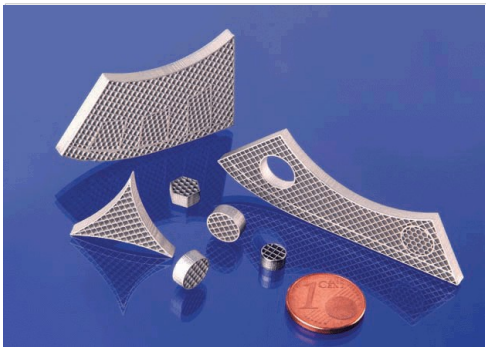


How Two-and-a-Half-Dimensional Printing Might Accelerate Production

Posted in [Printing Services](#) by Thomas Klein on June 5, 2014



Source: Fraunhofer

Currently, 3-D printing offers significant advantages for low-volume production of customized products. For mass manufacturing, however, it's not feasible; the technology is slower and more expensive than conventional methods. This could soon change, though, thanks to a technology developed by the Fraunhofer IFAM in Dresden that one might call two-and-a-half-dimensional printing.

Fraunhofer's technology differs from conventional 3-D printing because the shape of the printed object is not determined by a moving print head following a digital blueprint. Rather, the machine squeezes a printable mass

through a customized screen, giving the component the desired form. The machine adds material layer by layer until the geometry changes on the vertical axis. Then, the manufacturer needs to exchange the screen.

Currently, this process needs to be done manually, but Fraunhofer is talking to companies that might help to automate the process, according to Fraunhofer. As with 3-D printing, software cuts the objects up into horizontal layers and determines how many screen changes are necessary to create the desired form.

"Just like with 3-D printing, you can integrate structures like cooling channels directly into the production process," Fraunhofer researchers told *EMDT* at [MEDTEC Europe](#). After the component is completed, the machine transports it to the curing chamber. According to the researchers, manufacturers can process several metals and ceramics with the technique.

One of the cornerstones of the technology is the printing mass. Fraunhofer developed specific pastes containing different additives and binders, depending on the properties of the material. Because the process is highly repeatable and several components can be produced in tandem, the technique is cheaper and quicker than 3-D printing.

For a number of products, the technology might be a good compromise between the geometrical freedom of 3-D printing and the cost-efficiency of conventional methods like moulding.