Реферат по английскому языку

Today there is no one who has never heard about 3D-printing. Every two weeks I find the news from this branch of science: somebody has printed a house, scientists have printed a prosthesis and so one. Additive manufacturing has captured the interest and imagination of many observers, this technology is believed to be the future of manufacturing. 3D printing does offer some unique and interesting possibilities, but can it transform conventional manufacturing?

3D printing, more properly called additive manufacturing, refers to processes used to create a three-dimensional object in which layers of material are formed under computer control to create an object. Objects can be of almost any shape or geometry and are produced using digital model data from a 3D model or another electronic data source such as an Additive Manufacturing file. Thus, unlike material removed from a stock in the conventional machining process, 3D printing or AM builds a three-dimensional object from computer-aided design model or AMF file by successively adding material layer by layer.

3D printing has been around for nearly three decades: early additive manufacturing equipment and materials were developed in the 1980s. Since then, 3-D printing has taken two paths.

3D printing is a general-purpose technology that is being used in an extraordinarily wide range of applications—from potentially printing replacement human organs to wings of airplanes and even much of a nuclear weapon. There are some extraordinaire applications of additive manufacturing.

In Oak Ridge National Laboratory scientist invented a robotic prosthesis. Both the underlying skeleton and skin are made of titanium to make the hand durable and dexterous while also keeping it lightweight. The powerful miniature hydraulics that move the fingers rely on a network of ducts integrated into the prosthesis’s structure—no drilled holes, hoses or couplings required. Is has very complex design that has internal hydraulic tubing that can be run in excess of 3,000 pounds per square inch.There’s no technology today, other than additive manufacturing, that can make that robotic hand.

Despite these advantages, manufacturers still largely think of 3-D printing as a way of making prototypes rather than industrial-grade products. The reasons are threefold: slow speeds, inconsistent quality and the difficulty of building complex objects.