

# JONG-HOON LEE

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## OBJECTIVE

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Seeking a summer internship, 2006 and full employment near the first quarter 2007 focusing on the design and optimization of high-frequency front-end modules, passive components integrated circuits and packages.

## SUMMARY

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- More than three years of experience in packaging development, wireless front-end modules development (up to 100 GHz)
- More than two years of experience in numerical modeling and optimization of RF/Microwave devices and integrated circuits
- Proficient in high-frequency RF/Microwave measurement and system and module level testing
- Familiar with RF wireless integrated circuit design in silicon CMOS and packaging material (FR4, LTCC, LCP)

## EDUCATION

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<b>Georgia Institute of Technology, Atlanta, GA</b>	GPA - <b>3.54/4.0</b>
<i>Ph.D. Candidate</i> in Electrical and Computer Engineering	08/03 – 12/06 (expected)
• Topic: Design and modeling of RF packaging and millimeter wave 3-D module	
<i>M.S.</i> in Electrical and Computer Engineering	08/01 – 12/04
• Topic: Development of novel CAD tools for design and optimization of RF/microwave systems	
<b>Pennsylvania State University, University Park, PA</b>	GPA - <b>3.68/4.0</b>
<i>Bachelor of Science</i> in Electrical Engineering with the high honor	01/98 – 05/01

## EXPERIENCE

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<b>Georgia Institute of Technology, Atlanta, GA</b>	01/02 - Present
<i>Graduate Student Researcher</i> , The ATHENA (Adaptive Techniques in Hybrid Electromagnetic Numerical Applications) group led by Prof. Manos M. Tentzeris	
• Developed various advanced 3-D LTCC and LCP system on package (SOP) passive building blocks enabling a complete package solution for wireless front-end modules to be used in millimeter-wave frequency ranges (up to 100 GHz).	
• Investigated various DSP-based predictors and quasistatic solvers for the acceleration of the simulations of highly resonant structures, such as embedded passives.	
• Researched FDTD/SPICE interface and passive/active device modeling with FDTD to simulate complex integrated structures such as RF MEMS or LTCC modules.	
<b>Osram Sylvania, Wellsboro, PA</b>	01/01 – 05/01
<i>Electrical Engineer Co-op</i> , Glass manufacturing plant	
• Committed to provide cost-effective, energy saving systems in lamp manufacturing.	
• Programmed C/C++ to control a manufacturing robot with optimized performance.	
<b>University of Maryland, College Park, MD</b>	05/99 – 08/99
<i>Undergraduate Research Scholar</i> , The intelligent Servosystems Laboratory led by Prof P.S Krishnapras	
• Developed Software of GPS Location Determination by using C++.	
• Maintained an efficient Satellite network through frequency planning and satellite traffic monitoring.	
• Wrote a MATLAB simulation of a malfunction GPS receiver that suffered from poor PN code spreading and QPSK demodulation and draw AutoCAD layouts of the GPS filters.	
<b>Army – School of R.O.T.C, South Korea</b>	07/94 – 02/96
<i>Military information and project control</i>	
• Part of team working on broadband access networks, specifically the last mile to the end user.	
• Gained experience in modern network systems such as Ethernet and TCP/IP.	
• Set up and maintain a local area network for file/printer sharing.	

## TECHNICAL SKILLS

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**CAD Tools:** HFSS, IE3D, ADS, Microstrips, MS Office, MATLAB, AUTOCAD, MATHCAD, PSPICE, Internet Browsers, Photoshop, C/C++, Fortran, Motorola 68K & HC11 Assembly

**Measurement Tools:** Vector Network Analyzer (up to 110 GHz), Spectrum Analyzer, ESG Vector Signal Generator

## Journals

- [1] J.-H.Lee, B.G.Perumana, S.Nikolaou, Y. Park, R. Mukhopadhyay, C.-H. Lee, K. Lim, J.Laskar and M.M.Tentzeris, "Advanced Integrated RF Front-End Solutions for Low-Power and UWB Wireless Systems", accepted for publication at the European Microwave Association Magazine.
- [2] J.-H.Lee, S.Pinel, J.Papapolmerou, J.Laskar, M.M.Tentzeris, "Low-Loss LTCC Cavity Filters Using System-on-Package Technology at 60 GHz," IEEE Transactions on Microwave Theory and Techniques, vol. 53, no.12, pp.3817-3828, Dec. 2005
- [3] J.-H.Lee, L.Marcaccioli, G.DeJean, C.Lugo, S.Pinel, J.Papapolmerou, J.Laskar, R.Sorrentino and M.M.Tentzeris, "Advanced System-on-Package (SOP) Front-End Passive Solutions for RF and Millimeter-Wave Wireless Systems," accepted for the publication at the Proceeding of the European Microwave Association.
- [4] J.-H.Lee, G.Dejean, S.Sarkar, S.Pinel, K.Lim, J.Papapolmerou, J.Laskar, M.M.Tentzeris, "Highly Integrated Millimeter-wave Passive Components Using 3-D LTCC System-on-Package (SOP) Technology," IEEE Transactions on Microwave Theory and Techniques, vol. 53, no. 6, pp. 2220-2229, Nov. 2005.
- [5] J.-H.Lee, N.Bushyager and M.M.Tentzeris, "Comparative Evaluation of DSP Techniques Coupled with EM Time-Domain Simulators for the Efficient Modeling and Design of Highly Resonant RF-MEMS Structures", IEEE Microwave and Wireless Components Letters, vol.14, no.7, pp.361-363, July 2004.
- [6] M.M.Tentzeris, J.Laskar, J.Papapolmerou, S.Pinel, V.Palazzari, R.Li, G.DeJean, N.Papageorgiou, D.Thompson, R.Bairavasubramanian, S.Sarkar and J.-H.Lee, "3D Integrated RF and Millimeter-Wave Functions and Modules Using Liquid Crystal Polymer (LCP) System-on-Package Technology", IEEE Transactions on Advanced Packaging, vol.27 no.2, pp.332-340, May 2004.
- [7] M.M.Tentzeris, J.Laskar, J.Papapolmerou, D.Thompson, S.Pinel, R.L.Li, J.-H.Lee, G.DeJean, S.Sarkar, R.Pratap, R.Bairavasubramanian and N.Papageorgiou, "RF SoP for Multi-band RF and Millimeter-wave Systems", Advanced Packaging Magazine, pp.15-16, April 2004.

## Conferences

- [1] J.-H.Lee, N.Kidera, S.Pinel, J.Papapolmerou, J.Laskar and M.M.Tentzeris, "V-band Integrated Filter and Antenna for LTCC Front-End Modules," accepted for presentation at the 2006 IEEE-IMS Symposium, San Francisco, CA, June 2006.
- [2] J.-H.Lee, D.Thompson, S.Pinel, J.Papapolmerou and M.M.Tentzeris, "3D-SOP Millimeter-Wave Functions for High Data Rate Wireless Systems Using LTCC and LCP Technologies," accepted for presentation at the 2006 PIERS Conference, Cambridge, Massachusetts, March 2006.
- [3] J.-H.Lee, N.Kidera, S.Pinel, J.Papapolmerou, J.Laskar and M.M.Tentzeris, "A Highly Integrated 3-D Millimeter-Wave Filter Using LTCC System-on-Package (SOP) Technology for V-band WLAN Gigabit Wireless Systems," Procs. of the 2005 IEEE APMC conference, Suzhou, China, Dec. 2005.
- [4] J.-H.Lee, N.Bushyager and M.M.Tentzeris, "Comparative Study of DSP Techniques for the Effective Modeling and Design of Highly Resonant RF-MEMS Structures", Procs. of the 2005 IEEE CEM-TD Workshop, pp.88-91, Atlanta, GA, September 2005..
- [5] J.-H.Lee, S.Sarkar, S.Pinel, J.Papapolmerou, J.Laskar and M.M.Tentzeris, "3D-SOP Millimeter-Wave Functions For High Data Rate Wireless Systems Using LTCC and LCP Technologies", Procs. of the 2005 IPACK Conference, San Francisco, CA, July 2005.
- [6] J.-H.Lee, K.Nobutaka, S.Pinel, J.Papapolmerou, J.Laskar and M.M.Tentzeris, "A Highly Integrated 3-D RF Front-End for Millimeter-Wave Wireless Systems Using LTCC System-on-Package Technologies," Procs. of the 2005 URSI Symposium, Washington, DC, July 2005.
- [7] J.-H.Lee, S.Sarkar, S.Pinel, J.Papapolmerou, J.Laskar and M.M.Tentzeris, "3D-SOP Millimeter-Wave Functions For High Data Rate Wireless Systems Using LTCC and LCP Technologies", Procs. of the 2005 IEEE-ECTC Symposium, pp.764-768, Orlando, FL, June 2005.
- [8] R.J.Pratap, J.-H.Lee, S.Pinel, G.S.May, J.Laskar and M.M.Tentzeris, "Millimeter Wave RF Front-End Design Using Neuro-Genetic Algorithm," Procs. of the 2005 IEEE-ECTC Symposium, pp.1802-1806, Orlando, FL, June 2005.
- [9] S.Pinel, S.Sarkar, R.Bairavasubramanian, J.-H.Lee, M.M.Tentzeris, J.Papapolmerou and J.Laskar, "Highly Integrated LTCC and LCP Millimeter-Wave Functions for 3D-SOP High Data Rate Wireless Systems", Proc. of the 2004 IEEE Asian Pacific Microwave Conference, New Delhi, INDIA, December 2004.
- [10] J.-H.Lee, G.DeJean, S.Sarkar, S.Pinel, K.Lim, J.Papapolmerou, M.M.Tentzeris and J.Laskar, "Advanced 3D LTCC System-on-Package (SOP) Architectures for Highly Integrated Millimeter-Wave Wireless Systems", Procs. of the 2004 European Microwave Symposium, pp.II.523-526, Amsterdam, The Netherlands, October 2004.
- [11] D. Thompson, J.-H.Lee, K.Lim, S.Pinel, G.DeJean, R.L.Li, M.Tentzeris and J.Laskar, "Advanced System-on-Package (SOP) Multilayer Architectures for RF/Wireless Systems up to Millimeter-Wave Frequency Bands", 4<sup>th</sup> IASTED Int. Multi-Conf. on Wireless and Optical Comm. July 2004.
- [12] S.Sarkar, V.Palazzari, G.Wang, N.Papageorgiou, D.Thompson, J.-H.Lee, S.Pinel, M.M.Tentzeris, J.Papapolmerou and J.Laskar, "RF and mm-Wave SOP Module Platform using LCP and RF MEMS Technologies", Proc.of the 2004 IEEE-IMS Symposium, pp.567-570, Fort-Worth, TX, June 2004.
- [13] V.Palazzari, D.Thompson, N.Papageorgiou, S.Pinel, J.-H.Lee, S.Sarkar, R.Pratap, G.DeJean, R.Bairavasubramanian, R.L.Li, M.M.Tentzeris, J.Laskar, J.Papapolmerou and L.Roselli, "Multi-band RF and mm-Wave Design Solutions for Integrated RF Functions in Liquid Crystal Polymer System-On-Package Technology", Proc. of the 2004 IEEE-ECTC Symposium, pp.1658-1663, Las Vegas, NV, June 2004.
- [14] N.Bushyager, D.Staiculescu, L.Martin, J.-H.Lee, N.Vasiloglou and M.M.Tentzeris, "Design and Optimization of 3D RF Modules, Microsystems and Packages Using Electromagnetic and Statistical Tools", Proc. of the 2004 IEEE-ECTC Symposium, pp.1412-1415, Las Vegas, NV, June 2004.
- [15] J.-H.Lee, K.Lim, S.Pinel, G.DeJean, R.L.Li, C.-H.Lee, M.F.Davis, M.Tentzeris and J.Laskar, "Advanced System-on-Package (SOP) Multilayer Architectures for RF/Wireless Systems up to Millimeter-Wave Frequency Bands", Proc. of the 2003 IEEE Asian Pacific Microwave Conference, Seoul, KOREA, November 2003.
- [16] J.-H.Lee, E.T.K.Dalton, N.Bushyager, M.Kunze, W.Heinrich and M.M.Tentzeris, "Coupling of Electromagnetic Time-Domain Simulators with DSP/Subgridding Techniques for the Adaptive Modeling of Wireless Packaging Structures", Proc. of the 2003 ACES Conference, pp., Monterey, CA, March 2003.

## HONORS

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- Member, Tau Beta Pi National Honor Society
- Member, Eta Kappa Nu Electrical/Computer Engineering Honor Society
- Member, The National Society of Collegiate Scholars Honor Society
- Merit Scholarship
- Dean's list: Consecutive 8 semesters in Pennsylvania State University, University Park

## COLLEGIATE ACTIVITIES

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|---|---------------------------------|
| • Member, IEEE  | 08/98 - Present                 |
| • State College Korean Church<br>President in the undergraduate fellowship  | 05/99 – 05/00                   |
| • New Life Baptist Church<br>President in the young adult fellowship  | 05/02 – 03/03,<br>03/04 – 11/04 |
| • Students for Christ (SFC) at Georgia Institute of Technology<br>Bible Study Leader in the undergraduate/graduate fellowship | 01/04 - Present                 |

**References available upon request**