong University of Science and Technology
- **Award of Excellent Student of HUST** (2004-2007), Huazhong University of Science and Technology
- **Scholarships for Excellence in Study** (2004-2007), Huazhong University of Science and Technology

## Refereed Journal and Conference Publications

1. **(Invited Conference Paper)** N. Tansu, H. Zhao, R. A. Arif, Y. K. Ee, **G. Liu**, X. H. Li, and G. S. Huang, "Polarization Engineering of InGaN-Based Nanostructures for Low-Threshold Diode Lasers and High-Efficiency Light Emitting Diodes," in *Proc. of the IEEE Photonics Global 2008, Nanophotonics Symposium*, Singapore, Republic of Singapore, December 2008
2. H. Zhao, **G. Liu**, X. Li, G. Huang, S. Tafon Penn, V. Dierolf and N. Tansu, "Growths of Staggered InGaN Quantum Wells Light-Emitting Diodes Emitting at 520-525 nm Employing Graded-Temperature Profile," in *Proc. SPIE Photonic West 2009*, vol. 7231, Art. 72310E, San Jose, CA, January 2009.
3. H. Zhao, M. Jamil, **G. Liu**, G. S. Huang, H. Tong, G. Xu, Y. J. Ding, N. Tansu, "Pulsed Metalorganic Vapor Phase Epitaxy of In-Polar and N-Polar InN Semiconductors on GaN / Sapphire Templates for Terahertz Emitters," in *Proc. of the IEEE/OSA Conference on Lasers and Electro-Optics (CLEO) 2009*, Baltimore, MD, May 2009.
4. H. Zhao, **G. Liu**, X. Li, G. S. Huang, S. Tafon Penn, V. Dierolf, and N. Tansu, "Staggered InGaN Quantum Wells Light-Emitting Diodes at 520-nm Employing Graded Temperature Growths," in *Proc. of the IEEE/OSA Conference on Lasers and Electro-Optics (CLEO) 2009*, Baltimore, MD, May 2009.
5. G. Sun, S. K. Tripathy, Y. J. Ding, **G. Liu**, G. S. Huang, H. Zhao, N. Tansu, and J. B. Khurgin, "Stark Effect Induced by Photogenerated Carriers in Multiple GaN/AlN Asymmetric Coupled Quantum Wells," in *Proc. of the IEEE/OSA Conference on Lasers and Electro-Optics (CLEO) 2009*, Baltimore, MD, May 2009
6. H. Zhao, G. S. Huang, **G. Liu**, X. Li, J. D. Poplawsky, S. Tafon Penn, V. Dierolf, and N. Tansu, "Characteristics of Staggered InGaN Quantum Wells Light-Emitting Diodes Emitting at 480-525 nm," in *Proc. of the 67<sup>th</sup> IEEE Device Research Conference (DRC) 2009*, University Park, PA, June 2009.
7. H. Zhao, **G. Liu**, X. H. Li, G. S. Huang, J. D. Poplawsky, S. Tafon Penn, V. Dierolf, and N. Tansu, "Growths of Staggered InGaN Quantum Wells Light-Emitting Diodes Emitting at 520-525 nm Employing Graded Growth-Temperature Profile," *Appl. Phys. Lett.*, vol. 95(6), Art. 061104, August 2009
8. **(Invited Conference Paper)** N. Tansu, H. Zhao, R. A. Arif, Y. K. Ee, **G. Liu**, X. Li, H. Tong, and G. S. Huang, "Novel Approaches for Efficiency Enhancement in InGaN-Based Light-Emitting Diodes," in *Proc. of the 2<sup>nd</sup> International Conference on White LEDs and Solid State Lighting 2009*, Taipei, Taiwan, December 2009
9. **(Invited Conference Paper)** N. Tansu, H. Zhao, Y. K. Ee, **G. Liu**, X. H. Li, and G. S. Huang, "Novel Device Concept for High-Efficiency InGaN Quantum Wells Light-Emitting Diodes," in *Proc. of the SPIE Photonics West 2010, Gallium Nitride Materials and Devices V*, San Francisco, CA, Jan 2010
10. **(Invited Conference Paper)** N. Tansu, H. Zhao, Y. K. Ee, **G. Liu**, X. H. Li, J. Zhang, S. F. Zhang, and G. S. Huang, "Novel Growth and Device Concepts for High-Efficiency InGaN Quantum Wells Light-Emitting Diodes," in *Proc. of the IEEE/OSA Conference on Lasers and Electro-Optics (CLEO) 2010*, San Jose, CA, May 2010
11. **(Invited Journal Paper)** H. Zhao, **G. Liu**, X. H. Li, R. A. Arif, G. S. Huang, J. D. Poplawsky, S. Tafon Penn, V. Dierolf, and N. Tansu, "Design and Characteristics of Staggered InGaN Quantum Well Light-Emitting Diodes in the Green Spectral Regimes," *IET Optoelectronics* (accepted)

## References

1. **Prof. Nelson Tansu** (PhD Advisor)  
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2. **Prof. Yujie Ding**  
Class of 1961 Professor

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3. Volkmar Dierolf