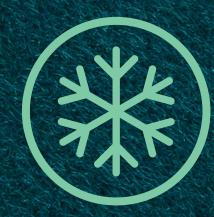


# Extremozymes NATURE'S TOOLS FROM THE EDGE

**EXTREMOPHILES** are microorganisms that thrive in environments previously thought uninhabitable—such as extreme heat, cold, salinity, acidity, alkalinity, or pressure. Their enzymes, known as **extremozymes**, remain active and stable under extreme conditions, making them valuable for both science and industry.

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#### Psychrophiles

Cold-active enzymes for detergents and food processing.

#### Thermophiles

Heat-stable and widely used in PCR (i.e., Taq polymerase).

### Acidophiles

Active in extreme pH levels. Used in mining and leather treatment.

## Halophiles

Adapted to high-salt conditions. Used in producing bioplastics.



Potential for deepsea biotech and highpressure systems.

Eco-friendly

#### THEIR RESILIENCE ENABLES GREENER PROCESSES

Enzymes from extremophiles are up to 5x more stable at extreme pH or temperature than their mesophilic counterparts. High salt tolerance of halophilic enzymes makes them ideal for bioplastic and biocatalysis in saline environments.



Sampling

# 长いので、<br/> 10% ③ >50%

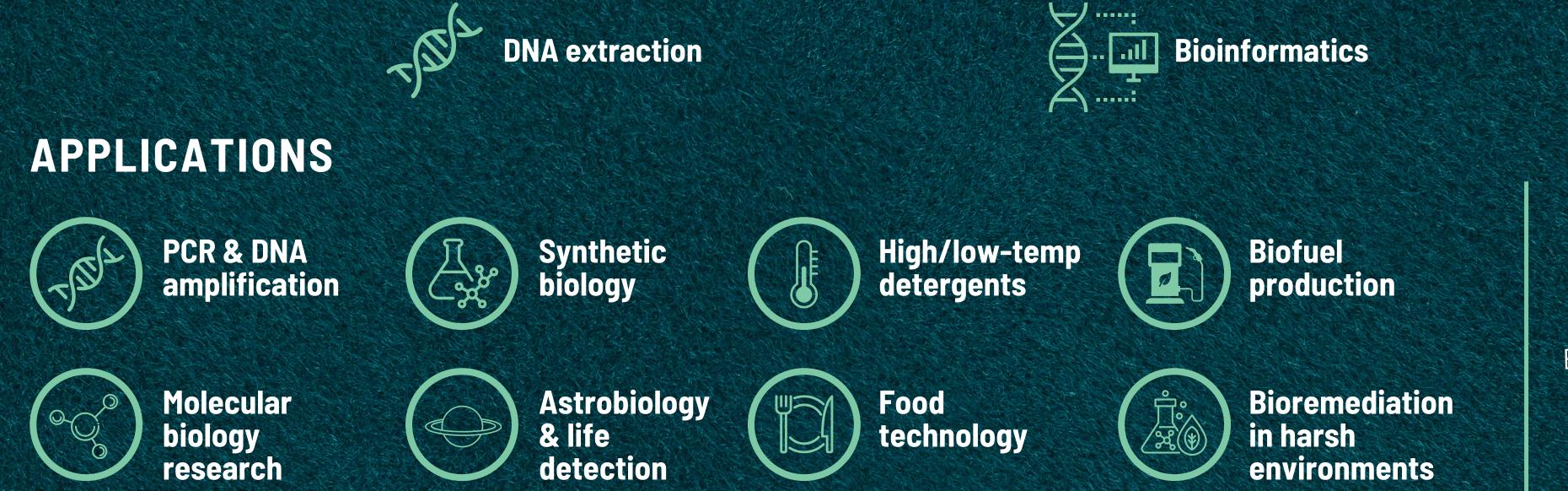
of industrial enzymes come from extremophilic organisms of industrial enzymes are used in extreme conditions





Metagenomics

Protein engineerin



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