



Reincarnating Ancient Sea Creatures

SCEC CREATES LIFELIKE MODELS AND DISPLAYS WITH 3D PRINTING.

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– Yoon Chang-sik / SCEC

CASE STUDY



SCEC, a Korean manufacturer of exhibition models, won an aquarium project with its 3D printing capabilities. 3D printed models of aquatic life, (center) appear lifelike after post-processing (left and right).

The Smart Company Exhibition Center (SCEC) specializes in creating a variety of models and the interior design of exhibition halls and museums. Since its founding in 2005, the Seoul-based SCEC has handcrafted exhibition models through labor-intensive and time-consuming procedures.

In 2007, an urgent order required the company’s employees to work long hours to meet the deadline. The project ultimately led SCEC to rethink its production model to gain speed. SCEC’s planning and management department then purchased a powder-based 3D printer that produced 3D models based on 2D sketch input; however, the company soon realized that the precision and color reproduction of the powder-based models fell short of expectations.

Realism With Shortened Processing Cycle

SCEC did another round of research and evaluation for a 3D printer that offered both precision and fine details. It chose a PolyJet™ technology-based 3D printer because it met both precision and color reproduction requirements.

The 3D printer also brought other unexpected benefits: user-friendliness and speed. “It now only takes three to four hours to complete one job, whereas it would previously take one full day by hand,” said Yoon Chang-sik, head of SCEC’s planning and management department. Staff can let the 3D printer run larger models, such as one that took 40 hours, overnight without monitoring. Night shifts are no longer necessary.

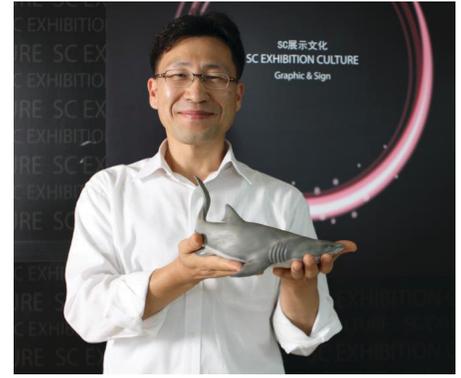
With the new 3D printer, SCEC has successfully embellished some of Korea’s large-scale aquariums and international exhibitions, including the Gyeongnam Fishery Products Pavilion and the 2012 Gyeongnam Gosung Dinosaur World Expo. The exhibition’s organizer praised the company for its 3D printed models of anchovies and figurines of the former heads of the National Federation of Fisheries Cooperatives. Because of the 3D printer’s ability to print layers as fine as 16 microns, the exhibition models captured visitors’ attention and vividly illustrated fine details.

Business Growth and International Attention

3D printing has helped SCEC expand to projects outside the exhibition halls. In 2014, the company participated in a 3D printing pilot initiated by the Korean government, in which it tested the accuracy and quality of new scanners and editing software developed by the Electronics and Telecommunications Research Institute (ETRI).

SCEC has also seen a steady business growth and garnered attention in the international scene as well. The Scientific and Educational Complex Primorsky Oceanarium in Vladivostok, Russia, hired the firm to produce paleozoic era creatures replicas for its new aquarium. This agreement amounted to \$1,130,000 (KRW 1,130 million) in sales for SCEC and provided a more engaging way for visitors to learn about the paleozoic era creatures through 3D printed replicas. More Russian contracts are in the pipeline, and SCEC can now work on multiple jobs simultaneously without enduring extensive work hours.

At time of the interview, SCEC was considering adding another 3D printer to its production house to expand its business into new industries. “In addition to saving time and costs, 3D printing has opened new possibilities for us and enabled us to add more value to our projects,” said Yoon. In June 2015, SCEC opened a 3D printing service shop on the first floor of the company building. “We are planning to actively target the 3D printing service market,” added Yoon.



Yoon Chang-sik, head of SCEC’s planning and management department, displays one of the company’s 3D printed models.



These 3D printed replicas of a shark show a version right off the printer (center) and post-processed (left and right) for detailed teeth and sharp fins.

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