

## Wheat straw used for the production of green chemicals



Crop

Wheat

*Triticum aestivum*

Croppart

Stem

Application area

Fine chemicals

Status

Research stage

Relevant plant compounds

fibres

Cellulose

## Description




OPTISOCHEM goal is to demonstrate the performances, reliability as well as environmental and socio-economic sustainability of the entire value chains, for the transformation of excess wheat straw into bio-Isobutene (bio-IBN) derivatives. To achieve these goals a team of 6 partners, leaders in their field, originating from 4 EU-member states, will join efforts.

OPTISOCHEM consists in showcasing the technical accessibility and economical sustainability of the value chains, from wheat straw to 2 different families of chemicals derived from bio-based IBN.

These compounds, oligomers (DIB, TIB, TeIB) and polyisobutylenes (PIBs) are currently used in a wide range of applications such as lubricants, adhesives, sealants, flavors & fragrances and substituted phenols. This large market is today supplied entirely by products derived from fossil-based isobutene. Products derived from bio-based IBN, using the same process as fossil-based IBN, and with at least as good performances, would provide a renewable supply.

OPTISOCHEM includes the development & up-scaling of bio-IBN production from wheat straw, followed by the production and validation at relevant scale -representative of commercial, established processes- of the bio-based derivatives.

### Pros and cons

-  Upgrading of residual flows
-  Circular economy
-  New product on a very competing market

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### Used conversion methods

#### Biochemical processes

Aerobic/ Anaerobic fermentation

#### Chemical processes

Hydrolysis

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## Resources

<http://optisochem.eu/> Initiative website