Fraunhofer IPK

Fraunhofer-Institut für Produktionsanlagen und Konstruktionstechnik IPK

Contact

Dr.-Ing. Kai Lindow
Head of the Virtual Product Creation division
Phone +49 30 39006-214
kai.lindow@ipk.fraunhofer.de

Theresa Riedelsheimer
Head of the Sustainable Product Ecosystems department
Phone +49 30 39006-219
theresa.riedelsheimer@ipk.fraunhofer.de

Fraunhofer IPK
Pascalstr. 8–9
10587 Berlin
www.ipk.fraunhofer.de/biofusion40

BioFusion 4.0

Integration of Biological Principles in Industry 4.0

Project Partners:

Mercedes-Benz, budatec, KleRo, BRAL, ARBURG, Werner-von-Siemens Centre for Industry and Science, COLLIN, ModuleWorks, GreenDelta, 5thIndustry, Technische Universität Berlin, Fraunhofer IPA, Fraunhofer IPK, CONTACT Software

SPONSORED BY THE
Federal Ministry of Education and Research
PTKA Project Management Agency Karlsruhe
Karlsruhe Institute of Technology

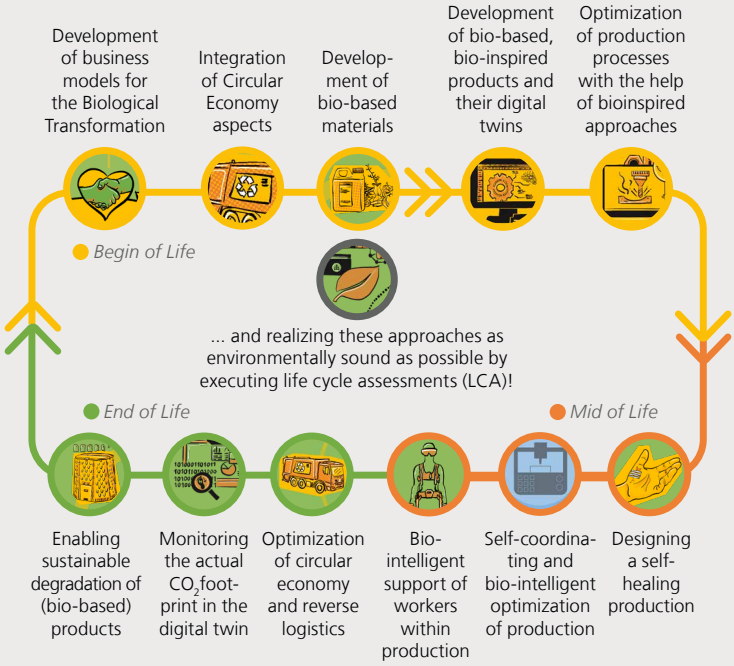
Biological Transformation in Industry

Biological transformation is the transfer of principles of natural systems to technical materials, structures and processes. Its goal is to achieve sustainable value creation. Essential concepts of Biological Transformation are

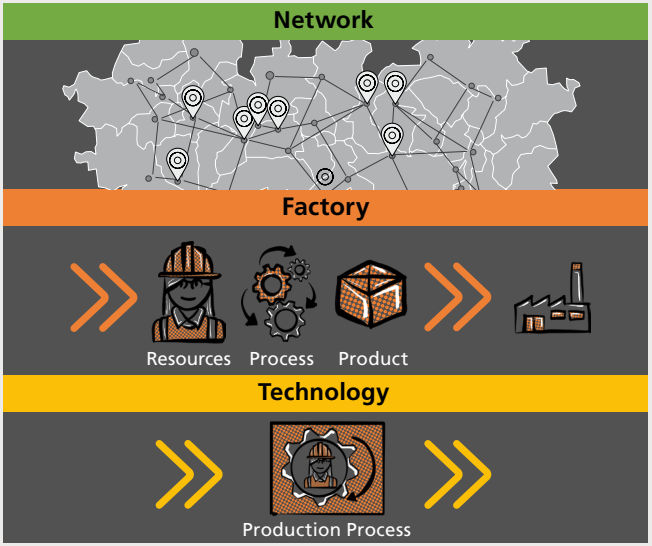
- Inspiration: learning by observing nature for the adaptation of technology
- Integration: symbiosis of technical systems based on biological models
- Interaction: interweaving of nature and technology

The resulting new value creation must be understood systemically. The BioFusion 4.0 researchers are exploring the interdependencies between the principles of biological transformation and their interactions with production, services and work.

Developed Solutions in the Product Life Cycle



BioFusion 4.0 Project Overview



13 Partner	7 Solutions	5 Areas of Application
Application	Business models for biological transformation	Battery control modules for e-vehicles
Technology	Intelligent reverse logistics of valuable materials	Vehicle components
Research	Engineering of biologically transformed products	Reverse logistics and recycling of products and materials
	Bionic integration for networked production systems	Electric drives for industrial applications
	Environmentally intelligent services for production	Robotics automation solutions
	Biointelligent worker assistance systems	
	Additive manufacturing with biogenic polymers	