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MAJOR RESEARCH INTERESTS

- Emerging electronic devices
- Quantum transport
- Spintronic devices
- Nanoelectronics

SELECTED PUBLICATIONS

1. G.-C. Liang, A. Ghosh, M. Paulsson, and S. Datta, "Electrostatic potential profiles of molecular conductors," *Phys. Rev. B* 69 115302 (2004).
2. T. Rakshit, G.-C. Liang, A. W. Ghosh, and S. Datta, "Silicon-based molecular electronics," *Nano Letters*, 4 1803 (2004).
3. G.-C. Liang*, and A. Ghosh, "Identifying contact effects in electronic conduction through buckyballs on Silicon," *Phys. Rev. Lett.* 95, 076403 (2005).
4. G.-C. Liang*, N. Neophytos, D. Nikonov, and M. Lundstrom "Performance projections for ballistic graphene nanoribbon field-effect transistors," *IEEE Transactions on Electron Devices*, Volume 54, Issue 4, April 2007, page(s):677 - 682.
5. G.-C. Liang*, J. Xiang, Neerav Kharche, Gerhard Klimeck, C. Lieber, and M. Lundstrom, "Performance Analysis of a Ge/Si Core/Shell Nanowire Field Effect Transistor," *Nano Letters*, 7 642 (2007).
6. G.-C. Liang*, N. Neophytos, M. Lundstrom, and D. Nikonov, "Ballistic Graphene Nanoribbon MOSFETs: a full quantum real-space simulation study," *Journal of Applied Physics*, 102, 054307, 2007.
7. Gengchiao Liang*, N. Neophytos, Mark Lundstrom and D. Nikonov, "Contact Effects in Graphene Nanoribbon Transistors", *Nano letters*, 8(7); 1819-1824, 2008.
8. Kaitak Lam and Gengchiao Liang*, "An Ab Initio Study on Energy Gap of Bilayer Graphene Nanoribbons with Armchair Edges," *Appl. Phys. Lett.* 92, 223106 (2008).
9. Kai-Tak Lam, Dawei Seah, S. K. Chin, S. Bala Kumar, G. Samudra, Yee-Chia Yeo, and Gengchiao Liang*, "A Simulation Study of Graphene Nanoribbon Tunneling FET with Heterojunction Channel" *IEEE Electron Device Letter*, 31(6), 557, 2010.
10. Minggang Zeng, Yuan Ping Feng, and Gengchiao Liang*, "Graphene-based Spin Caloritronics," *Nano Lett.*, 2011, 11 (3), pp 1369–1373.