

PitFee Jao

512 SW 34th St. Apt. #3, Gainesville, FL 32607

Web: <http://www.linkedin.com/in/pitfeejao>

Email: pitfeejao@gmail.com

Phone: 267-888-8526

Summary: Electrical Engineer with a research experience ranging from developing biodegradable tissue scaffolds for nerve regeneration to nano-manufacturing next generation carbon electrodes for energy storage, from design of MOSFET based active Gm-C filters to cleanroom fabrication and testing of Si based solar cells, from wafer level design and analysis of folded spring architecture accelerometers to micromachining RF-metamaterial based devices.

Specialities:

Nanotechnology, MEMS, Polymer Engineering, Energy, Microfluidics, Device Design and Simulation

Education:

Ph.D.	University of Florida, Gainesville, FL, USA, Electrical and Computer Engineering (GPA: 3.66/4.0)	2012 (<i>expected</i>)
M.S.	University at Buffalo, the State University of New York, Buffalo, NY, Electrical Engineering (GPA: 3.74/4.0)	2009
B.E.	Andhra University, 2006 Electrical and Electronics Engineering (GPA: 3.27/4.0, top 10% of graduating class)	2006

Experience:

- **Graduate Research Assistant**, Interdisciplinary Microsystems Group, University of Florida, Florida, August 2010 – Present
- **Graduate Research Assistant**, Multidisciplinary Nano and Microsystems Lab, University at Buffalo, New York, August 2009 - August 2010
- **Graduate Teaching Assistant**, Dept. of Electrical Engineering, University at Buffalo, New York, January 2009 - May 2010
- **Graduate Student Assistant**, Dept. of Electrical Engineering, University at Buffalo, New York, August 2007- May 2008
- **Student Assistant**, Teaching & Learning Centre, University at Buffalo, New York, May 2007 - December 2008

Publications:

1. **P.F. Jao**, S.P. Fang, D.E. Senior, K.T. Kim and Y.K. Yoon, " Nanomanufacturing of large area Carbon nanofibers using tube nozzle electrospinning (TNE), lithography and carbonization processes, " *62nd ECTC Conference 2012, accepted*, San Diego, CA, USA,.
2. **P. F. Jao**, G. J. Kim, W. Sun and Y.K. Yoon, "Three Dimensional Nanofiber Tissue Scaffold using Directional Electrospinning and Stamp Thru Molding, " *2011 NSF Research Day*, Gainesville, FL, USA.
3. **P. F. Jao**, M. Machado, X. Cheng, D. E. Senior, G. J. Kim, D. Ding, W. Sun and Y.K. Yoon, "Fabrication of Nanoporous membrane and its non-lithographic patterning using Electrospinning and Stamp-thru-Mold (ESTM), " *24th IEEE MEMS Conference 2011*, Cancun, MEXICO.
4. **P. F. Jao**, W. Sun, Y. K. Yoon, and G. J. Kim, "Spatially controlled electrospun solid gradient nanofibers for guided spiral ganglion neuron culture," *2010 EMBS BMES Annual Meeting*, Austin, TX, USA.
5. J.K. Kim, **P.F. Jao**, C. Kim, and Y.K. Yoon, "Dispense and self planarization process on a modified surface for multiple height 3-d microfabrication, " *16th IEEE Transducers Conference 2011*, Beijing, CHINA.
6. D. E. Senior, X. Cheng, **P.F. Jao**, C. Kim , J.K. Kim, and Y.K. Yoon, "Wireless passive sensing application using a cavity loaded evanescent wave half mode substrate integrated waveguide resonator, " *16th IEEE Transducers Conference 2011*, Beijing, CHINA.
7. X.Y. Cheng, **P. F. Jao**, D.E. Senior and Y.K. Yoon, "Corrugated Substrate Integrated Waveguide with Dual Band non-Bragg Resonance," *IEEE (MTT-S) IMS Symposium 2011*, Baltimore, Maryland, USA.

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8. D. E. Senior, X. Cheng, **P.F. Jao**, C. Kim, and Y.K. Yoon, "Compact 3D Integrable SU8 Embedded Microwave Bandpass Filters using Complementary Split Ring Resonator Loaded Half Mode Substrate Integrated Waveguide," *61st ECTC conference 2011*, Lake Buena Vista, Florida, USA.
9. J.K. Kim, **P.F. Jao**, C. Kim, and Y.K. Yoon, "Reconfigurable Split Ring Resonator Array Loaded Waveguide for in-situ Tuning," *2011 IEEE AP-S/URSI Symposium*, Spokane, Washington, USA.
10. X. Cheng, D. E. Senior, **P. Jao**, J. J. Whalen and Y.K. Yoon, "Non-Bragg Resonance in Substrate Integrated Waveguide," *2010 IEEE APS/URSI International Symposium*, Toronto, ON, CANADA.
11. Y. Guo, **P. Jao**, G. Wang, Y. Du, S. Bhattacharya, and D. C. Hopkins, Ph.D., "Investigation of SiC Power Module Requirements for Smart Grid Applications," *42nd International Symposium on Microelectronics (IMAPS) 2009*, San Diego, CA, USA.
12. Y. Guo, **P. Jao**, and D. C. Hopkins, Ph.D., "Assessment of Critical Issues for High Temperature, High Voltage Power Modules," *2009 FREEDM Annual Conference*, Raleigh, NC.
13. J. K. Kim, **P. Jao**, S.Y. Cha, and Y. K. Yoon, "Micro/Nano fabrication and Multidisciplinary Research," *2007 1st INS Workshop*, Buffalo, NY, USA.
14. **P.F. Jao** and S. Bhandaru "Advancements in Supercomputers", *Electrica '04*, National Level Student Symposium, Visakhapatnam, INDIA.

Patent:

- **Pit Fee Jao**, Gloria Kim and Yong Kyu Yoon, "Fabrication of Nanoporous Membrane and its Non-lithographic Patterning Using Electrospinning and Stamp-thru-mold (ESTM)," Filed for U.S. Provisional Patent Application (61/485,716), May 13, 2011

Professional Skills:

Design CAD & Simulation Tools: COMSOL Multiphysics, ANSYS, MATLAB, Ansoft Designer, Ansys HFSS, PSPICE, LTSPICE, Magic VLSI Layout, Microwave Office, Altium Designer AutoCAD, Pro/Engineer, Adobe Illustrator, Adobe Photoshop.

Programming and Data Acquisition: Microcontroller programming for Arduino UNO, NI Labview 11, C, Java, Adobe Dreamweaver, Adobe Flash, HTML, Javascript, ASP, PHP, SQL, Microsoft Office.

Fabrication: Karl Suss Mask Aligner, Reactive Ion Etch, Electroplating, Thermal Metal Evaporator, DC Sputter, Electron Beam Evaporator, Trion Plasma Enhanced Chemical Vapor Deposition (PECVD), Vacuum oven, Lindberg Flow Furnace, RDO High Frequency Induction Heating System, Syringe Pump, 30kV Spellman High Voltage Supply, Spin Coater, Pintek High Voltage Measurement, LPKF PCB prototyping milling machine.

Test and Device Characterization: Probe Station, First and Second Reduction Camera System, Alpha Step Profiler, Gaertner Ellipsometer, Scanning Electron Microscope (SEM), Energy Dispersive X-ray Spectroscopy (EDS), Rigaku X-ray diffraction (XRD), Multi-dye color Fluorescence Microscope, HP8510C vector network analyzer, Agilent E4411B Spectrum analyzer.

Awards and Honors:

- University of Florida **Achievement Award** for New Engineering Graduate Students - Fall 2010
- **Student Travel Grant Award**
 - IEEE International Conference on Micro Electrical Mechanical Systems (MEMS 2011),
 - Biomedical Engineering Society (BMES 2010) Annual Meeting
- **Best Paper of Session**, IMAPS 2009, 42nd Intl. Symp. on Micr., San Diego, CA on Nov 1, 2009.
- **UB EE Graduate Ambassador**, 2008, 2009, 2010
- **Moog Fellowship Award**- Fall 2008
- **1st Prize, De - Papel II**, *Electrica '04*, National Level Student Symposium, Visakhapatnam, India.

Activities and Societies:

- Mentor, Graduate and Undergraduate students in research group.
- Reviewer, Journal of Micromechanics and Microengineering (JMM).
- Conference Volunteer Service for IEEE MEMS 2011 and BMES 2010.
- Volunteer Demonstrator for Open house 2008 and Science Exploration Day 2008, UB.
- Member, IEEE and Eta Kappa Nu (HKN) honor society.
- Chairman and Past President, UB EE Graduate Student Association.