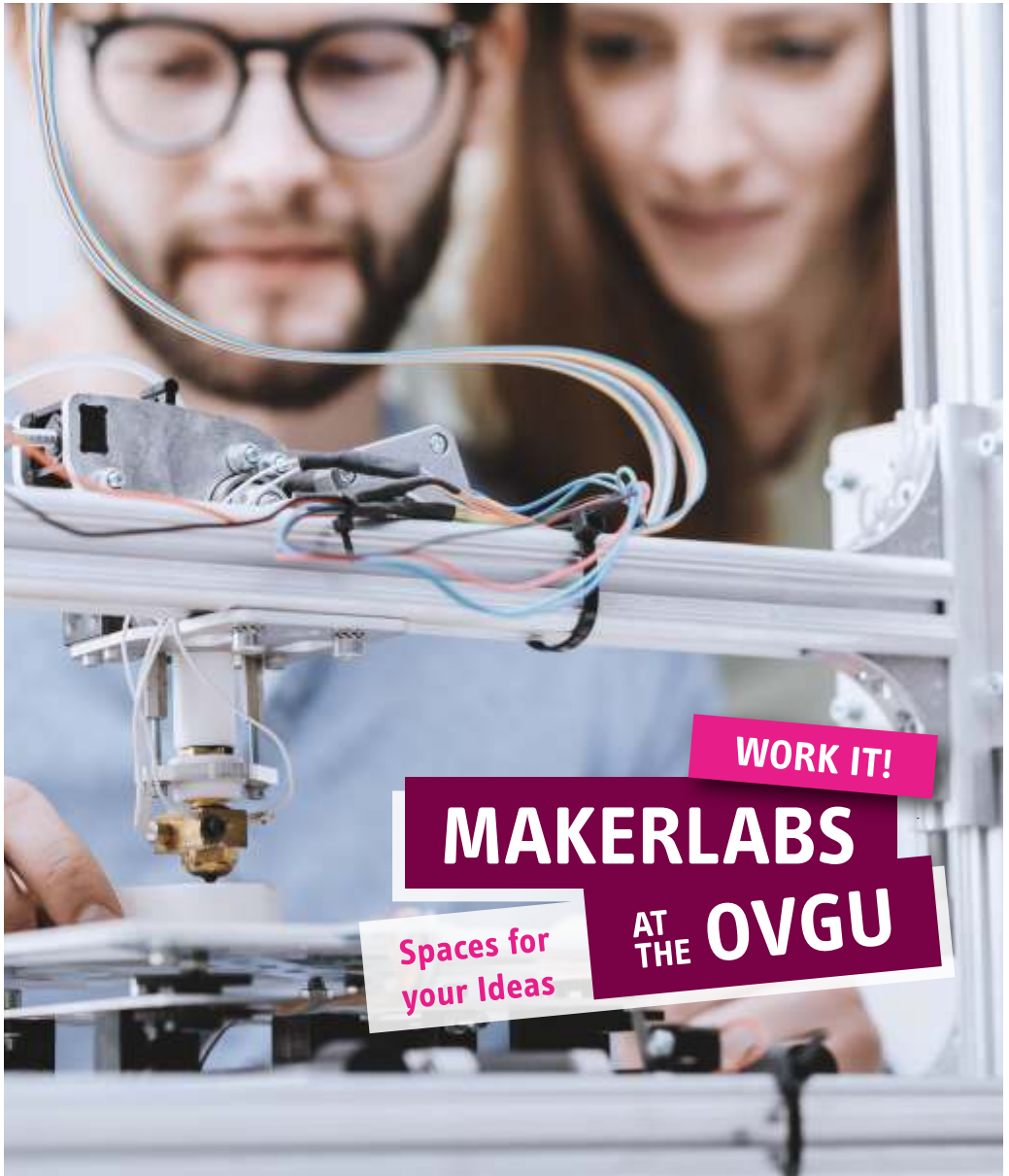




MakerLabs

www.makerlabs.ovgu.de



WORK IT!

MAKERLABS

**Spaces for
your Ideas**

**AT
THE OVGU**

Image: Stokete/shutterstock.com



OTTO VON GUERICKE
UNIVERSITÄT
MAGDEBURG

TUGZ

TRANSFER AND
ENTREPRENEUR CENTRE



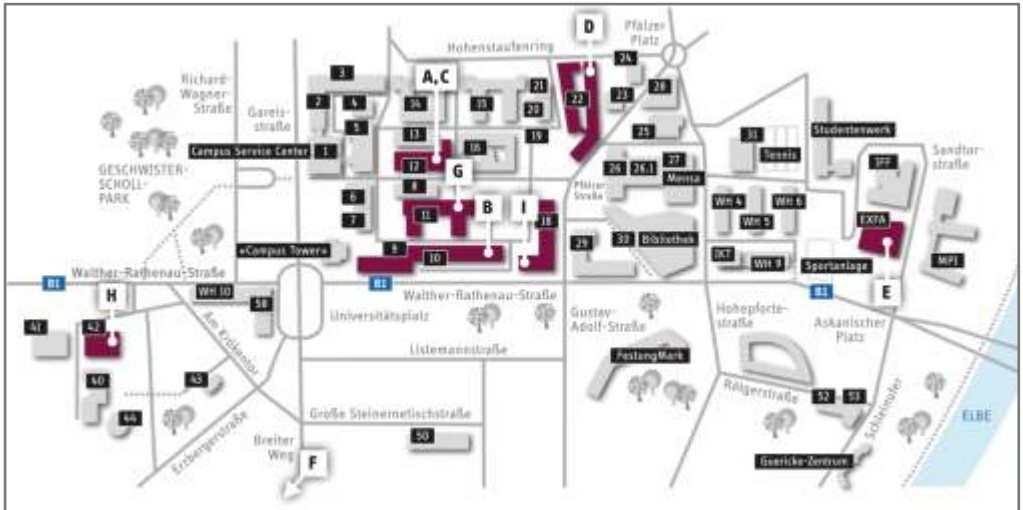
SACHSEN-ANHALT



EUROPÄISCHE UNION
EFRE
Europäischer Fonds für
regionale Entwicklung

WHERE DO I FIND THE RIGHT LAB?

Campus Universitätsplatz



- | | | |
|---|---|--|
| (A) ADDITIV+
Metal 3D Printing
G12, Room 005 | (D) FinTech
Financial Services
G22A, Room 004 | (G) IP-LogMo
Logistics & Mobility
Machinery Room 11.2 |
| (B) AWI-Lab
Work Sciences Laboratory
G10, Room 043 | (E) FLEXtronic
Flexible Printed Boards
ATTENTION: CHANGE OF LOCATION! | (H) Performance Lab
Diagnostic & Training Equipment
Sports Hall 2, Test Room 2 |
| (C) FabLab
Rapid Prototyping
G12, Room 005 | (F) InnoLab IGT
Medical Technology
University Hospital Block 65, Zenit 1 | (I) Transfer and Entrepreneur Centre (TUGZ)
Services for start-ups, entrepreneurs, and scientists G18, 5. OG |

Image: OVGU

BACKGROUND

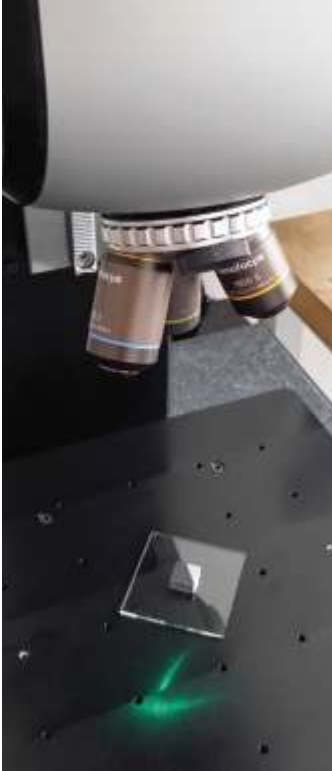
The **MakerLabs** at Otto von Guericke University Magdeburg are ego-INCUBATORS funded by the state of Saxony-Anhalt. In the prototype and startup workshops, students and research assistants from any university, non-university research institutions, and universities of applied sciences in the state of Saxony-Anhalt can familiarise themselves with equipment, technologies/procedures, and organisational workflows in practice and advance their own ideas to the point of setting up in business.

REQUIREMENTS FOR PARTICIPATION

- Idea for a new product, a new service or an innovative process
- Project presentation with objectives and timeframes
- Students or research assistants at a university or academic institutions in the state of Saxony-Anhalt
- Not pursuing a commercial activity

CONTACT

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Transfer and Entrepreneur Centre | Incubator Officer: Dr. Ingo Böhlert | G18, Room 507
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Images: OVGU

BACKGROUND

With its Selective Laser Melting system, **Additiv+** provides the opportunity to manufacture fatigue endurable and heavily stressed components from steel, aluminium, CoCr or even titanium. The lab targets the fields of mechanical engineering, materials engineering and medical technology. The provision of surface finishing equipment and optical measuring devices enables continuous quality control.

POSSIBILITIES/FACILITIES

- Additive manufacturing in metals
- Residual stress measurement via x-ray diffractometer
- Surface analysis with confocal microscope
- Vibratory finishing system
- Drag finishing system
- Electropolishing equipment

CONTACT

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Image: Jana Dünnhaupt/OVGU



BACKGROUND

The **AWI**-(Work Sciences-) **Lab** provides the infrastructure for developing and testing innovative product, process, and service solutions in the “Working Environment 4.0” field. Under the expert supervision of the Department of Work Science, interested students are given the opportunity to make their business ideas reality within the pre-startup phase. Oriented towards the key markets of Machine and Plant Construction and Healthcare and Nursing, the focus in the **AWI-Lab** is on the different possibilities for the respective scenarios.

CONTACT

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POSSIBILITIES/FACILITIES

Assembly 4.0:

- Collaborative Robot (Rethink Robotics: Sawyer)
- Motion capture system (Xsens: MVN Link)
- Camera- and sensor-supported assembly workstations

Healthcare 4.0:

- Exoskeleton (German Bionic: Cray X)
- Smart floor (Future Shape: SensFloor)

Collaboration 4.0:

- AR-/VR-Technology (Microsoft: HoloLens, Samsung: Odyssey)
- 360°-3D-Camera (Insta360: Pro 2)
- Various digital aids (tablets, smartphones, smartwatches)

FabLab – FABRICATION LABORATORY

Manufacturing laboratory for the production of display and functional models



Images: Chris Rößler/OVGU

BACKGROUND

The **FabLab** is the Swiss Army knife of the Maker Labs. Equipped with a multitude of digital and conventional manufacturing machines, the **FabLab** is ideal for low to mid-threshold product developments in the fields of mechanical engineering and mechatronics. Based on the first FabLab of Professor Neil Gershenfeld, the prototype workshop strives to adjust to the needs of users continually and to implement new manufacturing potential from the maker and hacker scene into its own machinery pool.

CONTACT

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POSSIBILITIES/FACILITIES

- Rapid Prototyping via 3D printing (FFF/FDM, SLA, Polyjet)
- CNC milling and turning
- Water jet cutting
- Laser cutter
- Hand tools and assembly workstations
- Rapid tooling and manufacturing via injection moulding machine
- Small soldering workstation
- Various electrical hand tools
- CAD and CAM workstations
- 3D scanning via a hand scanner

FinTech – FINANCIAL TECHNOLOGY

Real-world laboratory at the interface between technology and finance



Images: Guido Henkel

BACKGROUND

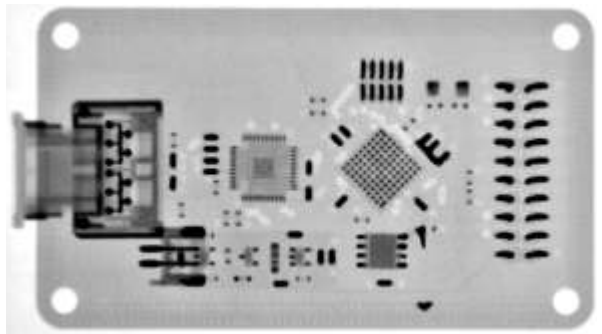
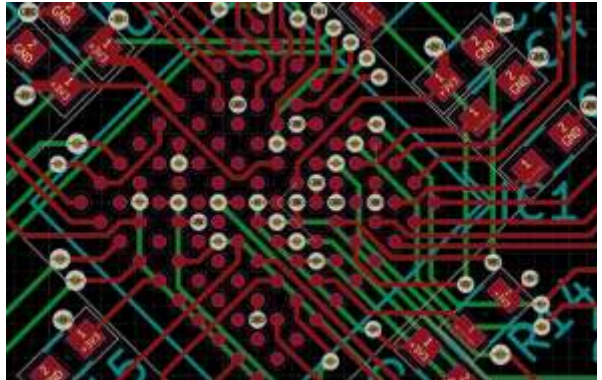
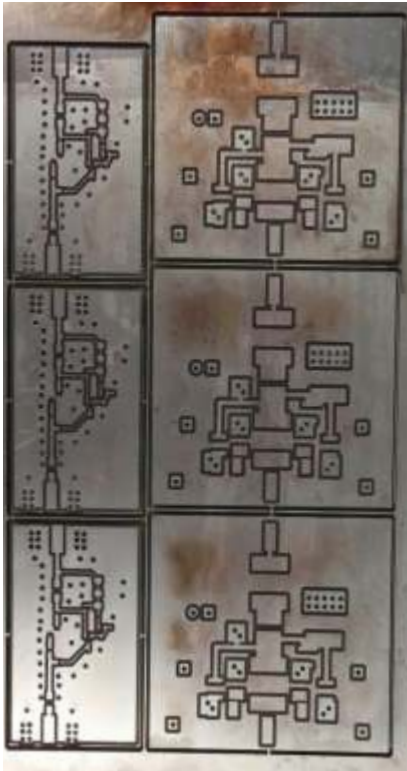
The **FinTech** – Financial Technology Maker Lab is a real-world laboratory for the development and testing of innovative concepts and potential solutions. In future, the progressive digitalisation and increasing acceptance of cryptocurrencies, especially blockchain technology, will have a considerable influence on the real industrial and banking sectors. The aim of the **FinTech** lab is to support the development of relevant new product and service ideas in the field of financial technologies. To this end, the use of state-of-the-art hardware and software applications is consistently advanced.

CONTACT

Otto von Guericke University Magdeburg
Chair of Business Administration, esp. Innovation and Financial Management & Innovation
Finance | G22A, Room 004
Universitätsplatz 2 | D-39106 Magdeburg
+49 391 67-50170 | fintech@ovgu.de | www.tugz.ovgu.de/FinTech

POSSIBILITIES/FACILITIES

- Development and use of blockchain/smart contract system solutions
- SIX Financial Service (Zurich) capital market licence
- MATLAB/Simulink (1 x commercial licence)
- Prototype solar plant Smart Grid/Smart Metering
- 8 PC work areas plus a dual-monitor PC workstation for commercial use
- Raspberry Pi 4
- 2 x high-performance computers for deep learning and AI applications



Images: OVGU

BACKGROUND

Attention: Change of Location!

From January 2020 FLEXtronic is moving to its new building in the 'Science Harbour' ('Wissenschaftshafen').

For enquiries and registration please contact the TUGZ directly during this time. Your contact person during this period is Dipl.-Wirtsch.-Ing. Jonas Crackau.

An overview of the equipment and machinery available in the laboratory can be found here:
www.tugz.ovgu.de/Flextronic.html

CONTACT

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INNOLAB IGT – IMAGE GUIDED THERAPY

Innovation laboratory for the development of tools and equipment for image guided therapy

IGT INNOLAB
ego.-INKUBATOR



Images: Chris Rößler/OVGU

BACKGROUND

The concept of the InnoLab IGT (Image Guided Therapy) Maker Lab follows a combination of “design thinking” and the BIODESIGN concept from Stanford University (identify, invent and implement) of so-called “unmet clinical needs”. Initially, the NEEDS are identified in close cooperation with clinical users. Then a subsequent translation of ideas for possible solutions are devised and tested for practical suitability in the IGT incubator. In addition to creative office for brainstorming, a lab for electronics and prototyping, there is a simulations operating room for test and evaluation.

CONTACT

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POSSIBILITIES/FACILITIES

Simulations Operating Room:

- Endoscopy (Olympus)
- Ultrasound (Clarius, GE, Well.D)
- Tracking (Brainlab)
- Navigation (Piur Imaging)
- RF Generator
- Robotic arms (Franka Emika)

Prototyping Lab:

- 3D printing
- Tools for mechanical and electronic processing
- Measurement and test benches
- Phantoms/phantom construction

Creative Office:

- Individual and group workstations
- Smartboard
- PCs



Images: Judith Zadek/OVGU, Chris Rößler/OVGU

BACKGROUND

The IP-LogMo – Intelligent Prototypes for Logistics and Mobility – MakerLab has portable machine tools, a very well-equipped prototype assembly area for aluminium and steel processing, plus a prototype workshop with hand tools. The MakerLab provides the conditions for producing prototypes for intelligent transport and mobility solutions as well as for intralogistics, for example.

CONTACT

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POSSIBILITIES/FACILITIES

Countless possibilities for metal and wood processing, including:

- Aluminium- & steel welding
- Grinding of tubes and sheet plates
- Chamfering of sheet plates
- Bending of tubes

Various machines for tube, sheet and wood processing, including:

- combined tube, profile and belt sander
- Notching machine
- Folding machine/sheet metal bender
- Pipe bending machine
- Routing machine
- Plasma cutter
- Workshop/indoor cranes
- Lifting table and workbenches

Performance Lab

Workspace & laboratory for testing and development of innovative ideas in the field of human performance



Images: Harald Krieg/OVGU

BACKGROUND

The **Performance Lab** offers the infrastructure for testing and developing innovative methods as well as diagnostic and workout devices for measuring and/or enhancing human physical capabilities.

The laboratory's objective is to support the founding of ventures offering products or services in the field of human performance.

CONTACT

Otto von Guericke University Magdeburg
Institute 3 - Sports Science
Zschokkestr. 32 | D-39104 Magdeburg
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POSSIBILITIES/FACILITIES

Neurophysiology and Perception:

- Neuro-feedback (HEG)
- Mobile EEG
- Eye tracking

Psychological Diagnostics:

- Concentration tests
- Intelligence tests

Sports Science Diagnostics:

- Electromyography (EMG)
- Motion capturing
- Biofeedback - breathing sensor technology
- Lactate measurement
- Functional movement screening
- Heart rate variability & ECG



Image: Shutterstock

BACKGROUND

The **Transfer and Entrepreneur Centre** at Otto von Guericke University Magdeburg coordinates the knowledge and technology transfer of the university and in particular has the objective of transferring high-potential research findings into the regional and national economy and making them accessible for all market participants. It facilitates contacts and markets the results of research. Furthermore, it supports spin-off companies in all stages of the startup process.

CONTACT

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POSSIBILITIES/FACILITIES

- Individual consultancy on startup matters
- Upskilling through training sessions, workshops and coachings
- Creative workspace through various coworking programmes
- Application for property rights and exploitation of research results
- Marketing of innovations at trade fairs and exhibitions
- Facilitating partner contacts via networking events, specialist conferences, competitions
- Coordination of the OVGU MakerLabs

IMPRESSIONS



IMPRESSIONS



Images: Harald Krieg/OVGU, Stefan Berger/OVGU, Chris Rößler/OVGU

IMPRINT

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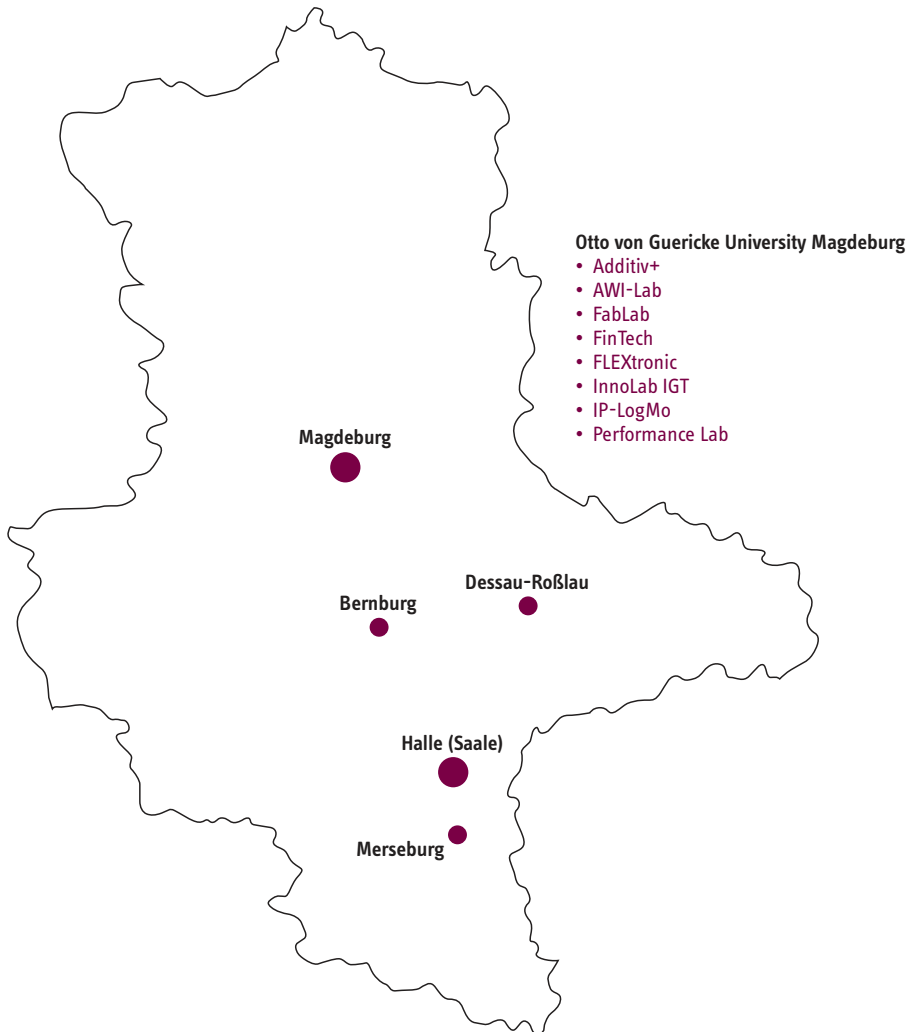
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IN DIE ZUKUNFT UNSERES LANDES.**

www.europa.sachsen-anhalt.de

OVERVIEW OF ALL ego.-INCUBATORS IN THE STATE OF SAXONY-ANHALT



Magdeburg-Stendal University of Applied Sciences

- Competence in Quality (Magdeburg)
- Medical Technology (Magdeburg)
- Material Surfaces (Magdeburg)
- Friction Welding / Industry 4.0 (Magdeburg)

Anhalt University of Applied Sciences

- Image.Knowledge.Gestaltung (Dessau-Roßlau)
- Hybrid AR-VR Lab (Bernburg)
- User Experience and Resilience (Bernburg)

Martin Luther University Halle-Wittenberg

- Startup Workshop Life Sciences (Halle/Saale)
- Startup Workshop NanoWerk (Halle/Saale)
- Incubator IT & Media (Halle/Saale)
- Incubator Nutrition & Agricultural Technology (Halle/Saale)

Merseburg University of Applied Sciences

- Startup Workshop Rapid Prototyping

OVERVIEW OF ALL ego.-INCUBATORS IN THE STATE OF SAXONY-ANHALT

Magdeburg-Stendal University of Applied Sciences

Competence in Quality	The laboratory is used to develop new surface properties (area for modern technical measuring technology).
Medical Technology	The laboratory aids the creation of optimum process chains in medical technology.
Material Surfaces	The laboratory makes available resources for specific surface technology and diagnostics.
Friction Welding / Industry 4.0	A modern friction welding centre with industry skills 4.0-compatible integration of operating data is available in the laboratory.

Anhalt University of Applied Sciences

Image.Knowledge.Gestaltung	The aim of the Image.Knowledge.Gestaltung ego.-INCUBATOR is to realise applications, equipment and methods in the context of data and image acquisition.
Hybrid AR-VR Lab	The Hybrid Environment and Product Visualisation using Augmented, Mixed and Virtual Reality Technologies ego.-INCUBATOR is a laboratory for the development of services (through to applications) in these areas.
User Experience and Resilience	The User Experience and Resilience ego.-INCUBATOR supports startups for the development and quality improvement of technical products and systems in terms of their user-friendliness and sustainability.

Martin Luther University Halle-Wittenberg

Startup Workshop Life Sciences	The equipment in the laboratories in the Life Sciences Startup Workshop, includes the following: Electrophoresis machines, flow cytometers, plate washers/plate readers, PCR and gel documentation.
Startup Workshop NanoWerk	In the NanoWerk startup workshop, the well-equipped laboratories contain, among other things, a combined atomic force microscope/scanning tunnel microscope (AFM/STM), a near-field optical microscope, a microscope camera and an ion beam preparation tool.
Incubator IT & Media	The equipment in the IT and Media Workshop enables users to develop and test their own products for virtual and augmented reality applications and in the field of artificial intelligence/robotics as well as for 3D cinema, and to carry out acceptance studies.
Incubator Nutrition & Agricultural Technology	In the field of nutrition and agricultural technology, laboratories are equipped for the development and manufacture of food prototypes and their analysis.

Merseburg University of Applied Sciences

Startup Workshop Rapid Prototyping	In the laboratory techniques and technologies are provided for product development in the fields of art and design, architecture and engineering.
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Otto von Guericke University Magdeburg

MakerLabs (Page 2-10)



Come and develop in our MakerLabs



Image: Stokete/shutterstock.com