

**MetGen**

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Sales Director**

# METGEN - A WORLD CLASS BIOTECHNOLOGY COMPANY

- Decarbonization and replacement of fossil-based products with renewable ones while eliminating waste are our core environmental objectives.
- We use modern biotech to enable transition towards bio-based economy for various industries such as chemical, energy, pulp & paper, and food & feed.
- Our technologies reduce GHG emissions > 85% while substituting fossil-based chemicals.
- Our flexible business models make sense to all parties involved.

## PRODUCT PORTFOLIO

10 trademarked  
enzyme families

## PATENTS

18 patent applications  
7 patents granted

## EQUITY FUNDING

11.6 MEUR

## GRANT FUNDING

15.4 MEUR awarded

# METGEN TECHNOLOGIES

- ENZINE™ technology platform for novel biocatalyst development and industrialization.

MetGen's technologies are based on ENZINE™ technology platform combining genetic engineering and biology with ingenious process and chemical engineering.

- METNIN™ refining technology for customer specific lignin, material development.

METNIN™ takes lignin all the way to high-value end-user products.

- These solutions are based on knowledge and skills in


- Synthetic biology
- Genetic- and process engineering
- Industrial biotechnology
- Chemistry
- Customer specific product development and application testing.


# ENZINE® Technology Platform


*Your gateway to next-gen Biocatalyst.*




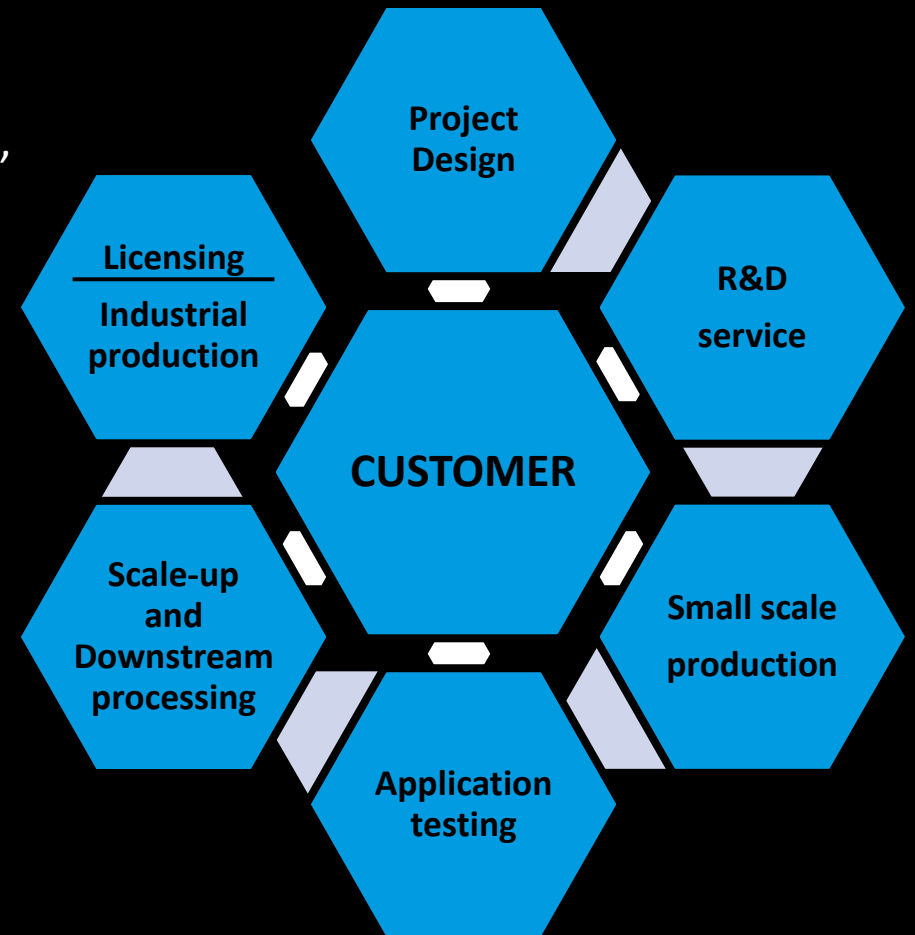
The ENZINE® platform solves bottlenecks with **cost-effective** bioblocks. Through protein optimization, strain engineering, and precision fermentation, we create **Biocatalysts** tailored to your specific needs.

 **Collaborative Development:** We work with you to realize your vision, adapting to your needs at every step.

 **Fast and Flexible:** We understand biotech's urgency. We deliver results quickly, adjusting to the industry's changing landscape.

 **Precision Solutions:** ENZINE® uses specialized hosts for tailored biologics, guaranteeing solutions that perfectly match your project.

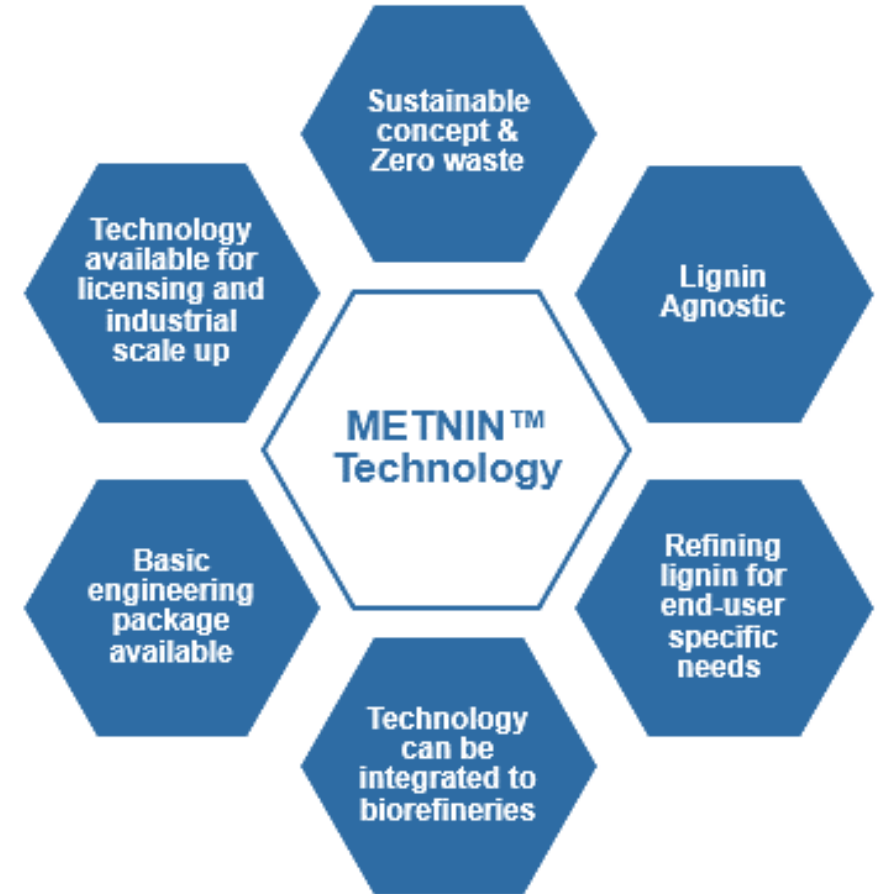
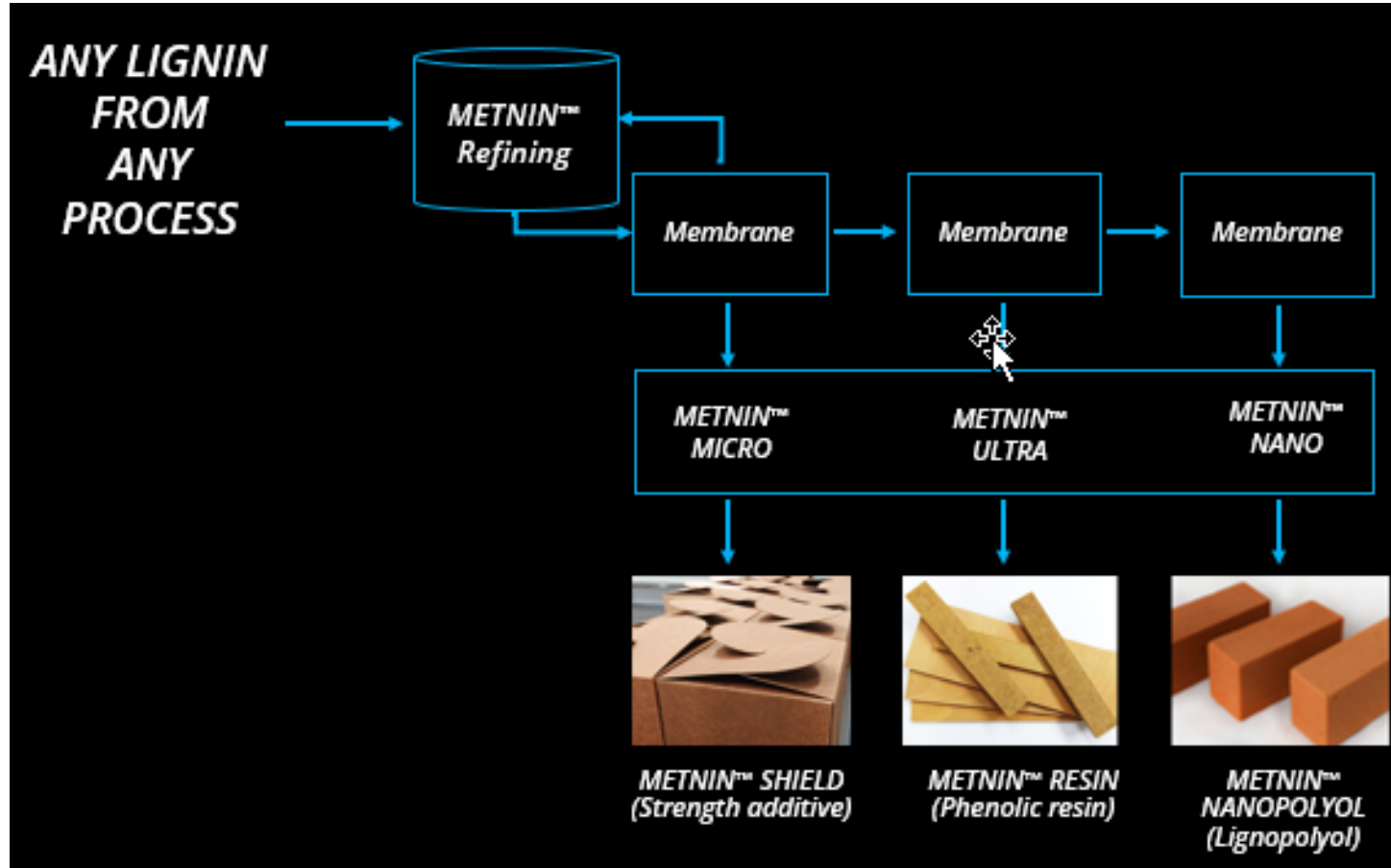
 **Proven Expertise:** ENZINE® leverages MetGen's track record in biotech. Tap into our experience for exceptional outcomes.



# PIONEERING TOMORROW: OPPORTUNITIES WITH ENZINE®

- Licensing for High-Value Biologics Production Systems: Cultivated meat growth factors, etc.
- On-site Enzyme Production for Hydrolysis: Streamlined processes for enhanced efficiency.
- Continuous Hydrolysis Systems: Transforming industry standards with uninterrupted processing.
- From Sugar to Sustainable Plastics: Charting the journey from wood to glucose, fructose, HMFO, and finally to FDCA.
- Biocementation: Integrating biology for sturdier, sustainable construction.
- Tackling Plastic Pollution: Advancing technologies for effective plastic degradation.

## METNIN™ TECHNOLOGY FOR LIGNIN REFINING



# METNIN™ REFINING LIGNIN TO MATCH CUSTOMER NEEDS

- In the oil industry, crude oil is valorised by refining it (fractionation, purification etc).
- Further valorisation formulates petrochemical intermediates into products that are sold on the consumer market.
- **METNIN™ does the same with lignin by making formulated products for the manufacturing of end-user materials.**
- MetGen is running DEMO installation of METNIN™ technology for 5 years, valorized several tons of various lignins for defined end-product targets.
- We are determined to build and operate the lignin-centric biorefinery to deliver the high-value materials in sufficient quantities for selected off-takers.

# METNIN™ SHIELD

- ✓ Complete bio-based strength additive for fibre based packaging papers providing also hydrophobicity to sustain packaging boxes in high humid conditions.
- ✓ Based on specific lignin fraction from METNIN™ process.
- ✓ Performance successfully demonstrated with different lignin feedstocks and on different furnishes.

## EFFICIENT STRENGTH ADDITIVE FOR PACKAGING PAPERS

- ✓ 100% biobased.
- ✓ Increased strength and durability.
- ✓ Improved water/moisture resistant.
- ✓ Replaces conventional strength additives, hydrophobic agents and dyes.



*Application and tests conducted by ICP Pulp and Paper Institute, Ljubljana Slovenia.*



# METNIN™ PRODUCTS ROADMAP

MULCHING FILMS



COATINGS & ADDITIVES



RESINS FOR PAPER LAMINATES



REINFORCEMENT MATERIALS



COSMETICS



BIOBASED FERTILIZERS



3 ready products to start and 30 in the pipeline to improve profitability further



BIOCOMPOSITES FOR TOYS APPLICATION



POWDER COATINGS



INSULATION COMPOSITES





# Thank you!

For further discussion:



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