

3D Computed Tomography and 3D Printing

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3D printing technology began to commercialize in the early 1990s under the name of "fast prototype" and has grown rapidly to date. In the process of developing new products, it became recognized as another general-purpose processing technology along with the existing traditional processing. Most 3D printing is a lamination method in which materials are stacked to form a required shape. There are methods of melting plastic, laser shooting into liquid material to make a shape and welding metal to make a shape. 3D printing is used in various fields such as medical, automobiles, household goods, aircraft, etc., and is expanding now. The 3D computed tomography technology identifies the internal structure of 3D printed output and makes it possible to evaluate the quality of the product. Internal surface conditions and defects of 3D printed output with complex structure can be checked using 3D computed tomography. After 3D tomography, reconstructed data is used for 3D printing input model making and through model modification, copies or complementary products can be produced. For example, 3D tomography and 3D printing technologies have recently been used simultaneously in the production of reproductions of cultural properties for exhibition and restoration of damaged original sample in the field of cultural property research and archaeology.