

Request for knowledge partners (12/02/2019)

Project title: **Tuning the biodegradability of (bio)polymers for more sustainable plastic applications**

Acronym: Tune2Bio

Project ID	
Type	ICON
Period	3 years
Starting date	2019
Total project budget (€)	TBD
Total man months	TBD
Subsidy percentage	According to SBO- and O&O regulations
Amount of subsidy (€)	TBD
Partners	Current partners not disclosed at the moment

Project description

1. Context

The pollution of the environment by plastics is a hot and controversial topic. Biobased and biodegradable polymers can be an important element in the solution towards more sustainable plastic processing and use. However, “biobased” is not a synonym to “biodegradable”. Not all biobased polymers are biodegradable, some petro-based polymers are biodegradable. And, very important, not all biobased polymers or biodegradable polymers are more sustainable than the currently used petro-based forms. Guiding humanity towards sustainable plastics practices by offering biodegradable and biobased polymers, is a very complex matter. Even more so, if you want the products not to disrupt the well-functioning recycling routes that are already established. This project will research new formulations and plastics options that meet both the sustainability and biodegradability demands, for selected applications in diverse application fields.

2. Goals

To research and test new formulations that meet the sustainability and biodegradability criteria for selected applications. The project will NOT research new monomers leading to biopolymers or biodegradability properties, but will rather research new formulations, inspired by existing biopolymers, by making innovative derivatives and combinations. Both physical as well as

chemical routes will be investigated, respectively blending polymers or synthesizing copolymers from established or emerging monomers, or modifying existing (natural) polymers. Finally adding biobased additives and fillers can tune the properties even further to the specific needs of the end application. The industrial partners will be able to implement the use of these new formulation on a relatively short term in their selected applications, thus innovating their product portfolio and strengthening their competitive position and/or accessing new markets. The project will make a significant contribution to the knowledge base on biobased and biodegradable polymers in Flanders (at knowledge institutions and companies) and will become an important part of the puzzle leading to a future Flemish circular economy.

3. Research Target

The present research project aims to tune the biodegradability of biopolymers to increase the sustainability of plastic applications, this project envisions:

WP1: Formulation of new polymer blends or copolymers materials

WP2: Processing of materials to primary structures (filaments, sheets, films)

WP3: Biodegradability kinetics and optimizing test methods

WP4: Selection, upscaling and testing most promising materials for end applications

WP5: Sustainability and techno-economical assessment of new materials

Request

Catalisti is searching for Knowledge partners with specific expertise in one or preferably multiple of the following domains.

- Knowledge of biobased polymers
- Expertise in tuning of the biodegradability of polymers both physically (blends) and chemically (copolymers) or via enzymatic or catalytic degradation.
- Knowledge of polymer additives enhancing biodegradability
- Experience with food-contact safe polymers
- Expertise in transparent polymer materials (suppressing crystallinity)
- Compounding on lab-scale and processing of biobased and biodegradable polymers
- Sustainability and techno-economic assessment of biobased and biodegradable polymers
- Knowledge of current and upcoming legislation on biobased and biodegradable polymers on European and global level
- Previous projects or collaborations with industrial partners on this specific or a closely related topic.

How to reply to this request

Please send an **email** before **February 25th 2019**, 12:00 PM to your association representative (see contact list below). The decision will be communicated earliest on February 28th 2019. Please already tentatively reserve time on March 1st 2019 (afternoon) in your agenda if possible for a meeting with the initiating companies. An application (2-3 pages without attachments) should contain at least the following items:

1. Organisation and research group
2. Name and contact details of person submitting the proposal
3. Name and contact details of person(s) who will perform the actual tasks (if different from submitting person)
4. A proposal of your role in the project: for which expertise/assignments described above do you apply?
5. A description of your expertise/track record in the project topic for which you are applying (at the 3 organisational levels as mentioned above, i.e. for the organisation and/or research group, for the person submitting the proposal, as well as for the executing person(s)) (preferably give the resumes of submitting and executing persons attached)
6. A description of your experience in carrying out similar assignments as those described in this Request for Partners (again at the 3 organisational levels)
7. A list of relevant funded projects (CATALISTI, VLAIO, EU, ...) where you were a coordinator or partner
8. A commitment to prepare a full project proposal by the end of May together with the other project partners.

Contact List

- KU Leuven: Bert Lagrain (bert.lagrain@kuleuven.be);
- UAntwerpen: Ann Aerts (annfb.aerts@uantwerpen.be);
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- Other: wlibbrecht@catalisti.be

Evaluation

The initiating industrial partners, together with Catalisti, will review all proposals obtained before the deadline mentioned above. The industrial partners will make a selection of the best proposals based on the following criteria:

- your expertise in the requested expertise domain (5pt)
- your experience in carrying out similar assignments (3pt)
- your experience in other relevant funded projects as a coordinator or partner (3pt)
- complementarity with the other executing project partners (4pt)

After submission of your proposal, you can be contacted by telephone or invited to a live meeting (if this is deemed necessary by the industrial partners) to further elaborate your offer. *(Please note that the selection will be made primarily based on your written proposal, so please be complete and thorough, without anticipating on a further (live) elaboration of your proposal)*

The final decision will be communicated typically within 2 weeks after the deadline mentioned above but could take longer depending on the number of proposals and selection of a balanced project consortium. Please do contact Wannes Libbrecht (wlibbrecht@catalisti.be; +32(0)499 31 56 04) if you have any questions concerning this RfP and the Catalisti procedures in general.