Fraunhofer
ACADEMY

ADVANCED TRAINING WITH FRAUNHOFER

ADVANCED TRAINING – THE FRAUNHOFER APPROACH

Fraunhofer is Europe's largest application-oriented research organization. Its research activities are conducted by 67 institutes and research units at locations throughout Germany. The Fraunhofer-Gesellschaft employs some 24,000 people, who work with an annual research budget totaling more than 2.1 billion euros. Of this sum, more than 1.8 billion euros is generated through contract research. Fraunhofer's core task is to carry out research of practical utility in close cooperation with its customers from industry and the public sector. In this way, the Fraunhofer-Gesellschaft shapes the innovation process in Germany and drives forward the development of key technologies.

The Fraunhofer Academy is the Fraunhofer-Gesellschaft's specialist provider of continuing education and part-time training for people in employment. Through a range of training programs, the Fraunhofer Academy passes current Fraunhofer Institutes' research knowledge and expertise on to private sector business enterprises seeking to provide their employees with the best possible qualifications. After all, applied research is useful only if new research finds its way into industry and is then turned into innovations. This is the only way companies can remain competitive in the global market.

In cooperation with renowned partners and partner universities, the Fraunhofer Academy offers part-time study programs, certificate courses and multi-day seminars. The Fraunhofer Academy's continuing education portfolio is divided into five topic areas: Technology and Innovation, Energy and Sustainability, Information and Communication, Manufacturing and Testing Technology, and Logistics and Production.

Create the foundation for your next career move!

Best wishes,

Dr. Roman Götter
Head of the Fraunhofer Academy

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ABOUT FRAUNHOFER ACADEMY

The Fraunhofer Academy is the Fraunhofer-Gesellschaft's specialist provider of continuing education and part-time training for working professionals.

The Fraunhofer Academy was founded in 2006 in response to the German government's Pact for Research and Innovation. This led to the creation by Fraunhofer of a special unit dedicated to continuing education, with the aim of promoting the transfer of knowledge between research and industry.

We offer specialists and managers outstanding courses of study, certificate courses and seminars based on the research activities of the Fraunhofer Institutes in collaboration with selected and prestigious partner universities.

FRAUNHOFER ACADEMY OFFERS MORE THAN 40 ADVANCED TRAINING PROGRAMS IN 5 THEMATIC AREAS:

- Energy and Sustainability
- Information and Communication
- Manufacturing and Testing Technology
- Technology and Innovation
- Logistics and Production

CONCEPT FOR SUCCESS

Fraunhofer is synonymous with excellence in applied research. The organization's mission and values determine our actions. Wherever new technologies and processes are implemented, the Fraunhofer Academy helps companies to establish a new innovation culture based on continuing education that will assure their future business success.

OUR MISSION	Putting knowledge into practice
OUR VALUE	We train and qualify specialists and managers and strengthen organizations
OUR OBJECTIVE	High-quality knowledge transfer
OUR APPROACH	Learning formats and useful content adapted to individual needs

YOUR BENEFITS AT A GLANCE

ADVANCED TRAINING PROGRAMS

PROGRAM	FORMAT	DATES
• **Online M.Sc. Wind Energy Systems**	E-learning: 100%	October every year
• **Master Online Photovoltaics (M.Sc)**	E-learning: ~ 90%, on-campus time: up to 5 days per semester	October every year
• **Solar Energy Engineering (Certified Training Course)**	On-campus time: 100%	April and October every year
• **Master Software Engineering for Embedded Systems (M.Eng.)**	E-learning: ~ 90%, on-campus time: one weekend in first 3 terms	October every year
• **Data Scientist Training Series (Seminar/Certified Training Course)** – Certified Data Scientist – Training in General Methods – Training in Sector-Specific Methods	Classroom time: 100%	Regularly and on request; course is also offered as in-house training.
• **Fiber-Composite Technology (Certified Training Course)** – FRP Fabricator – FRP Specialist – FRP Remanufacturer	Classroom time: 100%	Dates on request. Course is also offered as in-house training.
• **Industrial Adhesive Bonding Technology (Certified Training Course)** – European Adhesive Bonder – European Adhesive Specialist – European Adhesive Engineer	Classroom time: 100%	Dates on request. Course is also offered as in-house training.
• **Intellectual Capital Statement – Made in Germany (Seminar)**	Classroom time: 100%	Dates on request

ADVANCED TRAINING PROGRAMS

PART-TIME COURSES OF STUDY

– Part-time academic training
– Initiated by a Fraunhofer Institute in cooperation with a partner university or university of applied sciences

CERTIFIED TRAINING COURSES

– Part-time training leading to a recognized, professional qualification
– At least one week long

SEMINARS

– Seminars focusing on a specific aspect of a Fraunhofer Institute's area of research
– Normally 2-3 days per unit

Part-Time Course of Study

"There is a high demand for qualified and experienced engineers in all sectors of the onshore and offshore energy industry. To meet this demand, we have taken it upon ourselves to train highly skilled workers for this rapidly growing employment market in the international energy sector." *Dr. Kurt Rohrig, Deputy Director, Fraunhofer Institute for Wind Energy and Energy System Technology IWES*

ONLINE M.SC. WIND ENERGY SYSTEMS

Program overview

The Online M.Sc. Wind Energy Systems is capacity building in the field of wind energy for research and industry offered by the University of Kassel in cooperation with the Fraunhofer Institute for Wind Energy and Energy System Technology IWES. The study program consists of modules including "Fundamentals of Mathematics and Engineering for Wind Energy Systems," "Energy System Technology," "Simulation and Structural Technology" and "Additive Key-Competences: Energy and Law".

Who should enroll

Target groups for the master's program are natural scientists and engineers who hold a bachelor's degree and wish to extend their knowledge in the field of wind energy. The program is taught online and so provides professionals and career changers with on-the-job training in the emerging research and business field of Wind Energy Systems.

Key benefits

- International master's degree program with 100% online teaching
- Work and study simultaneously and balance your study and family time
- Unique and experienced education alliance with the University of Kassel, Fraunhofer IWES and industrial partners
- Introduce your own professional input into the curriculum since the course has a problem-solving focus

Further Information

Format
International distance learning master's program (100% online)

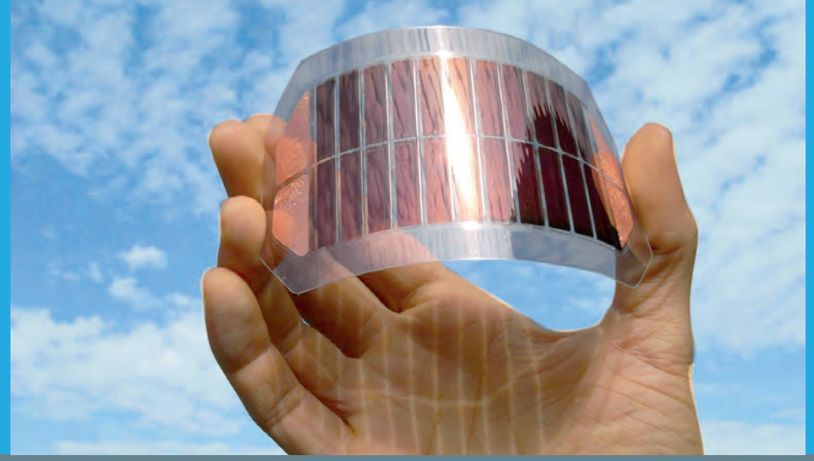
Starting date
October every year

Duration
5–7 semsters

Course fee
€14,000 (total)

Qualification
Master of Science (M.Sc.)

UNIKASSEL VERSITÄT



Part-Time Course of Study

"The solution lies in renewable energies and photovoltaics in the modern world, even for developing countries.[...]. The seminar has opened my eyes to new things. Some of the concepts we are studying are completely new to me and they are amazing."

Ronald Yiga, student, Master Online Photovoltaics

Certified Training Course

"What I liked best about my particular course (fundament of pv-systems) was the quality of the e-lectures. I found it extremely well structured! It is the first time that I've worked with e-lectures, so it's a new experience."

Milan Padilla, participant in the certified training course Solar Energy Engineering

MASTER ONLINE IN PHOTOVOLTAICS

Further Information

Format
International distance learning master's program

Starting date
October every year

Duration
4–6 semsters

Course fee
€3800 (per semester)

Qualification
Master of Science (M.Sc.)

Program overview

The Master Online in Photovoltaics (M.Sc.) offered by the University of Freiburg in cooperation with the Fraunhofer Institute for Solar Energy Systems ISE is an international distance learning program that focuses on photovoltaics research, development, production and marketing. It provides participants with the skills they need to develop, design and optimize photovoltaic systems. The program explains the technological and physical foundations of photovoltaics and provides a comprehensive overview of the interrelated economic and ecological aspects of renewable energy.

Who should enroll

The master's program is aimed at people who wish to expand their knowledge and skills in the field of photovoltaics and at companies that are looking to upskill their employees. The program is designed for professionals with an academic degree in a scientific or technical field and at least one year of professional experience.

Key benefits

- Gain proficiency in photovoltaics and solar energy engineering
- Study part-time and by using e-learning tools
- Program specially designed to accommodate the needs of working professionals
- Earn Master of Science awarded by University of Freiburg and study with leading experts from the Fraunhofer Institute for Solar Energy Systems ISE

SOLAR ENERGY ENGINEERING

Program overview

In cooperation with the Fraunhofer Institute for Solar Energy Systems ISE, the University of Freiburg offers continuing education courses in the field of photovoltaics. The convenience and flexibility of the advanced e-learning environment, combined with personal and enjoyable voluntary workshops in Freiburg, will ensure that both employers and employees benefit from this educational program. The certified training course includes topics such as solar cells and photovoltaic systems, photovoltaics and the renewable electricity grid, crystalline silicon photovoltaics, material and solar cell characterization and modelling, non-conventional cell concepts and advanced processing.

Who should enroll

The target group ranges from engineers, working professionals and decision-makers in the field of photovoltaics to interested newcomers, teachers and journalists. Participants hold a first academic degree and should be familiar with semiconductor physics, semiconductor devices and power electronics.

Key benefits

- Widely-recognized certificate creditable for master's degree
- Up to date content highly relevant to industrial working environment
- Personal support and communication through online meetings and forums
- Workshops and lab courses at the University of Freiburg and the Fraunhofer Institute for Solar Energy Systems ISE

Further Information

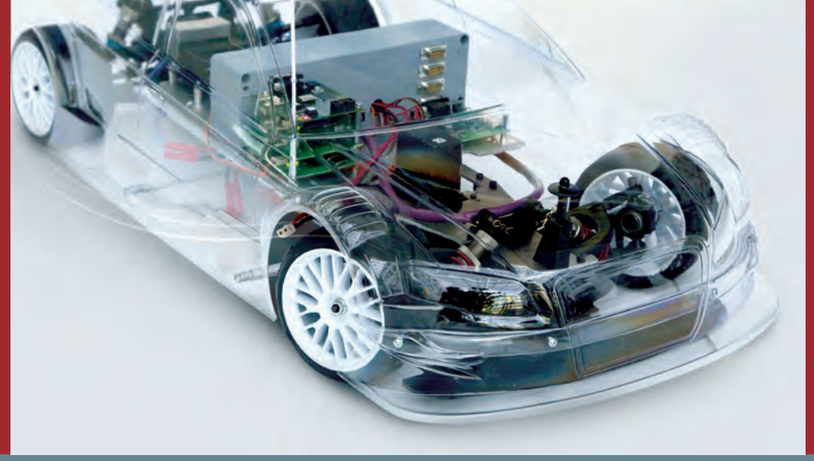
Format
Certified Training Course

Starting date
April and October every year

Duration
5 months (total workload: 250-300 hrs)

Course fee
€2500 (total and discounts for students available)

Qualification
Certificate from the University of Freiburg in collaboration with the Fraunhofer Institute for Solar Energy Systems ISE



Part-Time Course of Study

"Engineers for embedded systems need to master mechanics, electronics and – increasingly – software. In this course, experienced engineers will learn state-of-the-art software engineering for embedded systems."
Prof. Dieter Rombach, Executive Director, Fraunhofer Institute for Experimental Software Engineering IESE

MASTER SOFTWARE ENGINEERING FOR EMBEDDED SYSTEMS

Further Information

Format
International distance learning master's program

Starting date
October every year

Duration
4 semesters (part-time)

Course fee
€7800 (total)

Qualification
Master of Engineering (M.Eng.)

Technische Universität Kaiserslautern
Distance and Independent Studies Center

Program overview

In cooperation with the Fraunhofer Institute for Experimental Software Engineering IESE, the Distance and International Studies Center (DISC) of the University of Kaiserslautern offers a unique part-time master's program for engineers for embedded systems. On the course, you will first complete four fundamental course modules that will provide you with the basic knowledge in software development and project management for embedded systems. After that, you take a more development-oriented software engineering course designed to prepare students for work in the technical field of software development or to switch to more development-based activities.

Who should enroll

The program targets graduates of engineering disciplines such as electrical, mechanical, and industrial engineering, graduates of IT disciplines such as computer science and business informatics and graduates of non-engineering disciplines, such as mathematics and physics.

Key benefits

- High-quality learning materials that reflect not only state-of-the-art science, but also the software engineering requirements of industry in the embedded systems domain
- High-ranking experts and researchers who are recognized in industry because of their profound practical experience
- Acquire new competencies that will help to improve products and processes in organizations
- Gain a better understanding of software engineering principles and how to assess and select the best technologies

Seminar/Certified Training Course

"More and more companies are realizing the potential of the wealth of data available today and are beginning to redefine themselves as data-driven companies. Using predictive modeling, they can distill data into forecasts for decision-making. To do this, they require teams that have a particular mix of expertise, and data scientists – who know how to apply IT, statistical and mathematical concepts and techniques – are in great demand." *Dr. Dirk Hecker, Managing Director, Fraunhofer Big Data Alliance*

DATA SCIENTIST TRAINING SERIES

Program overview

The Fraunhofer Big Data Alliance applies expertise derived from research and industrial practice. The alliance trains data scientists in the fundamental principles, methods and best practices involved in processing big data, in a vendor-neutral approach that combines theory and practice. This makes it possible to develop big-data solutions that offer a high level of data protection and security. In the training series, the following courses are offered: certified data scientist program, training in general methods and sector-specific methods.

Who should enroll

This training program is aimed at managers, project managers and other IT professionals, such as business developers, analysts, data managers and application developers, who wish to obtain qualifications as a data scientist.

Key benefits

- Participants lean more about the typical issues associated with big data focused in one- or multi-day seminars
- Selected introductory lectures and workshops, based on an assessment of your company's specific operating environment, provide an overview of the possibilities offered by big data together with current trends and the associated challenges

Further Information

Format
Seminar/Certified Training Course

Starting date
Regularly and on request; also in-house training

Duration
1-5 days

Course fee
€950 (per day)

Qualification (after the 5-day training program)
Certified Data Scientist – Basic Level

Certified Training Course

"It is a common error to conceive structures as if they were made of steel, rather than considering the specific features of fiber composites. To ensure product quality, personnel need to be specifically trained in the particularities of this new class of material."
Beate Brede, Head of the Polymer Materials Competence Center, Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM

FIBER-COMPOSITE TECHNOLOGY

Further Information

Format
Certified FRP Manufacturer
Duration
one-week session (40 hrs)
Course fee €1195 (total)

Format
Certified FRP Remanufacturer
Duration
one-week session (40 hrs)
Course fee €1195 (total)

Format
Certified FRP Specialist
Duration
one-week session (40 hrs)
Course fee €1340 (total)

FIBER-REINFORCED PLASTIC (FRP) MANUFACTURER

The course promotes understanding of the special features of FRPs and trains participants to identify and avoid errors when manufacturing and using FRP materials. The course participants learn about the key aspects of manufacturing FRPs, various FRP applications and manufacturing methods. **Who should enroll:** People whose work involves handling or fabricating fiber-reinforced plastics and others interested in entering this technical field.

FIBER-REINFORCED PLASTIC (FRP) REMANUFACTURER

Course participants are trained to repair fiber composites and to work in industrial production. The training course qualifies participants to follow work instructions effectively for their particular work tasks. After successful completion of the course, they are able to process and repair high-quality fiber-composite structures. **Who should enroll:** People whose work involves independently maintaining, repairing, and processing fiber composites to order.

FIBER-REINFORCED PLASTIC (FRP) SPECIALIST

The course provides training for people involved in designing fiber-reinforced plastics and planning their industrial manufacture. The course teaches the participants how to select suitable raw materials and manufacturing methods in order to meet the requirements of the given FRP product. **Who should enroll:** Industry employees whose work involves planning the manufacture of FRPs and implementation in the process chain and others interested in entering this technical field.

All programs are offered as in-house training courses.

Certified Training Course

"The training we provide in adhesive bonding techniques is up-to-the-minute, direct and based on expert knowledge. This is because the knowledge we transfer is knowledge we have ourselves generated as researchers." *Professor Dr. Andreas Groß, Head of the Training and Technology Transfer Department, Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM*

INDUSTRIAL ADHESIVE BONDING TECHNOLOGY

EUROPEAN ADHESIVE BONDER

This certified training course is for employees at companies that use adhesives and specialists employed by adhesive manufacturers. Successful participants acquire the skills they need to perform adhesion processes independently and professionally. **Who should enroll:** Employees at companies that use or make adhesives and that independently carry out bonding work to order.

EUROPEAN ADHESIVE SPECIALIST

The Adhesive Specialist training program is offered to employees at companies that use adhesives in industry and the skilled trades sector, as well as companies involved in adhesive manufacturing and distribution. Successful completion of this training program qualifies participants to guide and instruct trainees and adhesive bonders in the theory and practice of adhesive bonding technology. **Who should enroll:** Employees in companies that use or make adhesives or trade in adhesives.

EUROPEAN ADHESIVE ENGINEER

The course qualifies successful participants to properly manage and monitor a full range of adhesive technology aspects, ranging from product development to manufacturing and repair. Participants also examine the entire product lifecycle and learn how to apply this as a framework. **Who should enroll:** Engineers and scientists in all disciplines and sectors of industry who either currently use bonding technology or are interested in using bonding technology in the future.

All programs are offered as in-house training courses.

Further Information

Format
Certified EWF European Adhesive Bonder - EAB
Duration
one-week session (40 hrs)
Course fee €1395 (total)

Format
Certified EWF European Adhesive Specialist - EAS
Duration
3 one-week sessions (120 hrs)
Course fee €1495 (total)

Format
EWF European Adhesive Engineer - EAE
Duration
8 one-week sessions (332 hrs)
Course fee €1635 (total)

Seminar

"The Intellectual Capital Statement (ICS) is a strategic management instrument to assess soft factors, to quantify their contribution to value creation and to enable the deduction of suitable measures for development of intellectual capital."

Sven Wuscher, Program Manager of the Intellecual Capital Statement seminar, Fraunhofer Institute for Production Systems and Design Technology IPK

INTELLECTUAL CAPITAL STATEMENT

Further Information

Format
Seminar

Starting date
On request

Duration
2 days

Course fee
Fees available on request

Qualification
Accredited ICS Moderator

Program overview

The "Intellectual Capital Statement" (ICS) is a methodology based on international experiences and has the broadest dissemination in all branches and sizes of companies all over Europe. The Fraunhofer Institute for Production Systems and Design Technology IPK is the exclusive partner of the European small and medium-sized enterprises association CEA-PME for InCaS™ training. The ICS is a workshop-based method that does not only allow participants to get a whole new perspective on the functionality of a company, but also enables them to prioritize fields of action for the development of a company and a consistent report to communicate intangible assets. Based on European ICS quality standards, the training enables the ICS Moderator to professionally prepare, moderate and guide others through an ICS implementation process-working on the highest quality level and with a solid methodical foundation.

Who should enroll

Employees who want to secure intellectual capital in their companies and organizations.

Key benefits

- Increased transparency concerning knowledge and competences
- Detection of improvement opportunities and innovation potential
- Well-founded basis for organizational development and decision-making
- Improved external communication through visualization of corporate performance

PROGRAM OVERVIEW

***Programs available in English**

TECHNOLOGY AND INNOVATION

Executive MBA from RWTH Aachen University
Intellectual Capital Statement – Made in Germany*
Chief Technology Manager

ENERGY AND SUSTAINABILITY

Master Online Photovoltaics*
infernum – interdisciplinary distance learning program for environmental sciences
University Qualification in Environmental Management
MASTER:ONLINE in Building Physics
Online M.Sc. Wind Energy Systems*
Data Analysis and Forecasting
Solar Energy Engineering*
Energy System Technology
Electromobility

MANUFACTURING AND TESTING TECHNOLOGY

Master Automotive Production Engineering
Fiber-Composite Technology*
Industrial Adhesive Bonding Technology*
Non-Destructive Testing
Joining Technology in Electronics
Cleaning Technology

INFORMATION AND COMMUNICATION

Master Software Engineering for Embedded Systems*
Software Architecture
TeleTrusT Information Security Professional (T.I.S.P.)
Usability Engineer
Roberta® Teacher Training
Requirements Engineering
Data Scientist Training Series*

LOGISTICS AND PRODUCTION

Diploma in Supply Chain and Logistics Management (DAS)
MASTER:ONLINE in Logistics Management
Bachelor of Science in Logistics Management
Value Stream Engineering
Lean Logistics
Master Industrial Production Management
Inventory Management
Variation Management
Product Lifecycle Management – PLM Professional

FRAUNHOFER INTERNATIONAL NETWORK

International collaborations with excellent research partners and innovative companies around the world ensure direct access to regions of the greatest importance to present and future scientific progress and economic development.

INNOVATIVE LEARNING FORMATS

iAcademy and Globe

"The Fraunhofer Academy has based its program of continuing education in the MINT fields on an intelligent combination of classroom teaching, laboratory training and e-learning, known as blended learning. While making use of advanced learning management tools offered by the best providers in the sector, Fraunhofer also develops its own solutions – such as the innovative iAcademy learning platform – which help make the learning process more efficient." *Dr. Kai Kohler, Head of the Technology Marketing Department, Fraunhofer-Gesellschaft*

"We see mobile platforms as the future of learning materials and teaching methods. It is already evident that mobile devices are a popular means of learning during the journey to and from work. Suitable adapted content would make it possible to derive the full benefit from these otherwise unproductive working hours."
Eva Poxleitner, Education Consultant and Head of the Mobile Learning Projects, Fraunhofer Academy

We make targeted use of new technologies and innovative teaching and learning methods to create a professional development environment that corresponds to the modern lifestyle. The ability to choose where and when you study provides space for learning alongside personal and professional commitments.

iAcademy

Mobile devices are useful in many everyday situations and help people to use their time efficiently, for example when traveling. A smartphone can be used to arrange appointments and a tablet PC or laptop enables urgent e-mails to be sent from anywhere. The same applies to continuing education, where course participants want access to learning material not only at home, but also when on the move.

The mobile app and application-specific editor developed by the Fraunhofer Academy in collaboration with Ziemann.IT makes it possible to learn efficiently using a mobile device. The iAcademy app organizes the teaching content of the continuing education programs in a learning map based on modular units, with quizzes to monitor learning progress and additional multimedia content in the form of videos, graphics and learning games. The iAcademy Editor software makes it easy for authors to create their own learning apps. It includes an "Assessment" module that enables you to create realistic assessments with multimedia content and configurable duration and scoring. As participants in the "Advancement through education: open universities" initiative sponsored by the German Federal Ministry of Education and Research (BMBF), the ongoing development of iAcademy is accompanied by research into topical issues in the broad field of instructional design and educational technology.

Apps for iOS and Android can be downloaded from **www.iacademy.mobi/en**, where you can also register for our authoring tool. You are welcome to contact us if you need any more information.

GLOBE E-LEARNING PLATFORM

GLOBE is a web-based e-learning platform developed by the Fraunhofer Academy to facilitate knowledge transfer. It complements our existing range of training programs and provides ideal support for periods of self-study. GLOBE presents realistic learning scenarios in an easily assimilated way. Its intuitive, interactive functions enable users to build up their knowledge of a wide range of complex topics in numerous different ways.

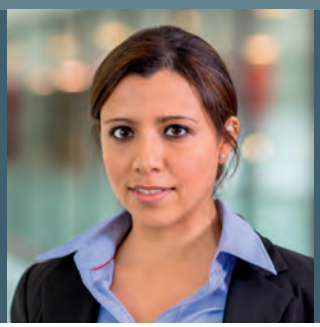
Federal Ministry of Education and Research

ESF European Social Fund for Germany

European Union

AUFSTIEG DURCH BILDUNG OFFENE HOCHSCHULEN

Contact



Karla Sosa
International Education Management

Clara Tu
International Education Management

If you have any queries or require further information about any of our programs, do not hesitate to contact the Fraunhofer Academy team.

Contact us
– by e-mail: academy@fraunhofer.de
– by visiting our website:

www.academy.fraunhofer.de/en

Or follow us on
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