Bioplastics are **biobased and/or biodegradable polymers**. These materials are split into two groups: **biobased polymers** equivalent to existing fossil-based polymers (PE, PET, biobased PA, etc.) and **biobased and/or biodegradable polymers** with innovative structures (PLA, PHA, PBS, PBAT, etc.)

The term “biobased” (in agreement with the norm EN 16575 : 2014) represents a part of material made completely or partially from renewable resources. This part can represent a variable proportion of the material. To this day, there is no established minimum rate that specifies the use of this term.

We can talk about a **biodegradable** material if it can be decomposed and absorbed by micro-organisms (bacteria, fungus, algae, etc.). The result of this process is the formation of water, CO₂ and/or methane and possibly by-products non toxic for the environment (residues, a new biomass). (Technical Datasheets, ADEME, 2012).
Presentation of the company:

2007

**NaturePlast** Bioplastics Expert

SAS with a capital of **163 572 €**

**NATUREPLAST** remains the *only European supplier* of all kinds of bioplastics produced in the world.

Caen (Normandy)

2010

**BiopolyNov** Bioplastics — R&D

**CIR and CII agreement**
(Research and Innovation tax credit)

**SASU** with a capital of **30 000 €**

**BIOPOLYNOV** is the *only R&D center* dedicated to the improvement and modification of bioplastic properties in Europe.

Sales Team

R&D and Production Team
Our goal?

TO SUPPORT OF FRENCH AND EUROPEAN INDUSTRIES
(manufacturers and end users)
in the transfer of technology to bioplastics.
Our areas of expertise:

3 areas of expertise
To support your projects

Service
- Training
- Technico-economical study
- Project engineering

R&D
- Customised formulation
- Characterisation
- Production of compounds

Distribution
- Raw material
- Compounds
Who do we work for?

5 main types of customers we support and advise

- End users
- Technical Centres and Universities
- Current and future manufacturers of bioplastics
- Plastic converters
- Suppliers of fillers (fibres, by-products)
Company history:

2008
First opening of share capital to private equity investment

2007
Creation of NaturePlast (trading activity)

2009
Launch of expertise activities (training, studies)

2010
Creation of BiopolyNov R&D center

2011
Launch of our first French R&D collaborative project « Agroboost »

2012
Launch of our first European R&D collaborative project « Succipack »

2015
Launch of our by-products recovery activity

2017
Opening of capital stock to the AGRIAL group and acquisition of the first industrial compounding line.

2020
Launch of our industrial by-products grinding line
Our three ranges of products:

**RAW MATERIAL**
- bioplastics

**COMPOUNDS**
- bioplastics

**BIOCOMPOSITES**
- fibres and by-products

NaturePlast is the only supplier in Europe providing all biobased and/or biodegradable bioplastics.

NaturePlast produces a range of bioplastic compounds with optimised properties.

NaturePlast produces a range of biocomposites containing natural fibres or by-products from different activities.
Our sectors of activity:

- Agriculture and horticulture
- Pet industry
- Construction
- Cosmetic packaging
- Food packaging
- High Tech
- Luxury industry
- Toys
- Medical
- Stationery
- Disposable products
- Baby product industry
- Plastic bags
- Sport and leisure
- Textiles and nonwoven
- Transport
Our production equipment:

<table>
<thead>
<tr>
<th>Characterisation equipments:</th>
<th>Production equipments:</th>
</tr>
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<tbody>
<tr>
<td>1/ Thermal:</td>
<td>• Laboratory twin-screw extruder (21mm)</td>
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<tr>
<td>• HDT / Vicat (ISO 75 / 306)</td>
<td>• Industrial twin-screw extruder (27mm)</td>
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<tr>
<td>2/ Mechanical:</td>
<td>• Prototyping by extrusion, calendering, blowing</td>
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<tr>
<td>• Tensile / Flexural (ISO 527 / 178)</td>
<td>• Injection machine (80 T)</td>
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<tr>
<td>• Charpy Impact (ISO 179)</td>
<td>3/ Rheologic:</td>
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<tr>
<td>3/ Rheologic:</td>
<td>• MFI (ISO 1133)</td>
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<tr>
<td>• MFI (ISO 1133)</td>
<td>4/ Physico-chemical:</td>
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<tr>
<td>4/ Physico-chemical:</td>
<td>• Shore Hardness (ISO 868)</td>
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<tr>
<td>• Shore Hardness (ISO 868)</td>
<td>• Accelerated ageing station</td>
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<tr>
<td>• Accelerated ageing station</td>
<td>• Water content analysis Karl Fischer (ISO 15512)</td>
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<tr>
<td>• Water content analysis Karl Fischer (ISO 15512)</td>
<td>• Density (ISO 1183)</td>
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<td>4/ Equipment for the valorisation of by-products:</td>
</tr>
<tr>
<td></td>
<td>• Dryer</td>
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<td>• Grinder</td>
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<td>• Micronizer</td>
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<td>• Sifter</td>
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</table>

Thanks to our network of industrials and R&D, we have access to other equipment that help us to finalise/validate our work.
Our expertise:

4 Major thematics in which Biopolynov is specialized.

- Optimisation of bioplastics' properties
- Valorization of by-products
- Modulation of bioplastics' shelflife
- Adding of function to a biopolymer
Our R&D projects by BiopolyNov:

- **Services for clients:**
  - Compounding / Injection / Characterisations
  - Less than a year

- **In-house R&D**
  - In collaboration with NaturePlast
  - Development of new materials by incorporating by-products

**R&D projects** to develop formulations answering to application specifications

In order to remove the **main obstacles** to the development of bioplastics

**Direct services:**
- Compounding / Injection / Characterisations

**100 formulations** developed per year (clients/collaborative projects /in-house R&D)
Our R&D projects - NaturePlast:

Current collaborative R&D projects, NaturePlast being a partner:

- **ALGRIPLAST** – Région Normandie / FEDER – Production of biobased and biodegradable materials based on byproducts
- **INDIGO** – Interreg France Angleterre – Development of biodegradable fishing gear
- **BIOPLASTICS EUROPE** – H2020 BG 2018-2020 IA – Development of biobased and biodegradable solutions
- **URBIOFIN** – H2020 BBI JTI 2016 – Valorization of municipal waste to produce biobased materials (including PHAs)
- **MYPACK** – H2020 SFS 2017 – Development of innovative technologies for food packaging
- **WOW !** – Interreg NWE – Production of biobased materials (including PHAs) using waste water
- **DEEP PURPLE** – H2020 BBI-JTI-2018 – Conversion of urban bio-waste into sustainable materials (including PHAs) by photo-biorefinery process

Finished projects:

- AGROBOOST, SUCCIPACK, NICEDAY, BIOSOURC’AIR, SEAPLAST, COPROPLAST, MATADORE, BIOCOMPLACK, etc.

NaturePlast-BiopolyNov team is task leader for activities which involves modification / optimization of materials:

- Supplier sourcing / Materials supply
- Research and development of formulations
- Compounds production / Injection of test specimens / Characterization