

# Developing customised snacks through 3D food printing

May 3 2016

---

VTT Technical Research Centre of Finland Ltd aims to develop advanced food manufacturing technologies by combining expertise in food, material science and 3D printing technology. Healthy snacks with great textures are in increasing demand among consumers. Researchers have the long-term vision of developing high-tech vending machines that provide customised purchases.

Today's consumer expects healthy, nutritious food with added elements such as design, pleasure and even playfulness. Self-production would enable customisation in addition to these. 3D [printing technology](#) offers new opportunities to realise such expectations.

In its initial trials, VTT tested starch and cellulose-based materials for 3D food prototypes. It is also working on printability of protein concentrates of both plant (oat and faba bean) and dairy (whey protein) origin.

"However, a great deal of work is needed in order to proceed to industrial-scale production. Equipment needs to be developed in addition to materials. Such equipment could be developed for domestic 3D food printing as well as vending machines," says Nesli Sözer, Principal Scientist at VTT.

Texture is an important driver of the taste perception of many food products, and is behind many successful innovations. Brands are creatively combining textures with features such as crispy inclusions,

soft centres and extra-crunchy toppings. 3D printing technology will enable the layer-by-layer manufacture of various structures, from crispy to soft gels that produce a distinctive mouthfeel.

The 3D food printing is an emerging and developing technology, with a great deal of active research ongoing.

## **Creating ingredient mixes with flow properties**

A new Tekes-funded project coordinated by VTT in collaboration with the Aalto University targets at 3D printing of multi-textural food structures in a techno-economically feasible and sustainable way.

A specific aim of the partners is to create new ingredient mixes with suitable flow properties for 3D processing. The project will develop globally competitive expertise in 3D food printing technologies with subsequent technology innovations to be utilized by Finnish industries from various sectors such as ingredient, [food](#) processing, equipment manufacturing, software and online services and retail.

Provided by VTT Technical Research Centre of Finland

Citation: Developing customised snacks through 3D food printing (2016, May 3) retrieved 21 June 2024 from <https://phys.org/news/2016-05-customised-snacks-3d-food.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.