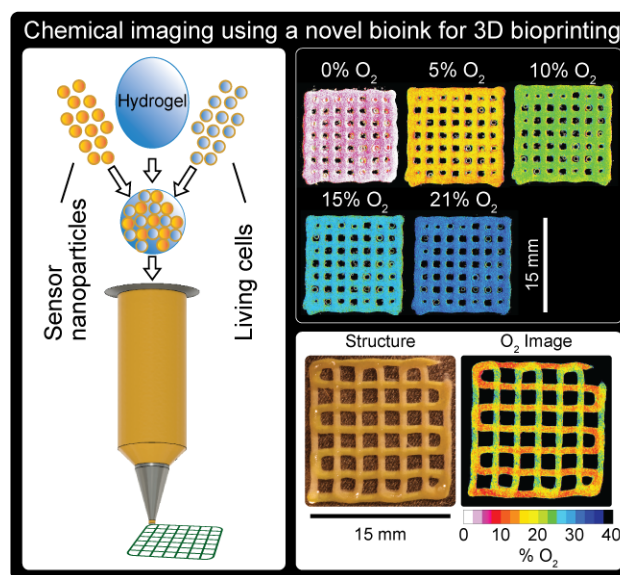


# 3D Bioprinting

Functionalized bioink containing oxygen-sensitive nanoparticles allows monitoring of the oxygen metabolism and microenvironment of cells on line.



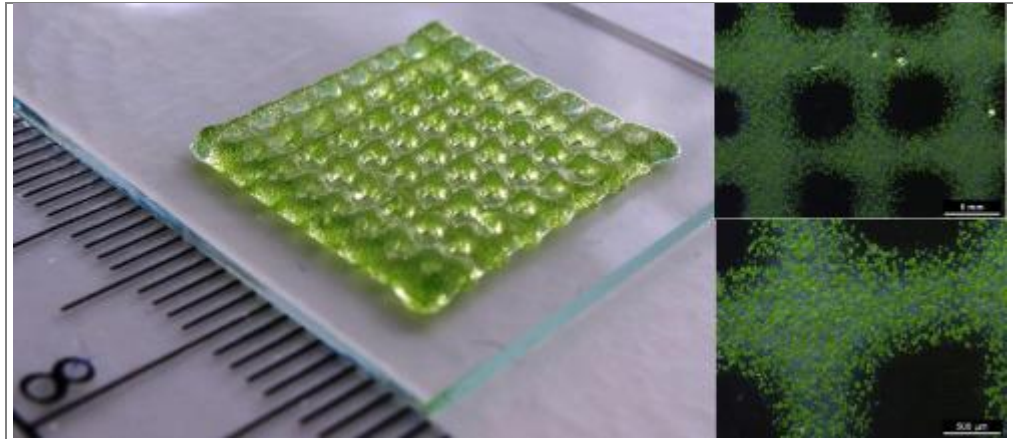
## Background

In complex 3D culture systems, such as bioprinted constructs with clinically relevant dimensions, the local O<sub>2</sub> concentration depends on the macroporosity of the hydrogel scaffold as well as on the micro/nanoporosity of the hydrogel material (bioink), which O<sub>2</sub> has to pass through via diffusion. Thus it is interesting to be able to monitor the actual “on-site” O<sub>2</sub> concentration and other analytes in real time.

## The invention

The invention is a novel sensor functionalized Bio-Ink that allows real time monitoring of the O<sub>2</sub> concentration

You can read more about the technology at this website:



3D printed structure containing green algae

<https://www1.bio.ku.dk/nyheder/pressemeddelelser/3d-bioprinting-of-living-structures-with-built-in-chemical-sensors/>

## Key selling points

- Able to monitor cell to cell interactions
- Detailed knowledge about nutrient/substrate availability
- 3D monitoring

## Development status

Proof of principle/scientific proof of concept

## Intellectual property rights

The Bio Ink invention is protected via a pending international PCT application