



## Press Release

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### NJIT Taps into Solar Energy to Power New Campus Center

**NEWARK, March 18**

New Jersey Institute of Technology (NJIT) is saving money and energy while also protecting the environment.

The university has installed a 50-kilowatt solar-powered system on the roof of its new campus center. An array of 160 solar panels carpets the roof, converting sunlight into electrical currents.

The panels provide power for the campus center and save the university \$40,000 a year in electrical bills. NJIT also received a \$215,000 rebate from the N.J. Board of Public Utilities to offset the cost of installing the system.

The solar-powered system prevents 100,000 pounds of carbon dioxide a year from being released into the air. That's how much carbon dioxide would issue from a coal-burning power plant had NJIT not installed the panels. The panels also prevent the release of nitrogen oxide and mercury, two other byproducts of a coal-burning power plant.

"NJIT's solar-unit is the most advanced in the state," said Leon Baptiste, the engineer who installed the system. Baptiste, president of LB Electric, Newark, received an electrical engineering degree in 1991 from NJIT. He also participated in NJIT's Educational Opportunity Program (EOP), which helps minority students earn technological degrees and become engineers. Baptiste is educational chairman of the Metropolitan Electrical League, Long Valley, a non-profit group comprised of some 300 electrical companies. The League offers co-ops and scholarships to NJIT students who study electrical engineering or telecommunications.

Baptiste, of Roxbury, mounted 144 of the framed panels onto the roof. He added 16 upright solar trackers, which rotate in line with the path of the sun to absorb maximum sunlight. The panels, framed with aluminum and stainless steel, can withstand the sun's ultraviolet (UV) radiation. The solar panels, which have a 25-year warranty from distributor TurtlEnergy, Linden, also protect the roof from the ravages of weather and UV radiation.

The solar panels have a silicon surface laced with photovoltaic (PV) cells, said Baptiste. PV cells are devices that convert sunlight to electricity, bypassing mechanical generators. PV stands for photo (light) and voltaic (electricity), whereby sunlight photons free electrons from the silicon surface.

When photons from the sun's rays hit the silicon surface of a solar cell, they are absorbed by the electron of the silicon atom. The supercharged electron now has enough kinetic energy to leave the host atom. The solar cell collects the stream of liberated electrons on its surface, thereby creating a direct current (DC). The DC is fed into an inverter and changed into an alternating current (AC), which when connected to an electric panel, generates electrical power.

Inside the campus center lobby stands a kiosk whose computer screen displays the amount of energy saved by the panels. Since the system was installed last August, the monitor shows that enough energy has been saved to "to power 510 houses in one day," or "enough energy to make 500,000 cups of coffee." The monitor also shows that the panels have prevented 68 pounds of nitrogen oxides and 20,000 pounds of carbon dioxide from being released into the air.

"It's the best solar-electric array I've seen," said Baptiste. "It should be a model for other universities, and businesses, across the state. Solar electricity saves NJIT and taxpayers money while also preserving the environment. It's a win-win for all."

New Jersey Institute of Technology, the state's public technological research university, enrolls more than 8,200 students in bachelor's, master's and doctoral degrees in 100 degree programs offered by six colleges: Newark College of Engineering, New Jersey School of Architecture, College of Science and Liberal Arts, School of Management, Albert Dorman Honors College and College of Computing Sciences. NJIT is renowned for expertise in architecture, applied mathematics, wireless communications and networking, solar physics, advanced engineered particulate materials, nanotechnology, neural engineering and eLearning.

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