


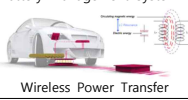
	<div>■ <b>Contact information</b></div> <div>Professor : gwmoon@kaist.ac.kr    TEL : 042-350-3475</div> <div>Lab. : yeonghun@kaist.ac.kr    TEL : 042-350-8075</div> <div>Website : http://kpel.kaist.ac.kr</div>
<div>■ <b>Current state of the Lab. (in 2024 Fall Semester)</b></div> <div>Postdoctoral Fellows : 2      PhD Students: 3      Master's Student: 2</div>	
<div>■ <b>Research Areas</b></div> <div><div><div><div><b><u>Electrical Vehicle Charger</u></b></div><div>Electrical vehicles essentially have rechargeable batteries that can be fully charged by connecting the vehicle plug to and external electric power source. Therefore, battery charger is one of the key components of EV.</div></div><div><div><b><u>Power Supply for Data Center</u></b></div><div>Data center is increasing rapidly due to the extension of internet. Accordingly, power consumptions of data center is rising as a global issue. Therefore, this research proposes new technologies to obtain high efficiency and high power density of data center.</div></div><div><div><b><u>Battery Management System with Cell Balancing Circuit</u></b></div><div>As the number of charging and discharging periods increase, the unbalanced cells are faced to the limit with the use of the battery power. Therefore, the cell balancing circuit is required to prevent the unbalance between the cell.</div></div><div><div><b><u>Wireless Power Transfer System</u></b></div><div>Wireless Power Charging System for large-capacity battery in electrical vehicles, and dual-band wireless power architecture for multiple load conditions.</div></div></div><div><div>Electrical Vehicle Charger</div><div>High Efficiency Data center</div><div>Battery Management System</div><div>Wireless Power Transfer</div></div></div>	
<div>■ <b>Recommended courses &amp; Career after graduation</b></div> <div><div><u>Recommended courses</u> : Circuit theory, Electronics circuits, Control system, Power electronics systems, Electro-magnetics</div><div><u>Career after graduation</u>: Professors, Research institute (ADD, KARI, KERI, KRRI, KISTI, etc.), Industry (Samsung Electronics, Hyundai Motors, Intel, Apple, etc.)</div></div>	<div>■ <b>Introduction to other activities besides research</b></div> <div><div><u>Exercise Activity</u> : Soccer, Futsal, Basket ball, Foot volleyball,</div><div><u>Workshop</u> : Summer and Winter workshop.</div><div><u>Etc.</u> : Year-end party and Home coming day.</div></div>
<div>■ <b>Introduction to the Lab.</b></div> <div>KPEL is leading world-class power electronics researches. Main research area contains power supply for data center, charging system for electrical vehicle, wireless power transfer system, battery management systems. KPEL is contributing domestic company's sales with technical transfer by linking with industry. KPEL published 209 SCI journals, 304 international conferences, and 206 patents.</div>	
<div>■ <b>Recent research achievements ('23~'25)</b></div> <div><div><b>International Journal (Total 15)</b></div><div>2025 : 5. (IEEE Trans. Power Electronics [I.F : 6.6] / IEEE Trans. Industrial Electronics [I.F : 7.5])</div><div>2024 : 10. (IEEE Trans. Power Electronics [I.F : 6.6] / IEEE Trans. Industrial Electronics [I.F : 9.6])</div><div>2023 : 3. (IEEE Trans. Power Electronics [I.F : 6.3] / IEEE Trans. Industrial Electronics [I.F : 7.5])</div></div> <div><div><b>International Conference (Total 13)</b></div><div>2023-2025 : 11 (ECCE Asia – Japan / ECCE Asia – Korea / ECCE Asia – China)</div></div> <div><div><b>Award</b></div><div>[1] "Highlighted Paper", IEEE Transactions on Power Electronics</div><div>[2] Human Tech Paper Award (Samsung Electronics)</div><div>[3] Outstanding Presentation Award, IEEE APEC</div><div>[4] Korea Power Electronics Conference : 4 Best Paper</div></div>	