

Bio-Mi

From R&D to Market

Filip Miketa, CEO
Bioeast Conference, 28th of April, 2022

AGENDA

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R&D ACTIVITIES

Company's R&D investments
and activities

03

PROJECT ACTIVITIES

Ongoing projects,
BIC membership



01

THE COMPANY

R&D company dedicated to the production of biomaterials used for primary and secondary packaging and in the agro sector



bio-mi
SUSTAINABLE SOLUTIONS

INTRODUCTION OF BIO-MI COMPANY

Bio-mi is a small and medium-sized manufacturer and research and development enterprise from Croatia

Bio-mi is a synergy of 25 years of industrial manufacturing experience in the field of plastics technology and a young R&D team with strong experience in EU funds and programmes

We are dedicated to the development and production of **biobased, biodegradable and compostable thermoplastics materials and film products** used for the production of primary and secondary packaging applications, agro applications etc.

Bio-Mi is the first producer of certified compostable thermoplastics in Croatia, but also in East and Southeast Europe.

The background of the slide is a photograph of industrial machinery, likely a textile or manufacturing plant. The image is dark and somewhat blurred, with a semi-transparent dark grey overlay on the left side where the text is placed. The machinery includes various components like rollers, belts, and structural frames, with some blue and grey colors visible. The lighting is somewhat dim, creating a professional and technical atmosphere.

02

R&D ACTIVITIES

Company's R&D investments and project activities

MAIN RESEARCH ACTIVITIES

INTERNAL PROJECTS:

Development of the
MI FAMILY OF MATERIALS
(MI3, MI6, MI9)

MI3-Starch based compounds
MI6-PLA based compounds
MI9-PHA's based compounds



RESEARCH PROJECTS:

On a national and international level
Our project priorities are in the framework
of the European Green Deal and the
Circular Bio-based Europe (CBE)



PRIVATE R&D PROJECTS:

With companies and RTO's



Tailor made solutions for:

- Thermoplastic material
- Flexible/semi-rigid films and packaging

TECHNOLOGIES

Activities and processes which we are implementing are at different TRL 3-9

- Twin screw extrusion: reactive extrusion, compounding, blending, compatibilization, grafting
- Cast extrusion
- Mono blow-extrusion & Co-extrusion
- Re-granulation i.e regeneration and mechanical recycling
- Welding/sealing/trimming and rewinding
- Printing/coating



From monomers, natural polymers and bio-polymers to final products and solutions

CHARACTERIZATION

CHARACTERIZATION OF RAW MATERIALS AND OBTAINED MATERIALS

Rheology, physical properties, temperature properties



CHARACTERIZATION OF OBTAINED FILMS

Mechanical characterization of films and conditioning in the chamber with controlled temperature and humidity



PROJECT ACTIVITIES

Active projects, BIC membership

03


MANDALA
Sustainable Multilayer Packaging

 **EFFECTIVE**




USABLE PACKAGING
Bioplastics for the Circular Economy

The development of biodegradable and bio-based plastics is key to implementing circular economy models in the plastics sector.

The **USABLE PACKAGING** project builds an entire value chain for high-performance bioplastic packaging that is both bio-based and biodegradable, derived from food processing by-products and food waste feedstocks.

BREAK-THROUGH IN PLASTIC


A glimpse into...
The Bio-based Industries Consortium (BIC)

Bio-Mi in H2020 PROJECTS- timeline

Setting up a company with a focus on new projects and research activities

2017.



2018.

Project:
Effective H2020



2019.

Projects:
Ecofunco H2020
Mandala H2020
BioOnTop H2020
Usable H2020

2020.

Projects:
NENU2PHAR H2020



UP-PET H2020



2021.

Projects:
UPLIFT H2020



UNLOCK H2020



SUNRISE H2020



SISTERS H2020



2022.
New proposals,
New projects

BBI-DEMO

BBI-RIA

BBI-RIA

BBI-RIA

BBI-RIA



USABLE PACKAGING



Advanced Eco-designed Fibres and Films for large consumer products from biobased polyamides and polyesters in a circular Economy perspective

ECO sustainable multi FUNCTIONal biobased COATings with enhanced performance and end of life options

The transition of MultiLayer/multipolymer packagiNg into more sustainable multilayer/single polymer products for the food and phArma sectors through the develOpment of innovative functional Adhesives

Novel packaging films and textiles with tailored end of life and performance based on bio-based copolymers and coatings

Unlocking the potential of Sustainable BiodegradabLe Packaging

11.869.647 €
TOTAL COST

5.564.436 €
TOTAL COST

4.573.892 €
TOTAL COST

5.447.389€
TOTAL COST

6.427.043 €
TOTAL COST

BBI-RIA

RIA

BBI-DEMO

RIA

DEMO

DEMO-GREEN DEAL



For a sustainable and European value chain of PHA-based materials for high-volume consumer products

UPLIFT, a project to improve the recycling of plastics for the food and drinks packaging industry, kicks off

Unlocking a feather bioeconomy for keratin-based agricultural products

Upcycling of PE and PET wastes to generate biodegradable bioplastics for food and drink packaging

MultiSensor sorting tools in a circular economy approach for the efficient recycling of PVB interlayer material in high-quality products from laminated glass construction and demolition wastes

Systemic Innovations for a Sustainable reduction of the European food waste

6.395.081 €
TOTAL COST

7.640.653 €
TOTAL COST

7.304.952 €
TOTAL COST

7.849.185 €
TOTAL COST

9.499.371 €
TOTAL COST

10.101.117 €
TOTAL COST

PROJECT WORK



EU



- Bio-Mi is currently participating in 11 active H2020 and BBI/CBE projects
- Total value of the projects is 82.675.766 €
- Best performing private partner from Croatia in the H2020 programme (3.667.847 €)
- Every year between 20-30 proposals (last 8 years)
- BBI 2019 + BBI 2020 more than 20 submissions

BIC, BIOBASED INDUSTRIES CONSORTIUM

- Full membership since 2017
- Opportunity to co-create policies and funding priorities within Circular Bio-based Europe Joint Undertaking (CBE JU)
- Participation at Programmning Working Group meetings since 2014
- Collaboration with well known RTOs and companies, networking, networking and networking



CROATIA



Without participation in national funding due to many reasons such as:

- lack of transparency,
- fastest finger method,
- low evaluation standards
- 3 unsuccessful trials
- Trial no. 1&2 Center of competence for bio-economy
- Trial no.3 ESIF call for new companies- evaluators decided that our idea is not worth of evaluation, grant 170 000 Euro

Currently, CBE and H2020 calls as the only and hardest option

For scaling up and commercialisation we should have ESIF funds or some other funding sources

BIO-MI is boosting its capacities

NEW INDUSTRIAL MACHINERY WITH HIGH PRODUCTION CAPACITIES

Future PLAN

Further
Certification of
MI family blends

Deployment
to new
markets

Further
investments in
high capacity
equipment and
other technologies

Building new
facility

Continue research
activities on more
innovative solutions

Bioeconomy today for
sustainable future tomorrow !



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THANK
YOU!

Pictures of blend, film, equipment, etc. used in this presentation were taken at our facility