

**AACHEN CENTER  
FOR ADDITIVE  
MANUFACTURING**



# Customized Efficiency

**Your Partner for Additive Manufacturing**

# Mission

ACAM Aachen Center for Additive Manufacturing provides access to innovative know-how, consultancy and training. We qualify your staff to meet challenges that the industry will face in the future. In strong partnerships, we develop strategic roadmaps and place Additive Manufacturing in your production environment.



### **Direct access for industry members to the AM resources**

ACAM develops strategic roadmaps and helps you integrate Additive Manufacturing resources into your production environment. Based on the competences of our research partners, we can offer the whole range of consultancy – from desktop studies to prototypes, from feasibility to implementation.



### **Center for information exchange, joint R&D and targeted training**

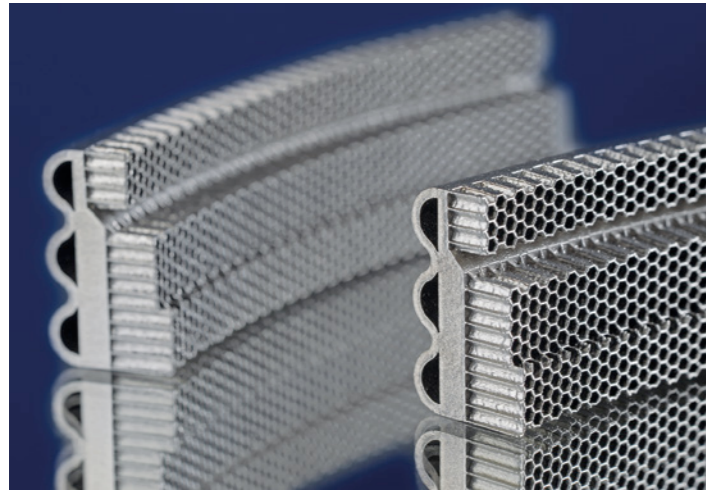
By combining the know-how of our expert teams, ACAM assists you in finding the right resources to fulfill your production requirements and provides an integrated range of services along the entire value chain. Based on our experience in Additive Manufacturing, we observe relevant developments and assess them for you.



### **ACAM connects industry and research**

Your success is our driver. By connecting the relevant people and resources, we enable you to stay up-to-date and have the fundamentals for your decisions. Our Community is growing constantly, integrating different branches and competencies along the value chain. Become a member and get access to the network.

# The Focus Areas of the ACAM

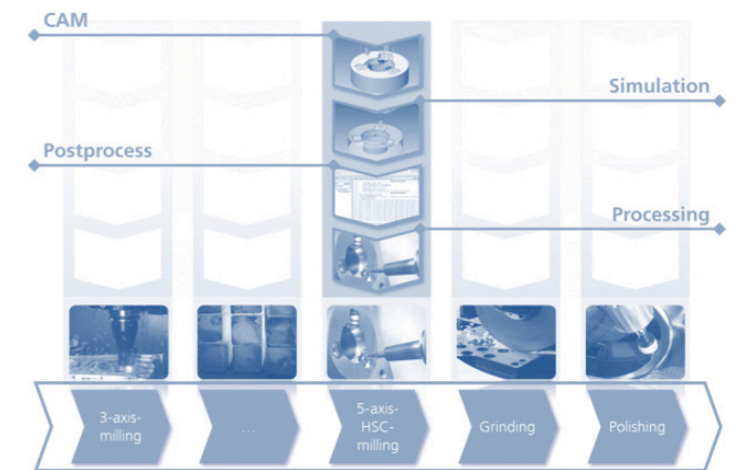


## Design

Implementing Additive Manufacturing starts in the design phase. Only by thinking in products on a functional way the full potential of the new technologies can be converted into successful business cases. The wide variety of 3D CAD tools and their complexity drastically challenge this creation process. Together with our research partners, we develop new alternatives and train your staff to utilize new concepts and strategies for a successful implementation.

## Process Chains

Additive Manufacturing cannot only rely on the pure application of new technologies only. It is the combination with other technologies that enable new product functionalities and keeps costs in a realistic horizon. Optimizing your process chains will thus create new possibilities and reduce the wasting potential. We offer consultancy services for all phases of a product's life cycle.



## Processes

Since the market constantly demands better products as well as quicker and more efficient processes, the industry needs continuous improvement in manufacturing. Along with our research partners we can assist you in investigating and evaluating the feasibility of new processes as well as its implementation. In our network, we can rely on world-class research and development capabilities for metal and polymer based processes.

## Business Innovation

Experience shows: Implementing Additive Manufacturing does not only rely on technological questions, it is the business strategy that finally leads to a successful implementation. By applying innovation in your business, you can not only increase the efficiency and quality of your processes but also develop and provide better products and services. We will gladly prepare a package of methods to help you achieve these goals.



# Member Benefits



### Community

- In the ACAM online platform, you can interact and exchange information with all of the other partners, as well as explore the upcoming events.
- Introduce your company during the Annual Meeting and build new business relationships.



### Consortial R&D

- All members and research partners collaborate, using their expertise to clearly define project topics and scope.
- All projects are integrated in the roadmap and pre-selected by the business partners.
- The selected projects are presented in the annual meeting.
- During the annual meeting, the vouchers can be allocated to the projects which will then be realized.



### Contractual R&D

- As alternative to the Consortial R&D Projects, ACAM offers non-disclosure bilateral or multilateral agreements.
- ACAM arranges the research team according to your specific project requirements and serves as a general contractor.



### Training & Education

- Seminar Program: Each seminar is dedicated to a specific challenge of the AM field and hosted by one of the ACAM research partners.
- Training sections: We offer customized training seminars to prepare your staff for the advances in the AM sector.
- Workshops: Our workshops include the direct exchange of expertise as well as hands-on sections.
- In-house Seminars: We organize exclusive seminars. Also at your company if it suits you best.

## BASIC MEMBERSHIP

As a basic member you have access to the ACAM community. You will receive the annual report and you will be invited to all community events. In addition, you have a budget to allocate vouchers and thus participate in Consortial R&D Projects.

**Annual voucher budget:**  
6.000 €  
**Annual membership fee:**  
12.000 €

## BUSINESS MEMBERSHIP

As a business member, you will be – in addition to the basic membership benefits – involved in decision-making processes such as defining our ACAM roadmap. You will benefit from our continuous AM monitoring and review as well as getting discounts for seminars and other events.

**Annual voucher budget:**  
18.000 €  
**Annual membership fee:**  
40.000 €

## COOPERATION MEMBERSHIP

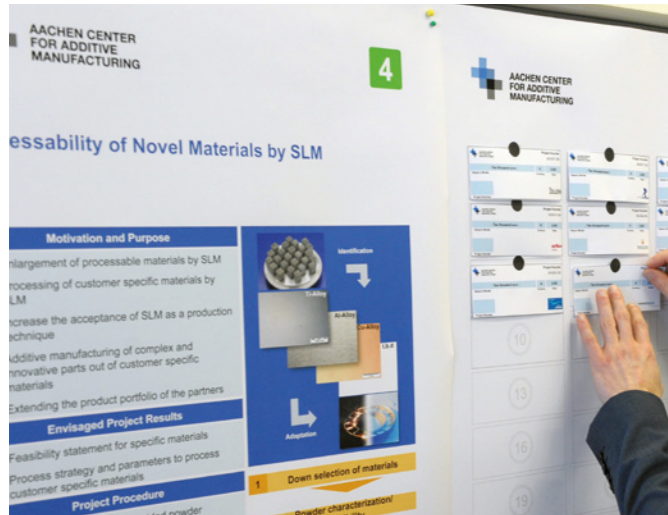
The cooperation membership is designed to promote a collaborative technology and service exchange. It is of special interest if you are a solution provider in the area of Additive Manufacturing. The duration and the costs are arranged individually.

**Annual voucher budget:**  
none  
**Annual membership fee:**  
to be arranged accordingly to your needs

ACAM MEMBERSHIP		BASIS 12 k€ / a	BUSINESS 40 k€ / a	COOPERATION Adaptable fee	
	<b>Voucher</b>	Total value of included ACAM vouchers	6 k€ / a	18 k€ / a	€
	<b>Community</b>	Physical and virtual networking and exchange in the ACAM Community	✓		✓
		Annual ACAM report	€	✓	€
		AM Technology monitoring and review	–		€
		Marketing and website package			€
	<b>Consortial R&amp;D</b>	Co-decision on ACAM R&D roadmap and research topics	–	✓	–
		Annual ACAM R&D projects on agreed topics	Voucher	Voucher	€
		Joint acquisition and realization of consortial research projects	✓	✓	✓
	<b>Services/ Contractual R&amp;D</b>	Bilateral R&D projects	€	Voucher	€
		Prototype manufacturing along the process chain	€	€	€
		Strategy-, market- and technology-oriented consulting projects			
	<b>Training and Education</b>	Seminars for employees and decision makers	€	%	€
		Modules for professional further education			
		In-house seminars		✓	

# ACAM Events

## Community Meeting



Consortial Projects: voucher allocation and workshop sessions



Invited presentations on recent additive manufacturing topics

## 3D Valley Conference



Workshops and one-day presentation program



Networking in the Industry Exhibition



Additive Manufacturing Monitoring



Business gathering between members and research partners



Sessions on metal and polymer based Additive Manufacturing

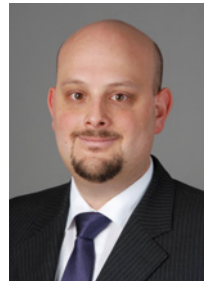


Shop floor visit / Live presentation

# About us

Manufacturing technologies have a new colleague. Regarded for a long time as a pure prototypical approach, AM technology has now achieved series-production readiness for suitable applications. While often over-simplified as a kind of 3D printing, AM technologies are key drivers that can open up new market opportunities for machine suppliers, manufacturing service providers and designers/OEMs. As machines, materials and software

solutions become more available, their implementation will extend into new process chains with impressive business innovations. In this context, the ACAM Aachen Center for Additive Manufacturing was founded as a platform for networking, coordinating joint research and development as well as conducting training and education seminars.



## **Dr.-Ing. Kristian Arntz**

Managing Director

Phone +49 241 8906-8687

Fax +49 241 8906-8688

E-mail [k.arntz@acam-aachen.de](mailto:k.arntz@acam-aachen.de)

[www.acam-aachen.de](http://www.acam-aachen.de)



## **Dr.-Ing. Johannes Witzel**

Managing Director

Phone +49 241 8906-8686

Fax +49 241 8906-8688

E-mail [j.witzel@acam-aachen.de](mailto:j.witzel@acam-aachen.de)

[www.acam-aachen.de](http://www.acam-aachen.de)



## **Ingrid Bongiovanni Roll**

Marketing and Community Management

Phone +49 241 8906-8689

Fax +49 241 8906-8688

E-mail [i.roll@acam-aachen.de](mailto:i.roll@acam-aachen.de)

[www.acam-aachen.de](http://www.acam-aachen.de)



## ACAM's new location: Photonics Cluster

The Photonics Cluster, one of six initial clusters on RWTH Aachen Campus, specializes in the research and development of processes for generating, guiding and using light, particularly as a tool for industrial production.

# Research Partners



## Fraunhofer Institute for Laser Technology – ILT

With about 420 employees and 11,000 square meters of useable space, the Fraunhofer Institute for Laser Technology ILT, founded in 1985, is one of the most important contracting research and development institutes of its sector worldwide. Its experts develop and optimize laser beam sources and laser processes. In close cooperation with its clients, it uses laser technology to solve tasks for production, measurement technology, environment, energy, medical technology and biotechnology, all done in real life situations.



## Fraunhofer Institute for Production Technology – IPT

The Fraunhofer IPT combines knowledge and experience in all fields of production technology. In the areas of process technology, production machines, mechatronics, production metrology and quality as well as technology management, we provide our partners and customers tailor-made solutions and immediately actionable results for modern production.



## KEX Knowledge Exchange AG

As a professional technology and market information provider, our USP is to enable sustainable decisions. Located at the heart of a broad expert-network, we are in touch with the latest technology trends and involved with the development of innovations. By deploying unique information screening technologies, we support customers with systematic and scalable technology scanning, scouting and monitoring approaches.



## Chair for Production Engineering of E-Mobility Components – PEM

The Chair of Production Engineering of E-Mobility Components – PEM represents path-breaking research and innovation in the area of electromobility. Its group Plastic Components deals with cutting, forming and manufacturing methods as well as with coating technology. Its research is focused on the plastic components for small series such as the production of electric vehicles. In addition to providing research and consulting activities, such as the tool and mold construction or the construction of prototypes, the scientists from PEM have access to a great range of machinery: portal milling machines, thermoforming systems, PUR-RIM systems and 3D printers.



## Laboratory for Machine Tools and Production Engineering – WZL

Across the world and for many decades now, the Laboratory for Machine Tools and Production Engineering – WZL of RWTH Aachen University has stood for successful and forward-thinking research and innovation in the area of production engineering. In six different work areas, the WZL does not only focus its research on fundamental theories and findings, but also on the application of findings in an industrial context. Furthermore, it advances practical solutions to rationalize production processes. The Laboratory for Machine Tools and Production Engineering is headed by four professors: Christian Brecher, Fritz Klocke, Robert Schmitt and Günther Schuh.



## The IWF – Institute for Toolless Fabrication

The IWF – Institute for Toolless Fabrication – is an affiliated institute of the FH Aachen University of Applied Sciences. The institute focuses on 3D printing of plastics and metals, fabbers (FFF) for plastics, design and DIY strategies as well as education and training on 3D Printing. It is led by Prof. Dr.-Ing. Andreas Gebhardt from the Department of Mechanical Engineering and Mechatronics, Advanced Fabrication Technology and Rapid Prototyping. Prof. Gebhardt is a renowned specialist in the area of Additive Manufacturing.



## Access Technology

Access provides Material competence. Deep knowledge of metal solidification since 30 years is based on numerous governmental funded and industry related projects. Thermodynamic Databases, fundamentals of solidification, phase kinetics and phase transitions, texture and grain structures and new materials and processes are the main research areas. Access is strongly involved in global ICME activities and has developed and uses own Simulation tools like MICRESS for microstructure formation or tools for property prediction of alloys. Laboratory and technology level equipment for solidification experiments, investment casting, heat treatment and an outstanding analytic department with SEMs, computed Tomography and more serve on the practical side.



## Institute of Plastics Processing – IKV

The Institute of Plastics Processing – IKV at RWTH Aachen University, is Europe-wide the biggest research and education institute engaged in the field of plastics processing. IKV's research activities comprise the processing of plastics and rubber in the fields of injection moulding, extrusion and rubber technology, part design and materials technology, composites, and polyurethane technology. IKV's close contacts with industry and science, to get her with its outstanding facilities, ensure that students benefit from a comprehensive, practically oriented course of study. Prof. Dr.-Ing. Christian Hopmann is Head of the Institute and Managing Director of the Association of Sponsors which includes more than 240 plastics companies from all over the world. He also holds the Chair of Plastics Processing at the Faculty of Mechanical Engineering at RWTH Aachen University.



## The Chair for Laser Technology – LLT

The Chair for Laser Technology – LLT of the RWTH-Aachen University is led by Prof. Poprawe and closely tied to the Fraunhofer Institute for Laser Technology. Worldwide renowned for its scientific work in the field of laser source development, as well as laser applications in general, LLT is specifically engaged in the fields of Laser-based Additive Manufacturing (Selective Laser Melting (SLM) and Laser Metal Deposition (LMD)) of metals as well as laser drilling and ablation with ultra-short pulsed lasers.



## Nonlinear Dynamics of Laser Processing – NLD

The Chair for Nonlinear Dynamics of Laser Processing – NLD of the RWTH-Aachen University is led by Prof. Schulz who is also head of the modeling and simulation department at the Fraunhofer Institute for Laser Technology ILT. The main focus of NLD is modeling and simulation of laser manufacturing processes like cutting, joining, ultra-short pulse ablation and drilling and laser additive manufacturing (LAM). By combining physical, mathematical and numerical reduction techniques with high performance computing, NLD and ILT develop structural mechanics solvers for LAM processes.



## Institute for Automotive Engineering (ika)

ika of RWTH Aachen University is Europe's leading institute in automotive engineering, directed by Professor Lutz Eckstein. Starting from the idea to innovative concepts for components and systems up to vehicle prototypes we create and design the future vehicle. We therefore work in public-funded as well as bilateral projects for manufacturers and suppliers in automotive context. ika employs more than 135 members of staff and over 200 student assistants. In addition to that more than 200 student research projects, bachelor and master theses are part of our research and development projects each year.

# Our Member Network



**AACHEN CENTER  
FOR ADDITIVE  
MANUFACTURING**

Join the ACAM Community!  
Community | R&D | Services | Education

Business Members

   Toyota   

Basis Members

     Rolex 

Cooperation Members

Join the ACAM Community! Contact us

## Ingrid Bongiovanni Roll

Marketing and Community Management

Phone +49 241 8906-8689

Fax +49 241 8906-8688

E-mail [i.roll@acam-aachen.de](mailto:i.roll@acam-aachen.de)

[www.acam-aachen.de](http://www.acam-aachen.de)

## Sources

**P. 3:** Fraunhofer ILT/Shutterstock/Shutterstock

**P. 4:** Fraunhofer ILT/Shutterstock

**P. 5:** Fraunhofer IPT/Shutterstock

**P. 8-9:** ACAM/Neumeyer

**P. 11:** Campus GmbH/Horsky





**Aachen Center for Additive Manufacturing**

Steinbachstraße 15

52074 Aachen

Phone +49 241 8906-8686

Fax +49 241 8906-8688

E-mail [anfrage@acam-aachen.de](mailto:anfrage@acam-aachen.de)

[www.acam-aachen.de](http://www.acam-aachen.de)