Expertise profile

Bayreuth Region





Field of expertise New Materials



Key data for the Bayreuth region (dated: 01.01.2014)

Population	176,209 inhabitants
Number of workers subject to social security contributions	65,921 employees
Service and trading companies (Source: Chamber of Industry and Commerce (IHK) – Bayreuth Committee)	3,817 registered companies 6,859 small businesses
Craft businesses (Source: Register of qualified craftsmen, Upper Franconia Chamber of Crafts (HWK))	2,639 HWK-registered companies

Benefits of the region

- The Bayreuth Region is home to an efficient research and development infrastructure, highly innovative companies as well as numerous cooperations and networks.
- The University of Bayreuth is among the most successful universities in Germany and is primarily characterised by cross-discipline research and a close cooperation with business. Of all nine research disciplines, three focus on new materials.
- Internationally significant technology location: Faculty of Engineering Science, Neue Materialien Bayreuth GmbH;
 Start-up Center of Bayreuth (1,200 m²); special area dedicated to research and development.
- Institute with proven competence in materials (Friedrich-Baur-Forschungsinstitut f
 ür Biomaterialien FBI, Bayreuth Center for Colloids and Interfaces – BZKG).
- Fraunhofer project groups (process innovation and ceramic composites) since 2006.
- Two Fraunhofer centres as of 2015: High Temperature Materials and Design (HTL) and Process Innovation.
- The Bayreuth Center for Material Science and Engineering (BayMAT) has been a central scientific institution of the University of Bayreuth since 2006. Focus: Transfer of research results into application.
- Development of a technology axes in close proximity to the university and Neue Materialien Bayreuth GmbH;
 includes 50,000 m² available for settlements.
- Extension of the university to the south (Technology Alliance of Upper Franconia).

Sector highlights

- Major project "Green Factory Bavaria in Bayreuth", an innovative demonstration, educational and research
 platform for energy-efficient production. The Free State of Bavaria supports the Frauenhofer "Process Innovation"
 project group at the University of Bayreuth.
- Start-up Center of Bayreuth provides the best possible start-up conditions for young and ambitious companies active in the area of new materials (current occupants include preccon Robotics GmbH, who convert standard industrial robots to precision machines, and FutureCarbon GmbH)
- ax-lightness GmbH [headquartered in Creußen], development of extremely light and stable components for automotive and bicycle applications. Introduced the lightest racing cycle brake in 2003; the lightest racing cycle handlebar in 2004; the lightest stem in 2006; and the world's lightest racing cycle frame in 2009.
- Frenzelit Werke GmbH, headquartered in Bad Berneck, development and production of high-tech products including gaskets, technical textiles, expansion joints, insulation and new materials.
- Neue Materialien Bayreuth GmbH
 Research company active in process and materials optimisation for plastics, metals, and fibre-reinforced composites as well as component testing and materials analysis.

Field of expertise New Materials





Regional value creation

University facilities

- University of Bayreuth, **Faculty of Engineering** Science
- Frauenhofer Center for **High Temperature Materials and Design** (HTL)
- Friedrich-Baur-Forschungsinstitut für Biomaterialien (FBI)
- **Bayreuth Center for Colloids and Interfaces** (BZKG).

Other

Research services provider for innovative material and process development of lightweight constructions (NMB)

Technologies

- **CNC** machine tools
- Five-axle technology
- Laser technology
- Casting technology (investment casting processes, casting technology, wax cutting)
- Lightweight cycle construction with carbon

Machines

- Gas turbines for industry and aerospace
- Turbochargers
- Moulds and tools for plastics processing
- Mechatronics solutions for the textile machines, coupling systems and industrial robots sectors
- Jacquard, dobby and carpet weaving machines

Service and marketing

- Technology transfer between research, NMB and industry
- Monthly lectures by NMB, trade fair participation, symposia

Company references

- Advanced Aerofoil Technologies GmbH [headquartered in Bayreuth], leading manufacturer of investment casting components for the energy and transport industries.
- Future Carbon GmbH specialises in the development and manufacturing of carbon-nano materials and their processing to so-called "Carbon-Super-Composites" as upstream products for the processing industry.
- Schlaeger Formentechnik Bayreuth GmbH [headquartered in Bayreuth] Moulds and tools for plastics processing.
- Sigmund Lindner GmbH, leading manufacturer of technical glass beads, ceramic beads and decorative glitter.
- BAIER+KÖPPEL GmbH+Co.KG [headquartered in Pegnitz], leading supplier of centralised lubrication, environmental, monitoring and telematics technologies.
- KSB AG [plant in Pegnitz], worldwide supplier of pumps, valves and related systems.

Networks

- AVK Industrievereinigung Verstärke Kunststoffe e. V., www.avk-tv.de
- epp-forum, www.epp-forum.com
- Kunststoffnetzwerk Franken e. V., www.kunststoff-netzwerk-franken.de
- Kompetenzzentrum für neue Technologien im Handwerk, www.hwk-oberfranken.de

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