

# Sang-Heon Song

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## Education

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| Ph.D<br>Nuclear Engineering          | University of Michigan<br>Thesis Advisor: Prof. Mark J. Kushner | (Sep. 2009 – present)   |
| B.S. and M.S.<br>Nuclear Engineering | Seoul National University<br>Thesis Advisor: Prof. Gon-Ho Kim   | (Mar. 1999 – Aug. 2005) |

## Research and Professional Experience

- Research Assistant, University of Michigan (Sep. 2009 – present)
- Engineer, Samsung Electronics Co., Ltd., LCD Business (Aug. 2005 – Jul. 2009)
- Research Assistant, Seoul National University, Korea (Sep. 2003 – Aug. 2005)

## Awards and Honors

- Tau Beta Pi, Sigma Xi, Alpha Nu Sigma, Phi Kappa Phi
- Fellowship, Michigan Institute for Plasma Science and Engineering (MIPSE), 2011
- Encouragement Award, Busan Metropolitan City Office of Education, Physics Contest, 1998
- Excellence Award, Korea Nuclear Energy Foundation (KNEF), Essay Writing Contest, 1997

## Publications

1. **Sang-Heon Song** and Mark J. Kushner, “Time Resolved Electron Energy Distributions and Plasma Characteristics in a Pulsed Capacitively Coupled Plasma”, IEEE Trans. Plasma Sci. **39**, 2542 (2011).
2. **Sang-Heon Song** and Mark J. Kushner, “Control of Electron Energy Distributions and Plasma Characteristics of Dual Frequency, Pulsed Capacitively Coupled Plasmas Sustained in Ar and Ar/CF<sub>4</sub>/O<sub>2</sub>”, Plasma Sources Sci. Technol. **21**, 055028 (2012).

## Conference Presentations and Posters

1. **Sang-Heon Song**, Mark Strobel, Seth Kirk, and Mark J. Kushner, “Fluorination with Remote Inductively Coupled Plasmas Sustained in Ar/F<sub>2</sub> and Ar/NF<sub>3</sub> Gas Mixtures”, 37<sup>th</sup> IEEE International Conference on Plasma Science, Norfolk, VA, June 2010. (Oral)
2. **Sang-Heon Song**, Mark Strobel, Seth Kirk, and Mark J. Kushner, “Fluorination Property with

- Varying F and F<sub>2</sub> Fluxes in a Remote Plasma Fluorination System”, Gordon Research Conference (Plasma Processing Science), New London, NH, July 2010. (Poster)
3. **Sang-Heon Song** and Mark J. Kushner, “Control of Electron Energy Distributions and Flux Ratios in Pulsed Capacitively Coupled Plasmas”, 57<sup>th</sup> American Vacuum Society International Symposium and Exhibition, Albuquerque, NM, October 2010. (Oral)
  4. **Sang-Heon Song** and Mark J. Kushner, “Control of Electron Energy Distributions and Etch Properties in Pulsed Capacitively Coupled Plasmas”, 38<sup>th</sup> IEEE International Conference on Plasma Science, Chicago, IL, June 2011. (Oral)
  5. **Sang-Heon Song** and Mark J. Kushner, “SiO<sub>2</sub> Etch Rate and Profile Control Using Pulse Power in Capacitively Coupled Plasmas”, 20<sup>th</sup> International Symposium on Plasma Chemistry, Philadelphia, PA, July 2011. (Oral)
  6. **Sang-Heon Song** and Mark J. Kushner, “SiO<sub>2</sub> Etch Property Control Using Pulse Power in Capacitively Coupled Plasmas”, 58<sup>th</sup> American Vacuum Society International Symposium and Exhibition, Nashville, TN, November 2011. (Oral)
  7. **Sang-Heon Song** and Mark J. Kushner, “Electron and Ion Energy Distribution Control Using Pulse Power in Capacitively Coupled Plasma”, Gordon Research Conference (Plasma Processing Science), Smithfield, RI, July 2012. (Poster)
  8. **Sang-Heon Song** and Mark J. Kushner, “High Aspect Ratio SiO<sub>2</sub> Etch Profile and Selectivity Control Using Pulse Power in Capacitively Coupled Plasmas”, TECHCON, Austin, TX, September 2012. (Oral)
  9. **Sang-Heon Song** and Mark J. Kushner, “Control of Electron Energy Distributions Through Interaction of Electron Beams and the Bulk in Capacitively Coupled Plasmas”, Gaseous Electronics Conference, Austin, TX, October 2012. (Oral)

### Issued Patents

- Liquid crystal display apparatus, Min-Wook Park, Young-Goo Song, In-Woo Kim, and **Sang-Heon Song**, Patent Number: US 7,532,278 (May 12, 2009).
- Method of manufacturing a thin film transistor array substrate, Woong-Kwon Kim, Ho-Jun Lee, Hong-Kee Chin, **Sang-Heon Song**, Jung-Suk Bang, Jun-Ho Song, Byeong-Jae Ahn, Bae-Heuk Yim, Patent Number: US 7,902,006 (March 8, 2011).
- Touch screen display apparatus and method of manufacturing the same, Doo-Hwan You, Young-Je Cho, In-Ho Park, **Sang-Heon Song**, Patent Number: US 8,188,982 (May 29, 2012)