

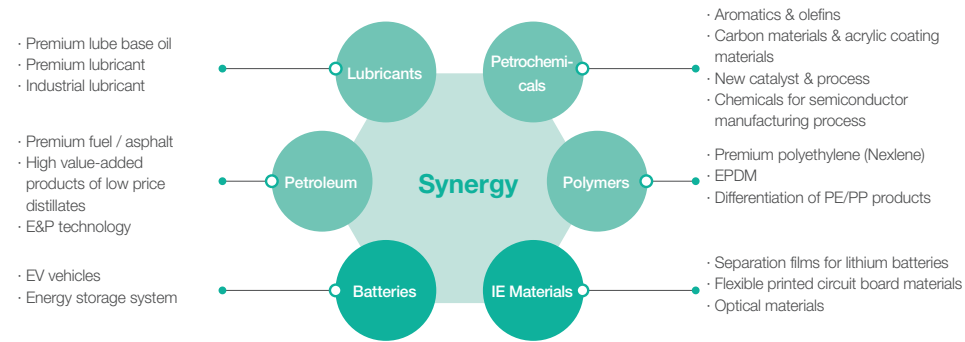
# R&D

Providing high-quality products and services through technology development not only strengthens the company's competitiveness, but also acts as a means of providing differentiated value. SK Innovation explores new growth engines and reinforces differentiated competitiveness by conducting R&D in diverse fields.

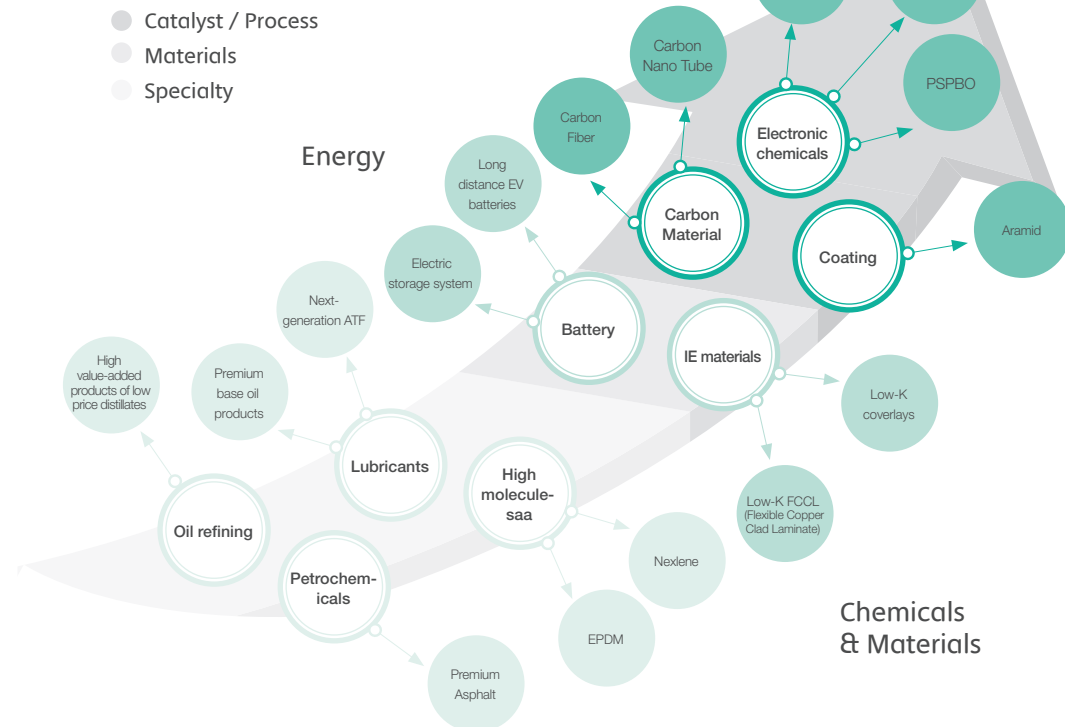
## Global Technology

SK Innovation has made continuous investments in developing technologies related to energies and chemicals aimed at promoting competitiveness through innovation and exploring new businesses based on technologies. Global Technology is an organization for developing core technologies in charge of the R&D of SK Innovation and its subsidiaries, including petroleum, petrochemicals, polymers, lubricants, batteries, IE materials.

### R&D Fields



## Innovation and Growth Strategies for Technology Competitiveness



## Introduction by Field

	<b>Petroleum</b>	Developing petroleum resources and high-performance petroleum products by continuously developing high-tech petroleum technologies, including technologies for handling extra-heavy crude oil and technologies for increasing supplies Technology for improving crude oil / Environment-friendly and high-performance petroleum products / Asphalt
	<b>Lubricant</b>	Producing the premium lube base oil of Very High Viscosity Index (VHVI) called YUBASETM and the premium lubricant called ZICTM made from it Premium lube base oil (YUBASETM) / High-performance lubricant (ZICTM) / High viscosity base oil
	<b>Petrochemical</b>	Possessing independent catalyst and processing technology for producing high value-added aromatic products Olefin technology / Aromatic technology / Petroleum technology / Chemical product technology
	<b>Polymers</b>	Developing high-performance polyolefin manufacturing technology and diverse customer-oriented polymers Nexlene / EPDM rubber / On-demand products
	<b>Advanced Battery</b>	Developing and producing lithium polymer batteries for EV and batteries for energy storage devices EV batteries / Batteries for energy storage devices
	<b>IE Materials</b>	Developing and producing new materials in the fields of IE and energy by using core competencies in polymer and petrochemical FCCL (Flexible Copper Clad Laminates) / Optical films

### Developing Environment-Friendly Technologies : WMA (Warm Mix Asphalt)

The WMA (Warm Mix Asphalt) technology is an environment-friendly asphalt technology that reduces the manufacturing and construction temperatures of the asphalt mixture by about 30 °C compared to the existing HMA (Hot Mix Asphalt) technology. This technology ensures the original function of the road, and also modifies the asphalt's characteristics so that it is easier to do the coating and compactness at a lower temperature. From the environmental perspective, it has the advantage of reducing CO<sub>2</sub> emissions and fuel consumption and increasing the use of recycled asphalt concretes. Also, from the road function perspective, it reduces damage to roads like potholes formed by strengthening the compactness of asphalt pavement and improving water resistance. According to the Korea Institute of Civil Engineering and Building Technology, it has been established that using the WMA technology helps in reducing CO<sub>2</sub> emissions and fuel consumption by more than 30 percent.