



South Korea designates “Carbon Valley”

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South Korea recently announced a \$200 million investment over the next five years to establish two industrial complexes specializing in carbon materials. Both are located in Jeollabuk-do Province, the self-proclaimed “economic hub of Northeast Asia in the 21st century.” This investment aims to make Jeollabuk-do an internationally thriving region for research, development, and industry in areas such as carbon fibers, artificial graphite, and carbon polymers.

The South Korean Ministry of Knowledge Economy (MKE) designated Jeonju, the capital of Jeollabuk-do, and the bordering city of Wanju as Carbon Valley Zones in August 2010. The government hopes to turn these historically farming communities into high tech areas that meet the rising need for carbon materials in the automobile, aircraft, electronic, wind energy, and other renewable energy industries.

Five-year targets for the region include creating 20,000 new jobs and reaching production levels of 3.2 trillion South Korean won (SKW), which is about 2.8 billion United States dollars (USD). To this end, the government is offering tax breaks and investment subsidies to foreign companies interested in relocating to Jeollabuk-do. Such companies are eligible for national corporate and income tax exemptions for five years, and a 50% deduction in these taxes for the following two years. They are also eligible for local acquisition, registration, and property tax exemptions for 15 years.

Projects related to advanced technology with investments of more than USD 10 million are eli-

gible for cash grants for up to 5% of the investment amount, with a limit of SKW 5 billion (about USD 4.3 million). There are also a number of incentives for foreign investment firms that have already invested in Korea, such as factory establishment subsidies and factory expansion grants.

“With these efforts, Jeollabuk-do Province wants to play a central role not only domestically, but also globally in carbon research and industry,” said Shin Jae Kang, director of the Jeonju Institute of Machinery and Carbon Composites and lead on the Carbon Valley Project.

Korea is one of the top five consumers of carbon materials but relies

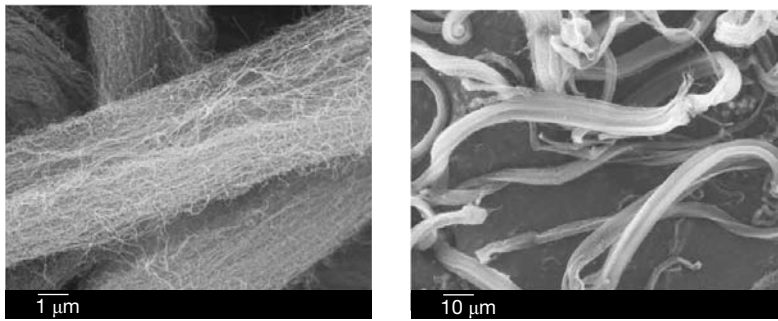
primarily on imports from Japan, the United States, and the European Union to meet its demand, according to Kang. “Through the Carbon Valley Project, Korea aims to establish domestic suppliers of carbon fibers in Korea as well as develop advanced technology for carbon-based composite materials,” he said.

The Jeollabuk-do Province has recognized the potential for carbon materials to stimulate the local economy since 2002, and has since been actively creating an attractive environment for industry. Both Jeonju and Wanju have established high-tech complexes with national and local support. As a result of these efforts, said Kang, major Korean automobile-related companies such as Hyundai, Daewoo, Mobis, and Kia now have their manufacturing facilities in this area.

Some of the other carbon-related laboratories and companies in the area include the Korea Advanced Nano Fab Center, part of the national core of research infrastructure focused on nanodevices and compound semiconductors; a branch of the Korean



The ribbon-cutting opening to the 2009 International Carbon Festival, held every year in the Jeollabuk-do state office building. Image courtesy Young Hee Lee, Sungkyunkwan University



Scanning electron microscope image of multiwalled carbon nanotubes, HANOS CM-250, produced by Korean-based Hanwha Nanotech Corporation. Image courtesy Hanwha Nanotech Corporation

Institute of Science and Technology; Hanwha Nanotech Corporation, a company that produces carbon nanotubes (CNT) and CNT-based composites; and Vinatech, a company specializing in carbon electrodes.

Jeollabuk-do has hosted the International Carbon Festival (ICF) annually since 2006, a meeting of more than 1000 international participants with a stake in the carbon industry. The 2010 ICF featured the 3rd International Conference on Multi Functional

Materials and Structures and an industrial exhibit featuring lightweight composite materials and potential applications of carbon fibers. Kang said that the ICF is a stepping stone along the path to a stronger carbon industry and international network of stakeholders, helping the province become a leader in the carbon material industry.

Young Hee Lee, a professor from the Department of Energy Science at Sungkyunkwan University, sees this time of transition in Jeonju as a sign

of hope. In the past, Jeonju, Lee's hometown, has been a prosperous agricultural center with farmlands and beautiful mountains, but its economy is now suffering. "To catch up with modern society, high technology with minimum environmental damage is a key issue," said Lee.

The Carbon Valley Project is one of several initiatives by the Ministry of Knowledge Economy (MKE). The outcome of a 2008 merger of the Ministry of Commerce, Industry, and Energy; the Ministry of Information and Communication; the Ministry of Education, Science, and Technology; and the Ministry of Strategy and Finance, MKE aims to build a Korean economy based on research and innovation. Some of the new areas of focus are intelligent robots, biopharmaceuticals and medical devices, and green transportation systems. For additional information regarding these and other initiatives, visit the MKE Web site, www.mke.go.kr/language/eng.

Kendra Redmond

NIH announces program to accelerate research independence <http://commonfund.nih.gov/earlyindependence>

The U.S. National Institutes of Health (NIH) intends to invest approximately \$60 million over the next five years in the NIH Director's Early Independence Award (EIA) program to help a pool of talented junior investigators leapfrog over traditional post-doctoral training and move into independent academic positions at U.S. institutions, directly upon completion of their graduate research degrees.

"The Early Independence Award Program will reduce the amount of time these exceptional junior scientists spend in training and allow them to start highly innovative research programs as early in their careers as possible," said NIH Director Francis S. Collins.

The Early Independence Award program is funded through the

Common Fund and managed by the NIH Office of the Director in partnership with the various NIH Institutes, Centers, and Offices.

Common Fund programs are designed to pursue major opportunities and gaps in biomedical research that no single NIH Institute could tackle alone, but that the agency as a whole can address to make the greatest impact possible on the progress of medical research. The proposed research may be in any scientific area relevant to the mission of NIH, including biological, physical, chemical, computational, engineering, and mathematical sciences.

NIH expects to issue up to 10 Early Independence Awards in fall 2011. To apply for these awards, exceptional junior investigators must identify a

host institution. Alternatively, institutions may actively recruit exceptional junior scientists to apply for these positions. Non-U.S. citizens are also eligible to apply if they are working for a U.S. institution. These awards will be very selective, and each institution may only submit two applications. EIA recipients will receive up to \$250,000 in direct costs per year for up to five years for research that complements and enhances an institution's research program.

The deadline for submitting Early Independence Award applications is Jan. 21, 2011. Additional information, including the funding opportunity announcement is available at: <http://commonfund.nih.gov/earlyindependence>. □

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