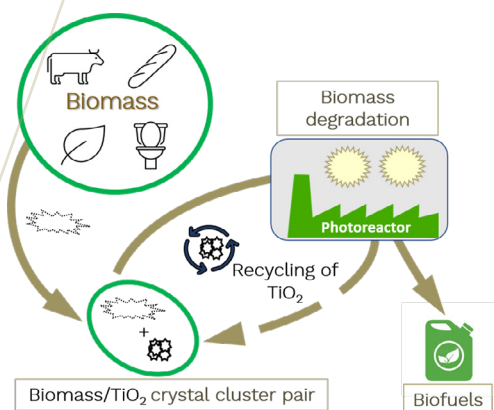


BETIC

A process for biomass conversion into biofuels using a photo-catalyst based on titanium dioxide (TiO₂) clusters.

PRESENTATION

A new biomass conversion process producing biofuels at low temperature. Titanium dioxide crystal clusters are combined with green wastes in water creating a photo catalyst-feedstock pair. The total degradation of the green wastes occurs during exposure to visible light irradiation through TiO₂ photocatalysis. After this step, the products are collected and the recovered aqueous TiO₂ is combined with new green wastes to form a new feedstock pair, ready for the photocatalytic degradation step. This efficient circular process is a totally solvent-free process.



Biomass conversion - Biofuel production
Photocatalysis - Energy production

APPLICATIONS

- Green waste processing
 - Algae
 - Sludge from Wastewater treatment plant
 - Pulp and paper industry wastes
 - Other types of biomass
- Degradation products
 - Liquid phase: alcohols (isopropanol, methanol, etc), acetone, acetic acid, formic acid, etc.

INTELLECTUAL PROPERTY

WO2021/063554 A1 - « Support actif sur photocatalyse avec matériaux à base de TiO₂ »

WO2022003030 - « Méthode pour rendre la biomasse active en photocatalyse sous lumière visible en présence des hybrides TiO₂/MxOy »

COMPETITIVE ADVANTAGES

- Biomass conversion into biofuels at low temperature
- Degradation of all biomass
- Circular process
- Robust, stable photo catalyst
- All steps of process carried out in water (tap water, rain water, etc)

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DEVELOPMENT PHASE

- ✓ TRL 4 (laboratory scale)
- ✓ Target: scale up into pre-pilot in 2023