ABSTRACT

METHOD AND APPARATUS FOR DIGITAL FABRICATION OF OBJECTS USING ACTUATED MICROPIXELATION AND DYNAMIC DENSITY CONTROL

A fabrication device includes a build surface to receive layers of material for production of a 3-dimensional solid representation of a digital model and an imaging component to bind respective portions of the build material into cross sections representative of portions of data contained in the digital model. The imaging component may be a programmable planar light source utilizing a micropixelation system and refractive pixel shifting mechanism, or other imaging system. The device may include a system for controlling the density of the printed part. The object may be a powder composite component using any of a variety of powder materials or a plastic component. The object may be further post-processed to produce a high precision metal or ceramic component.

[Fig.9]