WORK IT!

MAKERLABS
AT THE OVGU

Spaces for your Ideas
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.

**BACKGROUND**

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**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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ADDITIV+
Manufacturing laboratory for the production of functional prototypes

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

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Images: OVGU
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.

**BACKGROUND**

**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)

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FabLab – FABRICATION LABORATORY
Manufacturing laboratory for the production of display and functional models

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.

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

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FinTech — FINANCIAL TECHNOLOGY

Real-world laboratory at the interface between technology and finance

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

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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
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.-Wirts.-Ing. Jonas Crackau.

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

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INNOLAB IGT — IMAGE GUIDED THERAPY

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

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.

POSSIBILITIES/FACILITIES

Simulations Operating Room:
- Endoscopy (Olymus)
- 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
- Phantomes/phantom construction

Creative Office:
- Individual and group workstations
- Smartboard
- PCs

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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.
Performance Lab

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

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.

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

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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

Images: Harald Krieg/OVGU, Chris Rößler/OVGU
IMPRESSIONS

IMPRINT

Published by
Otto von Guericke University Magdeburg
Transfer and Entrepreneur Centre
Universitätsplatz 2
39106 Magdeburg (Germany)

Editor/Layout: Transfer and Entrepreneur Centre
Circulation: 500

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Rev 1. Last updated 03/2020, subject to alterations.

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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)

Otto von Guericke University Magdeburg
- Additiv+
- AWI-Lab
- FabLab
- FinTech
- FLEXtronic
- InnoLab IGT
- IP-LogMo
- Performance Lab

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.

Otto von Guericke University Magdeburg

MakerLabs (Page 2-10)
Come and develop in our MakerLabs