Dr. Taesic Kim

Education
B.S., Electronics Engineering, Changwon National University, Changwon, South Korea, 2008
M.S., Electrical Engineering, University of Nebraska-Lincoln, Lincoln, NE, 2012
Ph.D., Computer Engineering, University of Nebraska-Lincoln, Lincoln, NE, 2015

Teaching Interests
Undergraduate courses: Electronics I & II, Communication Engineering, Random Signals
Graduate Courses: Renewable Energy and Distributed Generations, Electric Power Distributed Systems, Advanced Electric Machines, Wireless Communication, Digital Signal Processing

Research Interests

- **Energy Internet of Things (IoT)**
  IoT Embedded System | IoT Communication | IoT-Cloud Platform | Cyber-Physical Security
- **Intelligence Algorithms**
  Multiagent System | Machine Learning | Computational Intelligence | Blockchain
- **Condition Monitoring, Fault Diagnosis and Prognosis**
  Digital Signal Processing | Modeling | Estimation | Data Mining
- **Power Electronics**
  Advanced Control | Hardware Security | Energy Harvester for IoT
- **Applications (Cyber-Physical Power and Energy Systems)**
  Battery Energy Storage Systems | Microgrid | Smart Grid | Electric Vehicles | Renewable Energy Systems | Energy Material Informatics

Honors and Awards

- Myron Zucker Student-Faculty Grant Award of IEEE Industry Application Society, 2018
- University Research Award at TAMUK, 2018
- Microsoft Azure Research Award, 2017
- The First Place Award (Best Paper Award) in the 2017 IEEE International Conference on Electro Information Technology, 2017
- 2017 TAMUK Summer Support Award
- TAMUK Council for Undergraduate Research Awards, 2016-17, 2015-
- The First Prize Award in the 2013 IEEE Industry Applications Society Graduate Student Thesis Contest, 2013

Patents (if, any)

1. T. Wada, T. Takegami, Y. Wang, T. Kim and Z. Sahinoglu, “Rechargeable battery parameter estimation apparatus and rechargeable battery parameter estimation method,” U.S. patent 20160349329, 2016.
2. W. Qiao, T. Kim, and L. Qu, “Rechargeable multicell battery,” U.S. patent 20130320772, 2013.

Selected Publications (up to ten - books, book chapters, journal articles)

1. **T. Kim***, A. Adhikaree, R. Pandey, D. Kang, M. Kim, C-Y Oh, and J. Baek, "An on-board model-based condition monitoring for lithium-ion batteries," *IEEE Trans. Industry Applications*, 2019, in press.
2. **T. Kim***, A. Adhikaree, J. S. Vagdoda, D. Makwana, and Y. Lee, "Cloud-based battery condition monitoring and fault diagnosis platform for large-scale lithium-ion battery energy storage systems,"*Energies*, vol. 11, no.1, pp. 1-15, Jan. 2018.
3. **T. Kim**, Y. Wang*, Z. Sahinoglu, T. Wada, S. Hara, and W. Qiao, "Rayleigh quotient-based recursive total least square online maximum capacity estimation for lithium-ion batteries," *IEEE Trans. Energy Conversion*, 2015, vol. 30, no. 3, pp. 842-851, May 2015.
4. **T. Kim**, Y. Wang*, Z. Sahinoglu, T. Wada, S. Hara, and W. Qiao, "Model-based condition monitoring for lithium-ion batteries," *Journal of Power Sources*, Apr. 2015, vol. 295, pp.16-27, Nov. 2015.
5. **T. Kim**, W. Qiao* and L. Qu, "Power electronics-enabled self-X multicell batteries: a design towardsmart batteries," *IEEE Trans. Power Electronics*, vol. 27, no. 11, pp. 4723-4733, Nov. 2012.
6. **T. Kim** and W. Qiao*, "A hybrid battery model capable of capturing dynamic circuit characteristics and nonlinear capacity effects," *IEEE Trans. Energy Conversion*, vol. 26, no. 4, pp. 1172-1180, Dec. 2011.
7. J. Zeng*, **T. Kim**, and V. Winstead, "A soft-switched four-port DC-DC converter for renewable energy integration application," in *Proc. 2018 IEEE Energy Conversion Congress and Exposition*, Portland, OR,Sept. 23-27, 2018, pp. 5851-5856.
8. J. S. Vagdoda, D. Makwana, A. Adhikaree, T. Faika, and **T. Kim***, "A cloud-based multiagent system platform for residential microgrids towards smart grid community," in *Proc. IEEE Power and Energy Society General Meeting*, Long Beach, CA, Aug. 5-9, 2018, pp. 1-5.
9. S. Kumbhar, T. Faika, D. Makwana, **T. Kim***, and Y. Lee, "Cybersecurity for battery management systemsin cyber-physical environments," in *Proc*. 2*018 IEEE Transportation Electrification Conference and Expo*,Long Beach, CA, June 13-15, 2018, pp. 934-938.
10. **T. Kim***, R. Huerta, J. Zeng, C. S. Leung, and S. Park, "Fast recursive least square-based estimator for active and reactive power control of single-phase power electronic converts," in *Proc. 2017 IEEEInternational Conference on Electro Information Technology*, Lincoln, NE, May 14-17, 2017, pp. 121-124. **(Best Paper Award-First Place)**