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Inhwi Hwang

ECE Ph.D. Candidate in University of Michigan

Education

- Ph.D. Candidate — Fall 23' -
  Electrical and Computer Engineering, University of Michigan
- M.S. — Feb 2022
  Electrical and Computer Engineering, Seoul National University
- B.E. — Aug 2020
  Electrical and Computer Engineering, Seoul National University

Research and Technical Experience

- Industrial project — Jan. 2022 — Feb. 2023
  3.2 kW PFC design in Intel data centers, LG Innotek Co., Ltd. — *Seoul, Korea*
- Academic project — Sep. 2021 — Nov. 2021
  Extending torque operation limit in signal-injection sensorless control for IPMSM — *Seoul, Korea*
- Industrial project — Jan. 2021 — Aug. 2021
  Motor control for vibration reduction in scotch-yoke system, LG Electronics Inc. — *Seoul, Korea*
- Academic project — Mar. 2020 — Jun. 2020
  3-bit optical coding for improving the power of optical computing — *Seoul, Korea*

Publications

Journals

'Enhanced Dynamic Operation of Heavily Saturated IPMSM in Signal-Injection Sensorless Control with Ancillary Reference Frame' (Status: published)
*Authors: **Inhwi Hwang**, Yong-Cheol Kwon, Seung-Ki Sul*
IEEE Transactions on Power Electronics (TPEL), 2022

'Analysis of Position Estimation Error in Signal-Injection Sensorless Control Induced by Inverter dv/dt Based Current Measurement Noise' (Status: published)
*Authors: Yoon-Ro Lee, Jiwon Yoo, **Inhwi Hwang**, Seung-Ki Sul*
IEEE Transactions on Power Electronics (TPEL), 2022

Conference

'Enhanced Dynamic Operation of Heavily Saturated IPMSM in Signal-Injection Sensorless Control' (Status: published)
*Authors: **Inhwi Hwang**, Yong-Cheol Kwon, Seung-Ki Sul*
IEEE Energy Conversion Congression and Expo (ECCE), 2022

'Gain Scheduling of Full-Order Flux Observer for Sensorless PMSM Drives Considering Magnetic Spatial Harmonics' (Status: published)
*Authors: Jiwon Yoo, **Inhwi Hwang**, Yoon-Ro Lee, Seung-Ki Sul*
IEEE Energy Conversion Congression and Expo (ECCE), 2021

Honors

Research Assistant Funding — Fall 2023
Commencement Valedictorian (Graduate Class Representative) in Graduation Ceremony — Fall 2020
(Click here for speech video link)
Academic Scholarship, Kim Jeong-Sik Special Scholarship — Spring 2020

Skills and Interests

Tools and Languages	SiC power circuit design, DSP, Fusion360, Matlab, Simulink, Plecs, C, Latex, Python(Pytorch), R
Interests	Wireless power transfer, Power semiconductor packaging, Grid-tied converters