



Gwangju Institute of Science and Technology

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GIST to make Gwangju an energy-equal city that embraces color with 'next-generation color solar power'

- GIST (Gwangju Institute of Science and Technology) Energy Valley Institute of Technology (Director Kwanghee Lee) will work with Gwangju City Hall and Korea Electric Power Corporation to promote a resident-friendly 'next-generation color solar energy new industry cluster construction project.'
- Photovoltaic power generation technology using clean solar energy is one of the top 10 core carbon neutral technologies. Among them, Building Integrated PV (BIPV) technology is drawing attention as a key promising technology for realizing energy independent cities as it can overcome the space constraints in urban areas with small spaces by installing solar cells on the outer walls of various buildings.
 - However, existing solar energy technologies have limited distribution due to its low aesthetics that did not harmonize with the surrounding environment, and a new approach is needed to overcome this.
- Color photovoltaic technology is a technology that can implement multicolor, which is a required characteristic of BIPV technology for buildings, by applying



color filters to solar cells, and it is expected to be a highly aesthetic solar technology.

- If organic solar cell and perovskite solar cell technology, which are recently spotlighted next-generation solar cell technologies, are combined with color solar power generation, it is possible to develop a zero-energy building with an energy self-reliance rate close to 100% applied to various types of construction sites.
- The GIST Energy Valley Institute of Technology plans ▲ As the first stage, to promote the 'color solar power pilot project' in Gwangju in 2021 to secure the residents' acceptance and the feasibility of the related technology ▲ In the second phase, GIST Energy Valley Institute of Technology plans to establish a support center in 2022 for demonstration and certification specialized in the color solar fields in Gwangju and Jeonnam, and it plans to establish an industry-academic and research cooperation system that connects GIST Research Institute for Solar and Sustainable Energies, Gwangju Metropolitan City, and KEPCO.
- Director Kwanghee Lee said, "The purpose of this project is to promote the dissemination of solar energy in Gwangju and further establish an industry-academic cooperation system with solar energy companies in the region and revitalize local industries. To this end, a task force team was formed centered on Energy Valley Institute of Technology team leader Yong-hee Moon, GIST Research and Innovation Center senior researcher Hong-kyu Kang, and Graduate School of Energy Convergence Professor Hee-joo Kim."
- Director Lee also said, "This is expected to contribute greatly to achieving RE100 in Gwangju and Jeollanam-do areas based on next-generation solar energy as it can procure centralized energy demand in the city center on its own through this project."



“차세대 컬러 태양광 에너지 신산업 클러스터 조성 사업”

LED 조명 / 버스 알림판

LED 조명, 버스 도착 알림판

: 사용 전력 300W

발열 의자 무선 충전기

발열 의자, 무선충전기

: 사용 전력 500W

컬러 태양광 모듈 설치

3kW 급 컬러 태양광 설치

10kW 급 ESS 설치

은행 ATM 부스

ATM: 사용 전력 500W

냉 난방기: 사용 전력 1kW

▲ GIST Energy Valley Institute of Technology's next-generation color solar energy new industry cluster construction project



▲ GIST Energy Valley Institute of Technology group photo of research team

