



Biotechnology for Textiles

The textile industry is developing well, but there is fierce competition on innovative new fibers and applications and biotechnology is at its forefront. Have a look at what acib has to offer ...

BACKGROUND

Enzymes have been used in the textile industry for a long time: Just to name some examples, there are amylases for desizing of fibres, cellulases for 'stone-washed' fabrics and prevention of pilling, proteases for degumming of silk, catalases for the removal of residual hydrogen peroxide after bleaching or laccases for natural (chlorine-free) bleaching. However, thanks to recent advances in biotechnology, the portfolio of potential applications has been extended significantly.

TECHNOLOGY

acib provides solutions for anti-microbial textiles by attaching proteolytic, polysaccharide-degrading or other enzymes preventing microbial growth and associated problems. acib could further introduce enzymes able to degrade toxic and/or malodorous compounds such as formaldehyde, thiols, sulphides, aliphatic hydrocarbons to provide a health benefit in case of e.g. train/bus/plane seats or indoor textiles. The application of free-radical scavenging enzymes or functional textiles e.g. bandages which could indicate an inflammation by a colour change, provide health benefits. Our expertise in enzyme engineering allows to improve the stability and/or activity of enzymes in the textile industry.

acib can also improve the production of novel fibres e.g. 2,5-furandicarboxylic acid (FDCA), a monomer for polyethylenefuranoate (PEF) by a fungal bio-refinery based on *Trichoderma reesei* for generation of 5-hydroxymethylfurfural (HMF) and subsequent enzymatic oxidation cascades for polymerization to FDCA and PEF or by an improved biocatalytic process from fructose to HMF.

OFFER

Under protection of a CDA/NDA we provide you with professional strategies for the application of your choice. Any IP developed in such a project would fully belong to our investor/industrial partner.



Image: Pixabay

EXPERTS

Prof. Dr. Georg Gübitz
Prof. Dr. Bernd Nidetzky
Dr. Daniel Luschnig
Dr. Bernhard Seiboth

AVAILABLE FOR

- Investments
- Joint Research Projects
- Contract Research

DEVELOPMENT STATUS

Technology Readiness Level 3-5
(Technology validated in lab)

IPR

Will be generated for our
industrial partner / investor

KEYWORDS

- Bio-Textiles
- Enzyme Technology
- Water/Dirt Repellent
- Anti-Microbial features
- Degradation of toxins
- Healthy Fibres
- Fungal Bio-Refinery
- Bioplastic Fibres

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