



## Kielce Technology Park in Poland competes on world stage with SLS 3D printing

Forbes magazine recently reported that only a few economies have shown persistent growth over the last quarter century. The list includes the expected—China and India—and one country that might not be as expected: Poland.

Poland has achieved most of its success through low-cost manufacturing, according to a recent McKinsey & Company report. But the report said that the nation needs to redefine its growth strategy and identify new sources of development, such as product innovation.

A big step in that direction is a new 3D Printing Center in the Kielce Technology Park. The Center is built around the 3D Systems ProX™ SLS 500 selective laser sintering (SLS) system. At the time of its installation in summer 2015, it was thought to be the first machine of its class in Europe and the second in the world.

“We decided to invest in a system that ensures a technological advantage in terms of quality, precision and cost of operation,” says Szymon Mazurkiewicz, CEO of Kielce Technology Park. “The investment signals our commitment to being a world-class producer of 3D printed parts and goods that drive innovation for our customers.”

### Immediate return on investment

The ProX SLS 500 produces ready-to-use functional parts and complete assemblies for a wide variety of industrial, medical and consumer applications. It uses 3D Systems DuraForm® Plastic, a durable nylon material, to produce components that equal or surpass injection-molding quality.

The return on investment for the ProX SLS 500 began almost immediately for Kielce Technology Park: Within the first two months of opening, the 3D Printing Center attracted 40 different customers.

Initial customers represent a broad range of industries, including fashion, architecture, chemical and food packaging, casting, medical and electronics.

Parts printed by the ProX SLS 500 include light switches, housings for air purifiers, impellers and pump elements, sound-absorbing panels, fire nozzle lamps, children’s toys, and customized buttons and zippers for clothes.





The Center also signed long-term contracts within the first month of operation, demonstrating the readiness of companies to delve into the market for SLS-produced goods.

“We received excellent training, service and technical support from 3D Lab, the authorized 3D Systems Partner in Poland, that helped us make the most efficient use of the ProX SLS 500 for our customers,” says Tomasz Bajor, Chief Engineer of the Kielce Technology Park 3D Printing Center.

**Versatility, quality, economy**

The ProX SLS 500 was selected as the linchpin of the 3D Printing Center’s operation after more than a year-and-a-half search that took into consideration the variety of 3D printing technologies available and the market’s constantly changing demands.

“We took multiple products and technologies into consideration before deciding to go with the versatility of SLS for both prototypes and short-series production,” says Mr. Bajor. “A big asset of the ProX SLS 500 is healthcare safety certification for the material DuraForm PA used in the medical and food industries.”

It was not just the printed results that attracted Kielce Technology Park, but the automated and efficient operation of the ProX SLS 500.

The printer has an integrated material quality control (MQC) system that does continuous automatic sifting and filtering while providing maintenance-free transportation of material to the printer’s cartridges. A unique feature is the ability to cool the print cake outside of the printing chamber, enabling users to place a second tray in the machine to reduce printing downtime and increase manufacturing efficiency.

A 381 x 330 x 457 mm (15 x 13 x 18 inches) build chamber provides operational flexibility, allowing users within a typical week to produce several large models or dozens of smaller objects. If the chamber is not fully filled, new models can be added while the machine is working on a previously loaded project.

Finished prints feature a smooth surface finish, with the highest resolution and edge definition of any SLS system.

“The ProX SLS 500 delivered the best results in the testing stage,” says Mr. Bajor. “The surface finish and edge sharpness were superior to the other laser sintering products on the market.”

Operational cost savings and environmental consciousness also are important to Kielce Technology Park. The high-recycling rates of the SLS powder used in the ProX SLS 500 will allow the Kielce operation to save money and reduce waste, according to Mr. Bajor.

“The ProX SLS 500 has the highest rate of unsintered material recovery, which after post-processing goes back into the printing tray for use in building the next series of parts. This provides major economical and environmental benefits.”





### Keeping pace with world leaders

The versatility, reliability, speed and economy of the ProX SLS 500 give the 3D Printing Center at Kielce Technology Park a wide range of opportunities in the future, both within the country and abroad for industries such as plastics, automotive, aerospace, electronics, medicine, industrial design, food, defense and others.

“Our customers praise the quality of their 3D printed parts and find them better in terms of precision and resolution than any competitive service,” says Nina Jarocka-Bak, Coordinator of the 3D Printing Center. “They can work with us to reinvent entire production and supply chain strategies, leading to lower manufacturing costs and the ability to make the highest-quality, fully customized products in the least amount of time.

“We are now developing our cooperation with several companies, continuously widening our sales channels and promoting the Center. We might eventually specialize in certain products, but for now we are not limiting our 3D printed offerings.”

With the 3D Printing Center at Kielce Technology Park and other national technology initiatives, it might just be a matter of time before Poland sheds the low-cost manufacturing label and takes its place among the world’s pacesetters in innovation.

