

Na Bio_Sketch
Woonki Na, Ph.D,
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Education

Ph. D in Electrical Engineering, May 2008, University of Texas at Arlington, Arlington, TX
Thesis: *Dynamic Modeling, Control and Optimization of PEM fuel cell system for automotive and power system applications.*

Advisor: Dr. Bei Gou

MS, BS in Electrical Engineering, February 1997 and 1995 ,Kwangwoon University , Seoul, South Korea

Academic Experience

Associate Professor(Tenured), **Dept. of Electrical and Computer Eng.**
California State University, Fresno CA Aug. 2013- Present

- Teaching and Research Advanced Circuits, DSP, Power Electronics, Nonlinear Control, Energy Conversion and Renewable Energy

Assistant Professor(Tenured track), **Dept. of Electrical and Computer Eng.**
Bradley University, Peoria, IL Aug. 2010- Jul. 2013

- Teaching Circuit theory, Electronics, Power Electronics, and Electric Motor Drives
- Research about Power Electronics, Control, Power and Energy Systems

Professional Experience

Postdoctoral Research Associate, **Fuel Cell and Hybrid Electric Vehicles**
Laboratory
University of Michigan, Dearborn, MI Dec. 2009 – Aug. 2010

- Development of DSP based energy management system (DC to DC converter) for plug-in hybrid electric vehicle(PHEV) systems

Senior Power Electronics and Controls Engineer, **Technology & Solution Division**
Caterpillar, Peoria, IL Aug. 2008- Nov. 2009

- Analysis of control strategies of HEV(Hybrid Electric Vehicle)
- Development and data validation of Hybrid Electric Drives systems
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Associate Editor, Journal of Power electronics by Springer 2019 ~ Current

Publications

1. H.Zhang, W. Tang, ,**Woonki Na**, P. Lee , J. Kim “Implementation of generative adversarial network-CLS combined with bidirectional long short-term memory for lithium-ion battery state prediction”, Journal of Energy Storage, 2020, vol31, 101489

2. **Woonki Na**, Pengyuan Chen and Jonghoon Kim, “An Improvement of a Fuzzy Logic Controlled Maximum Power Point Tracking Algorithm for Photovoltaic Applications,” published in *Applied Science: Energy Saving* in 2017, 7(4), 326.
3. **Woonki Na**, Pengyuan Chen and Jonghoon Kim, “Elimination of Chattering by Control Strategy based on the Multi-Phase Sliding Model Control for Efficient Power Conversion in a DC-DC Circuit,” published in *Energies*, Sept. 2017, 10(9), 1389.
4. **Woonki Na**, T.Park, T. Kim, and S. Kwak, “Light Fuel Cell Hybrid Electric Vehicles Based on Predictive Controllers,” *IEEE Transactions on Vehicular Technology*, Volume 60, Issue 1, 2011, Pages: 87-97
5. Bei Gou, **Woonki Na**, and Bill Diong “Fuel Cells: Modeling, Control and Application.” A book in the **Power Electronics Series**, Second Edition was published in August 23, 2016 by CRC Press .

Synergistic Activities

Presented papers in IEEE Conferences; supervised graduate and undergraduate students in various projects; being awarded research grant as PI and Co-PI in amount of around \$500, 000.

Honors and Awards

- Caterpillar fellowship, Bradley University, 2011-2012.
- Energy System Research Center Scholarship from the University of Texas at Arlington, 2004-2005, & 2006-2007.
- Korean Honor Scholarship from the Korean Ambassador, Seok Hyun Hong in Washington D.C, 2005.

Professional Developments

- Visiting Faculty, 10-week during the summer DOE program, *National Renewable Energy Laboratory*, Golden, Colorado, 2016 and 2017
- NSF award : Co-PI (Power converter design for Energy Harvesting), NeTS: Small: RUI: Bulldog Mote- Low Power Sensor Node and design Methodologies for Wireless Sensor Networks , https://www.nsf.gov/awardsearch/showAward?AWD_ID=1816197 \$424,612.00 (Aug. 2018~ Aug. 2021)