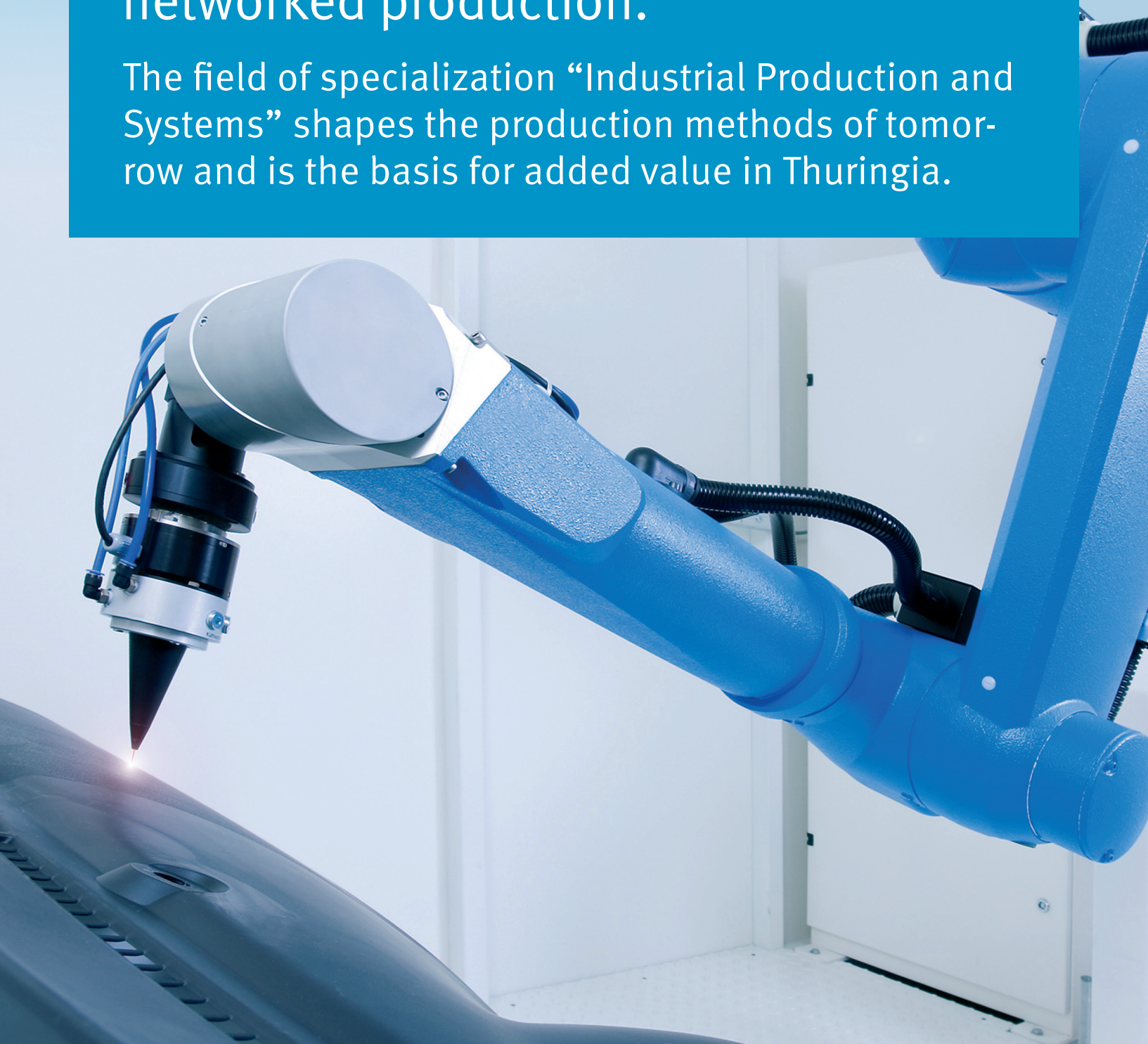




Efficient, flexible, ergonomic and networked production.

The field of specialization “Industrial Production and Systems” shapes the production methods of tomorrow and is the basis for added value in Thuringia.



The field of specialization “Industrial Production and Systems”.

As part of the process of elaborating the Thuringian Innovation Strategy (RIS3 Thuringia), more than 500 stakeholders from academia, the economy, and intermediary sectors came together to identify the most promising future growth fields that Thuringia has to offer. They concluded that “Industrial Production and Systems” is one of Thuringia’s five “fields of innovation” and thus a mainstay of the region’s future economic success.

Thuringia is a technologically advanced, internationally recognized production region. An interdisciplinary approach, competitive infrastructure, flexible responsiveness to evolving market demands, and a strong capacity for innovation – these are the foundations of the region’s success. The field of specialization “Industrial Production and Systems” is a growth driver for Thuringia, one that will enable the Free State to create and maintain

jobs while allowing for aging populations, growing resource scarcity and the central role played by people in the production process, particularly in the wake of digitalization. At roughly EUR 17 billion in annual turnover, this is Thuringia’s single most important sector, one that accounts for about 25% of the Free State’s total economic output.

Specialization profile as defined in the Thuringian Innovation Strategy



Mechanical, systems & tools engineering

- › Production technologies
- › Machine tool manufacturing & tool making
- › Control technology
- › System integration
- › System simulation
- › Automation technology



Plastics processing industry

- › Automotive supply
- › Lightweight construction
- › Medical devices
- › Packaging
- › Components for the electronics industry
- › Finishing of buildings/ furniture
- › Tool making
- › Rapid technologies



Optics/photonics

- › Optical devices
- › Measurement equipment
- › Components
- › Systems



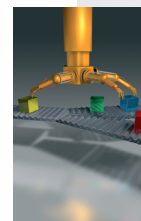
Micro/ nano-technology

- › Micro-systems technology
- › Functional nano-materials
- › Precision technology
- › Micro/nano-structuring



Materials & materials systems

- › Glass
- › Polymers
- › Ceramics
- › Metals
- › Smart textiles
- › Composites
- › Raw materials, salts (application/research -oriented)



Sensors & robotics

- › Bio-sensors
- › Quality monitoring
- › Measurement systems
- › Apparatus engineering
- › Control & regulation technology

The specialization profile serves as the baseline for implementing the Innovation Strategy and will be fine-tuned over time.

The Working Group.

Thuringian stakeholders are working together closely in an effort to find common solutions to the pressing challenges of our times. The members appointed to the Working Group meet regularly to further develop their field of specialization while generating suitable recommendations for action.



“Collaborations are very important for SMEs. In the Working Groups, we can take a strategic view and build industry connections that are a good fit.”

Dr.-Ing. Martin Schilling
(3D-Schilling GmbH),
Working Group Spokesman



“Our interdisciplinary cooperation in the Working Group allows us to advance the Free State’s sustainable innovations.”

Prof. Dr. Andreas Tünnermann (Fraunhofer Institute for Applied Optics and Precision Engineering
Deputy Working Group Spokesman.

The Working Group has defined three key targets for making this vision for the future a reality:

Smart Networked Production

By 2020, Thuringia is to become a region of competence for smart, networked production with suitably adapted interaction between humans and machines.

Flexible & Efficient Processes, Systems, and Technologies

By 2020, Thuringia is to become a leading European region for the development and application of flexible and efficient processes and systems, as well as for the technologies used in customized products.

Smart Production Monitoring & Control

By 2020, Thuringia is to become a globally established region with respect to sensors and measurement technology for industrial production.

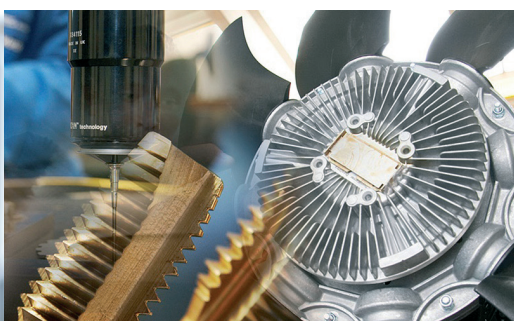
i You, too, can get involved! Visit our forum events or join the discussion on the forums of our online platform:

- Efficient and Flexible Processes, Technologies and Systems
- Production Monitoring and Control
- Production/Industry-Oriented Pre-Developments
- Economy 4.0

Discussion platform and forum calendars



@ www.cluster-thuringen.de/mitmachen



Thuringian networks.

ELMUG eG

This network brings together developers, manufacturers, suppliers, service providers, and research institutes active in the area of measurement technology and equipment engineering. The network's mission is to help expand and consistently enhance this industry, one of Thuringia's core industries, not only at the national level but also relative to international competition.

FerMeTh

This is the cluster for production technology and metals processing in Thuringia. The FerMeTh network brings together Thuringian enterprises along the entire value-added chain for metalworking & metal processing and mechanical engineering. Other members include research and academic institutions active in the production technology segment. The mission is to capture market opportunities for the long term and to secure competitiveness in a sustained manner, both regionally and – to an increasing degree – globally as well.

MNT Mikro-Nanotechnologie Thüringen e.V.

This network fosters the Free State's potential in micro/nano-technology research and applications. Its mission is to establish micro-system technology and nano-technology as Thuringia's industries of the future, ones whose positive spillover effects will be felt in practically all economic sectors well beyond the Erfurt-Ilmenau-Jena technology triangle.

OptoNet e.V.

This network bundles the interests of more than 90 stakeholders from the Thuringian optics (opto)cluster. OptoNet promotes networked cooperation and joint ventures among its members with the goal of advancing the development of optical technology in the region, while also boosting the cluster's competitiveness and national/international visibility.

PoylmerMat e.V

This network bundles the interests of companies in the Thuringian plastics industry and works closely with regional

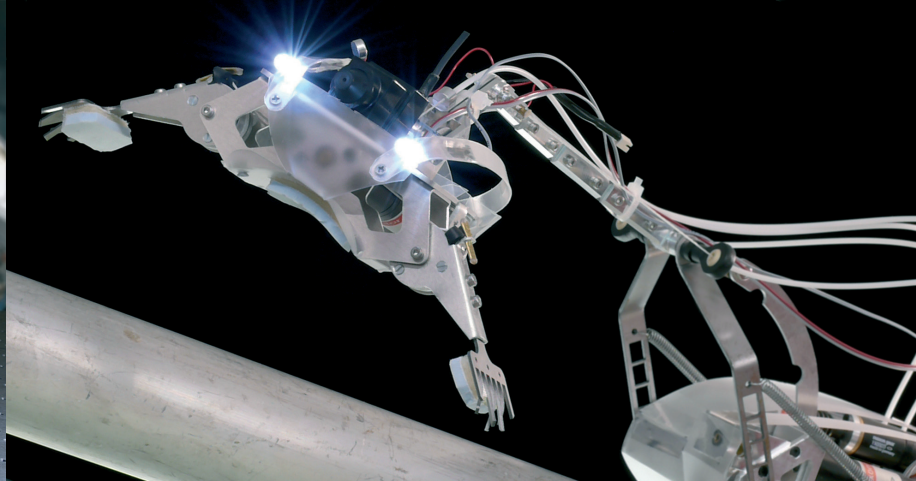
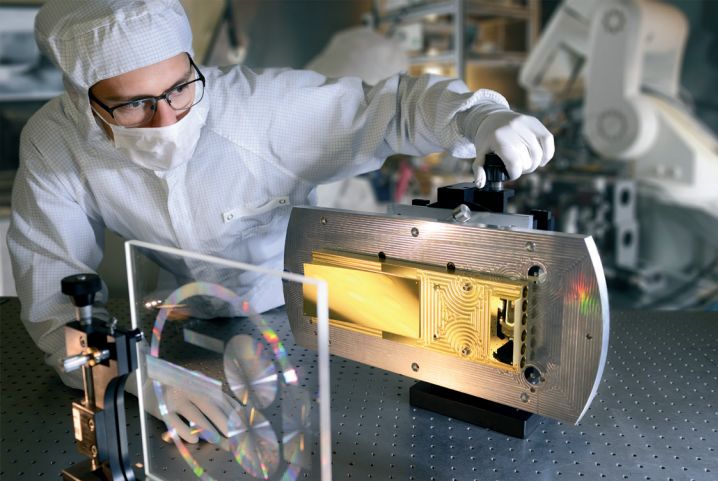
networks. It offers a platform for communication and collaboration among these companies when it comes to innovation, product development, and the implementation of new leading-edge technologies.

SmartTex-Netzwerk Thüringen

Electrode-fitted shirts that monitor bodily functions, textile-based solar cells, smart aids for people with disabilities – just a few of the new ideas promoted by SmartTex-Netzwerk Thüringen. The network also launches joint venture projects and organizes the sharing and transfer of knowledge between the research community and industry, e.g. by conducting cross-sectoral workshops, seminars, and symposia.

SpectroNet

Using modern communication formats, this network connects stakeholders from the most varied sectors and segments who share an interest in visual quality assurance by means of digital color-image processing and spectral imaging.



Success, made in Thuringia.

Thuringia's innovative capacity in the field of "Industrial Production and Systems" is best evidenced by the many success stories attributable to the regional associations, networks, and enterprises active in this field. Here are just a few:

Wachstumskernel - Partikeldesign Thüringen

This initiative brings together 17 small and medium-sized firms and institutes active in the field of particle synthesis and materials development, the goal being to bundle their innovative capacities so as to create a comprehensive portfolio of materials-development services. The project has attracted funding from the Federal Ministry of Education and Research (BMBF) in the amount of approximately EUR 13 million.

The "Zwanzig20-Konsortium 3Dsensation"

This successful consortium is headed by the Fraunhofer Institute for Applied Optics and Precision Engineering (IOF) in Thuringia. Its mission is to fundamentally change the way in which humans and machines interact. Thus, people's dealings with machines and all other technical systems are to evolve to become more natural and intuitive, while being safe and efficient.

Thüringer Zentrum für Maschinenbau (ThZM)

The center bundles the competences of

various partners from the Thuringian mechanical engineering industry while promoting cross-institutional cooperation. In the process, ThZM helps to develop collaborative contacts to regional and trans-regional partners in the business, scientific, and research communities.

The "MIT – Material innovativ THÜRINGEN" platform

This platform's mission is to represent the interests of stakeholders across industries, especially SMEs, insofar as materials are involved. Thus, the MIT bundles and organizes the materials-related activities of clusters, regional networks, individual companies, and research institutes in Thuringia. It has also initiated successful growth initiatives sponsored by the Federal Ministry of Education and Research (BMBF), such as "pades".

Deutscher Zukunftspreis

In December of 2013, a team composed of Prof. Dr. Stefan Nolte (FSU Jena / Fraunhofer IOF), Dr. Jens König (Bosch), and Dr. Dirk Sutter (Trumpf) was awarded the 2013 Deutscher Zukunftspreis for their development of ultra-short-pulse lasers.

Selected companies

3D Schilling GmbH, Oberspier

asphericon GmbH, Jena

AWM Arnstädter Werkzeug- und Maschinenbau AG, Arnstadt

Barat Ceramics GmbH, Auma-Weidatal

BN Automation AG, Ilmenau

Docter Optics SE, Neustadt an der Orla

EJOT GmbH & Co. KG, Tambach-Dietharz

EPSa Elektronik & Präzisionsbau Saalfeld GmbH, Saalfeld

Glatt Ingenieurtechnik GmbH, Weimar

GRAFE Color Batch GmbH, Blankenhain

Häcker Automation GmbH, Schwarzhäuser

imbut GmbH, Greiz

Jena-Optronik GmbH, Jena

JENOPTIK AG, Jena

j-fiber GmbH, Jena

Maximator GmbH, Nordhausen

Micro-Hybrid Electronic GmbH, Hermsdorf

SAMAG, Saalfelder Werkzeugmaschinen GmbH

Schuler Pressen GmbH, Erfurt

Schuster Kunststofftechnik GmbH, Waltershausen

Sumitomo (SHI) Demag Plastics Machinery GmbH, Wiehe

TETRA GmbH, Ilmenau

X-FAB Semiconductor Foundries AG, Erfurt



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