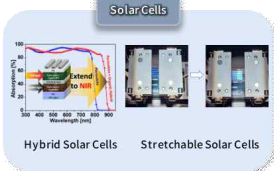
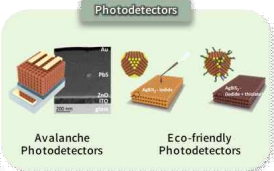
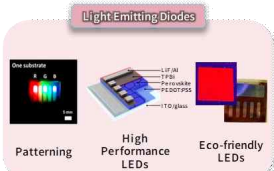
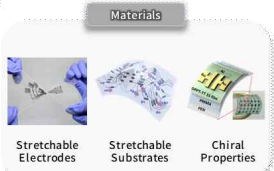
 Advanced Devices for Energy Conversion Lab (ADEC lab)	■ Contact information Professor: jungyong.lee@kaist.ac.kr TEL: 010-9341-1834 Lab: lljhyu@kaist.ac.kr TEL: 010-8746-8432 Website: https://adec.kaist.ac.kr
■ Current state of the Lab. (in 2025 Spring Semester) Research Professor: 1 Postdoctoral Fellow: 1 PhD Students: 6 Master's Students: 8	
■ Research Areas <div style="display: flex; flex-wrap: wrap; justify-content: space-around;"> <div style="width: 30%;">  <p>Solar Cells Hybrid Solar Cells Stretchable Solar Cells</p> </div> <div style="width: 30%;">  <p>Photodetectors Avalanche Photodetectors Eco-friendly Photodetectors</p> </div> <div style="width: 30%;">  <p>Light Emitting Diodes Patterning High Performance LEDs Eco-friendly LEDs</p> </div> <div style="width: 30%;">  <p>Materials Stretchable Electrodes Stretchable Substrates Chiral Properties</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="width: 45%;"> <p>Device Study</p> <ul style="list-style-type: none"> • Next-generation Solar Cells/Photodetectors • LEDs/Displays • Next-generation Stretchable Electronic Devices • Next-generation Semiconductor Devices </div> <div style="width: 45%;"> <p>Material Study</p> <ul style="list-style-type: none"> • High-quality and Eco-friendly Perovskites • Infrared and Eco-friendly Quantum dots • Stretchable and Hybrid Organic Materials • Chiral Engineered Materials </div> </div> <ol style="list-style-type: none"> 1. Solar Cells – Perovskite, Hybrid, and Stretchable Organic Solar Cells 2. Light Emitting Diodes – Patterning, Deep-blue, and Eco-friendly LEDs 3. Photo Detectors – Avalanche and Eco-friendly Quantum Dot Photodetectors 4. Materials – Stretchable electrode, substrate, and Chiral properties 	
■ Recommended courses & Career after graduation <p>Recommended courses : Introduction to Physical Electronics (EE211), Photovoltaic Power Generation (EE567), Introduction to Organic Electronics (EE568), Solid State Physics (EE661), Advanced Electromagnetic Theory I (PH507)</p> <p>Career after graduation : Professors, postdoctoral researcher, researchers of national research labs, company (SAMSUNG, SK, LG electronics)</p>	■ Introduction to other activities besides research <p>Exercise activity : Football, Basketball, Running, Weight training</p> <p>Group teamwork : Birthday party (every month), Happy Hour (every 6 weeks), dining together (more than twice a year)</p>
■ Introduction to the Lab. Advanced devices for energy conversion (ADEC) lab has been studying on the emerging optoelectronic devices since 2010. We will support your researches whatever your interests are and help you to set up an experimental environments. Also, we are happy to discuss research issues and other problems. If possible, we can create synergistic effect on our results as we collaborate together.	
■ Recent research achievements ('22~'24) <p>[Highlight research]</p> <p>* B. Kim et al., "Ultra-high-gain colloidal quantum dot infrared avalanche photodetectors" <i>Nature Nanotechnology</i> (2024)</p> <p>* S. Lee et al., "Advancing High-Efficiency, Stretchable Organic Solar Cells: Novel Liquid Metal Electrode Architecture", <i>Energy & Environmental Science</i> (2024)</p> <p>* M.-H. Lee et al., "Suppressing Hole Accumulation Through sub-nanometer Dipole Interfaces in Hybrid Perovskite/Organic Solar Cells for Boosting Near-Infrared Photon Harvesting", <i>Advanced Materials</i> (2024)</p> <p>* S. Lee et al., "Brightening deep-blue perovskite light-emitting diodes: A path to Rec. 2020", <i>Science Advances</i> (2024)</p> <p>Journal articles (Total: 31) : 2022(7), 2023(9), 2024(15)</p>	