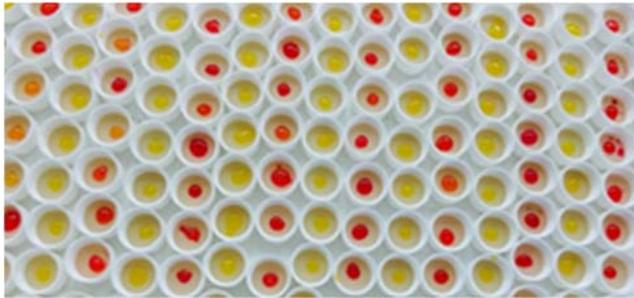
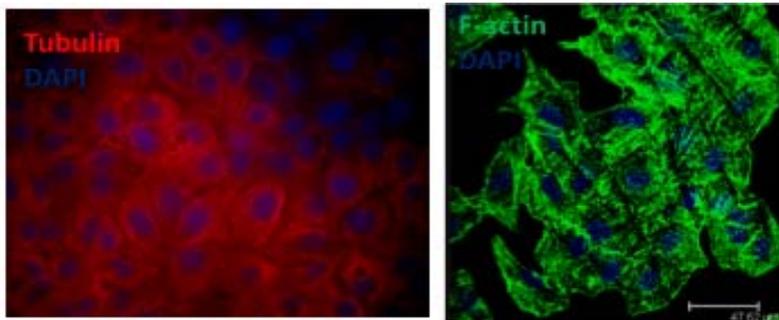


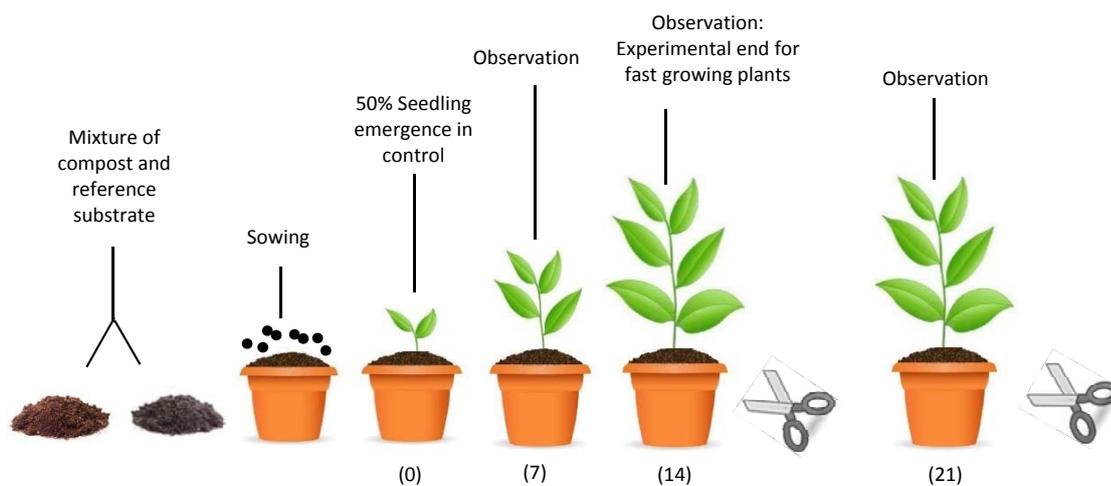
Plastic bottle caps with nanocapsules - pH shift from 6 (●) to 3 (●)



Immunofluorescence staining as means to display cell morphology



Compostability - Experimental methodology applied to evaluate ecotoxicity



*3 layer blown film - PLA/MFC/PLA - processing*



*Bottle with 9  $\mu\text{m}$  and jar with 15  $\mu\text{m}$  hybrid polymer coating*



*250 PET and 70 PLA/MFC produced for end-user tests and oxygen transmission measurements*



## Partners and contacts

- [SINTEF \(Norway\)](#)

Åge Larsen – age.larsen@sintef.no

- [ARGO SA \(Greece\)](#)

John Alexiou - jalex@argo-sa.gr

- [Borregaard AS \(Norway\)](#)

Hans Henrik Øvrebø - hans.henrik.ovrebo@borregaard.com

- [Foundation for Research and Technology, \(Greece\)](#)

George Voyiatzis - gvog@iceht.forth.gr

- [Delta Engineering \(Belgium\)](#)

Jacques Coppens - jac@delta-at.be

- [Elastopoli Oy \(Finland\)](#)

Markku Nikkilä - markku.nikkila@elastopoli.fi

- [Innventia AB \(Sweden\)](#)

Torgny Persson - Torgny.Persson@innventia.com

- [Logoplaste Innovation Lab, Ltd. \(Portugal\)](#)

Pedro Lopes - Pedro.Lopes@logoplaste.com

- [Packaging, transport & logistics research center - ITENE \(Spain\)](#)

Nuria Herranz Solana - nherranz@itene.com

- [PlasmaChem GmbH \(Germany\)](#)

Alexei Antipov - antipov@plasmachem.com

- [Prado Karton – Companhia de Cartão, S.A. \(Portugal\)](#)

Fernando Antunes Rosa - a.rosa@pradocartonboard.com

- [SCA R&D Centre \(Sweden\)](#)

Jerker Jäder - jerker.jader@sca.com

- [Stephenson Institute for Renewable Energy – University of Liverpool \(UK\)](#)

Dmitry Shchukin - D.Shchukin@liverpool.ac.uk

- [University of Maribor \(Slovenia\)](#)

Vanja Kokol - vanja.kokol@uni-mb.si

- [Universidade de Aveiro \(Portugal\)](#)

Joao Tedim - joao.tedim@ua.pt



Extended shelf-life biopolymers for sustainable and multifunctional food packaging solutions.



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