



PPP Project Annual Report 2018

The PPP-projects that have been established under the direction of the top sectors must submit an annual report on their technical and financial progress. This format is to be used for reporting the technical progress. A separate format ('PPP final report') is available for PPP-projects that have been completed in 2018.

The annual reports will be published in full on the websites of the TKIs/top sector, excluding the blocks 'Approval coordinator/consortium' and 'Planning and progress' . Please ensure that no confidential matters are left in the remaining blocks.

The PPP Project Annual Reports must be submitted by 15 February 2019 to Hans van der Kolk

General information	
PPP number	TKI-AF-15210
Title	<i>Soluble Bio-based Support Structures for digital printing applications</i>
Theme	Biobased Economy, now Circular
Executive knowledge institution(s)	Wageningen Food & Biobased Research
Research project leader (name + e-mail address)	Karin Molenveld, karin.molenveld@wur.nl
Coordinator (on behalf of private parties)	Rene van der Meer (Océ)
Government contact person	Jan van Esch
Total project size (k€)	250k€
Address project website	https://www.wur.nl/nl/Onderzoek-Resultaten/Topsectoren/show/Soluble-Bio-based-Support-Structures-1.htm
Start date	01-07-2017
End date	31-6-2019

Approval coordinator/consortium

The annual report should be discussed with the coordinator/the consortium. The TKIs appreciate being informed of possible feedback on the annual report.

The coordinator has assessed the annual report on behalf of the consortium:	<input checked="" type="checkbox"/> approved <input type="checkbox"/> rejected
Possible feedback on the annual report:	

Short content description/aim PPS

What is going on and how is this project involved?

What will be delivered by the project and what is the effect of this?

The objective of this project is to demonstrate that it is feasible to substitute the current 3D printing support materials, that become chemical waste very quickly after use, with environmentally friendly bio-based alternatives. Focus is on the use of commercially available water soluble sugar derivatives.

Océ is adding 3D printing technology to their current 2D printing portfolio. The development of 3D printing technologies for the production of dental structures is an example. Customized, high resolution products are manufactured and there is a definite need for support structures that do not leave artefacts.

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Planning and progress (if there are changes to the project plan, please explain)	
Is the PPP going according to plan?	The project started late, but is according to plan. There is a shift in material selection/screening because of specific materials specifications
Have there been changes in the consortium/project partners?	No
Is there a delay and/or deferred delivery date?	The start date was a half year late and there for the project is extended with a half year (shift)
Are there any substantive bottlenecks?	No
Are there any deviations from the projected budget?	No

Results in 2018/ so far
Give a short description of the high-lights and (most important) project deliverable in 2018 / so far and their target group
<p>In 2018 material screening by WFBR and sampling by ADM has resulted in a shortlist of materials and material combinations that are currently screened by Océ.</p> <p>Initial focus was on sugar polyols but since these substances are too viscous in the melt and since most of the substances are only soluble in water (preventing cleaning of the print head) focus is now on substances with "less OH groups. Examples of (semi-)commercial materials are di-anhydroglucitols like isosorbide and isomannide, but also lactides are evaluated.</p> <p>Di-anhydroglucitols are promising since their melt-viscosity is in the good range, they are soluble in water and organic solvents and they can crystallize.</p> <p>Lactides have a very low viscosity but can be used in combinations with other water soluble substances. The crystallization behavior of lactides is excellent in the specific application.</p> <p>First testing at Océ has confirmed that isoidide is jettable</p>

Number of delivered products in 2018 / so far (in an appendix, please provide the titles and/or description of the products or a link to the products on public websites)			
Academic articles	Reports	Articles in journals	Introductions/workshops
n.a	n.a	n.a	n.a

Appendix: Names of the products or a link to the products on a public website

<https://www.wur.nl/nl/Onderzoek-Resultaten/Topsectoren/show/Soluble-Bio-based-Support-Structures-1.htm>