

## PROJECT COORDINATOR:



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## PROJECT PARTNERS:



**Environmental Stewardship**  
Sustainability, Safety & Science



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Culgi BV  
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Compagnie Industrielle de la  
Matière Végétale  
www.cimv.fr

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[www.biomimetic-eu-project.eu](http://www.biomimetic-eu-project.eu)



New bio-inspired processes and  
products from renewable feedstocks

For more information please visit [www.biomimetic-eu-project.eu](http://www.biomimetic-eu-project.eu)

# Project

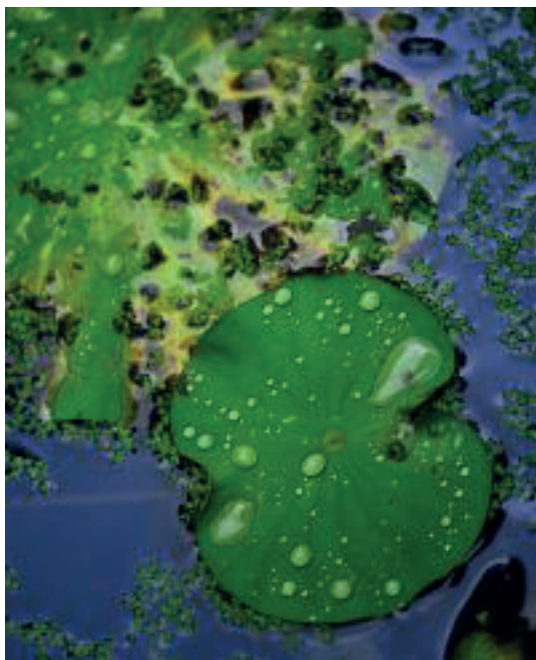


The BIO-MIMETIC project will generate a new class of bio-inspired polymers via extraction of natural compounds from renewable resources.

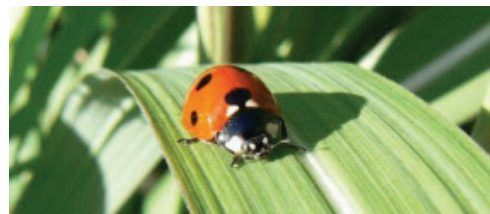
These polymers with novel properties will be produced through a new biological transformation route, involving environmentally friendly enzymatic processes, inspired by polymerisation processes in nature.

The novel BIO-MIMETIC process-route will use renewable resources.

New enzymes will be developed to transform bio-mass into bio-based polymers that can be conjugated or cross-linked into novel polymeric structures for consumer products.



# Objectives



transformation towards integration into end-user products.

The specific objectives of the project are to:

- Design and develop processes for the transformation of biomass feedstock .
- Develop and validate the performance of these novel bio-derived polymers for application in household products such as detergents and new bio-based cosmetics such as emulsions for beauty care use and textiles;
- Quantify the environmental benefits and economic prospects (using life cycle assessment and life cycle costing) of the intermediate (bio-processes) and final (bio-based products) results, taking into account the whole value chain from biomass

In order to reach the project objectives the project involves research partners with experience in enzymatic transformation and bio-based synthetic polymers (IFAM and UNITOV), an SME expert in production of enzymes (Dyadic), in biomass transformation (CIMV), in computational modelling of bio-chemical processes (CULGI) and in Technology Transfer (CTECH/PNO).

P&G and MAVI will test the innovative bio-derived polymer structures in their products, to assess the potential for new green, environmentally friendly and competitive products.

P&G and UNIMAN will carry out LCA and LCC assessments over the value chain, to validate environmental and cost benefits of the BIO-MIMETIC innovations.

# Benefits of the Project



**BIO-MIMETIC** will provide solutions that are environmentally friendly as well as competitive from the environmental and economic points of view:

- **reduced CO2 footprint**, by replacing fossil feedstock with biomass feedstock

- **elimination of toxic/harmful solvents** compared to synthetic alternatives;
- **reduced energy intensity** within safer and cleaner production processes at room temperature, reducing the dependence on fossil energy and reducing the release of

greenhouse gases;

- **re-use waste from the fisheries industry**, by combining BIO-MIMETIC polymers.