

CBDMT® - MARKET AND BUSINESS INTELLIGENCE

White Biotechnology : Industrial Biotechnology

White or industrial biotechnology, the use of biotechnology in industrial processes, is a dynamic market which is rapidly gaining priority on the agendas of industrial, political, academic and nongovernmental organizations. This is because white biotechnology offers enormous opportunities, not just for the economy, but equally to our environment and to our society.

Industrial biotechnology is mainly based on fermentation technology and biocatalysis. In a contained environment, genetically modified or non-GM micro-organisms (yeast, fungi, and bacteria) or cell lines from animal or human origin are cultivated in closed bioreactors to produce a variety of goods. Likewise enzymes, which are derived from these organisms, they are applied to catalyze a conversion in order to generate the desired products.

The application of nature's toolset to the production of bio-based chemicals, materials and fuels is key as it will:

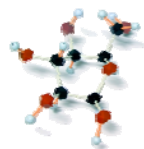
- Have a **strong impact on the environment** allowing substantial reductions of greenhouse gas (17%-65%), of emissions to water and to air and resource usage (renewable feedstock)
- Have an estimated **potential economic value** for the chemical industry alone of €11-22 billion by 2010-2012 (cost reduction, additional revenues and process efficiency increase)

CBDM.T® last focus:



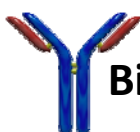
Biofuels

FIRST GENERATION	SECOND GENERATION		TECHNOLOGY
ENERGY DEMAND	ETHANOL	BIODIESEL	MARKET DRIVERS
MARKET SIZE	BIOMASS AND LAND AVAILABILITY		REGULATIONS



Bioproduction

ENZYME MARKET	EU PLAYERS	BIOCATALYSIS	BIOCONVERSION
OLIGONUCLEOTIDES	OUTSOURCING	BIOPLASTIC	MARKET DRIVERS
MARKET SIZE	CMO	EXPRESSION SYSTEMS	



Biopharmaceuticals

MICROBES	BIOLOGICS	INDUSTRY FORECASTS	TECHNOLOGY
MAMMALIAN CELL	OUTSOURCING	MARKET TRENDS	MARKET DRIVERS
MARKET SIZE	TRANSGENIC	RECOMBINANT THERAPEUTICS	

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See also www.cbdm.com