



Why not try
microelectronics?

Experience science

Children never stop asking questions about the world. They experiment, test, and try new things every day. They do not care if they stumble and fail. They get up, brush themselves off, and try again, until they find the answer. This is the scientific method, built into our DNA. Why then do so few people dare to pursue a career in science?

We asked our colleagues what made them choose the work they love. Of the many insights we gained, we can already reveal one now: It is not about being a scientist, but about doing science. Find out how you might want to do science and discover the many career opportunities at Fraunhofer IZM!

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Imprint

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Gustav-Meyer-Allee 25
13355 Berlin

www.izm.fraunhofer.de

info@izm.fraunhofer.de
+49 30 46403 -100



LinkedIn
[fraunhofer-izm-berlin](https://www.linkedin.com/company/fraunhofer-izm-berlin)



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Editorial team

Authors: Susann Thoma, Lotta Jahnke

Design: Alexandra Rydz, Enrica Theuke

Images

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What is microelectronics?

In today's world, technology is everywhere. Microelectronics play a crucial role in this. It is a fascinating field that deals with the development and production of the small and tiny electronic components found in virtually any modern device – from your smartphone to medical devices or the cars on the road.

Microelectronics combine creativity, precision and innovation. The field offers countless opportunities for tech-minded individuals to start their careers. Our careers magazine gives you a sense of the many options that this dynamic sector has in store for you. Gain fascinating behind-the-scenes insights, hear the inspiring stories from our experts, and learn invaluable information about entry-level opportunities and career paths in microelectronics.

Want to know more?

Fraunhofer IZM is one of more than seventy Fraunhofer Institutes located in the heart of Berlin. With more than three decades of experience in microelectronics and applied research in areas ranging from medical technology to communication tech or environmental technology, we offer careers that address tomorrow's questions today. Whether in our labs, as a student, or in an apprenticeship – there are many opportunities to join us and start your development journey.

At our Berlin, Dresden, and Cottbus sites, we work with startups, SMEs, and major international brands to create the technology for the smart electronics of the future. Fraunhofer IZM has four technology clusters covering a vast array of fascinating areas in medical technology, communication, RF, and quantum technology.

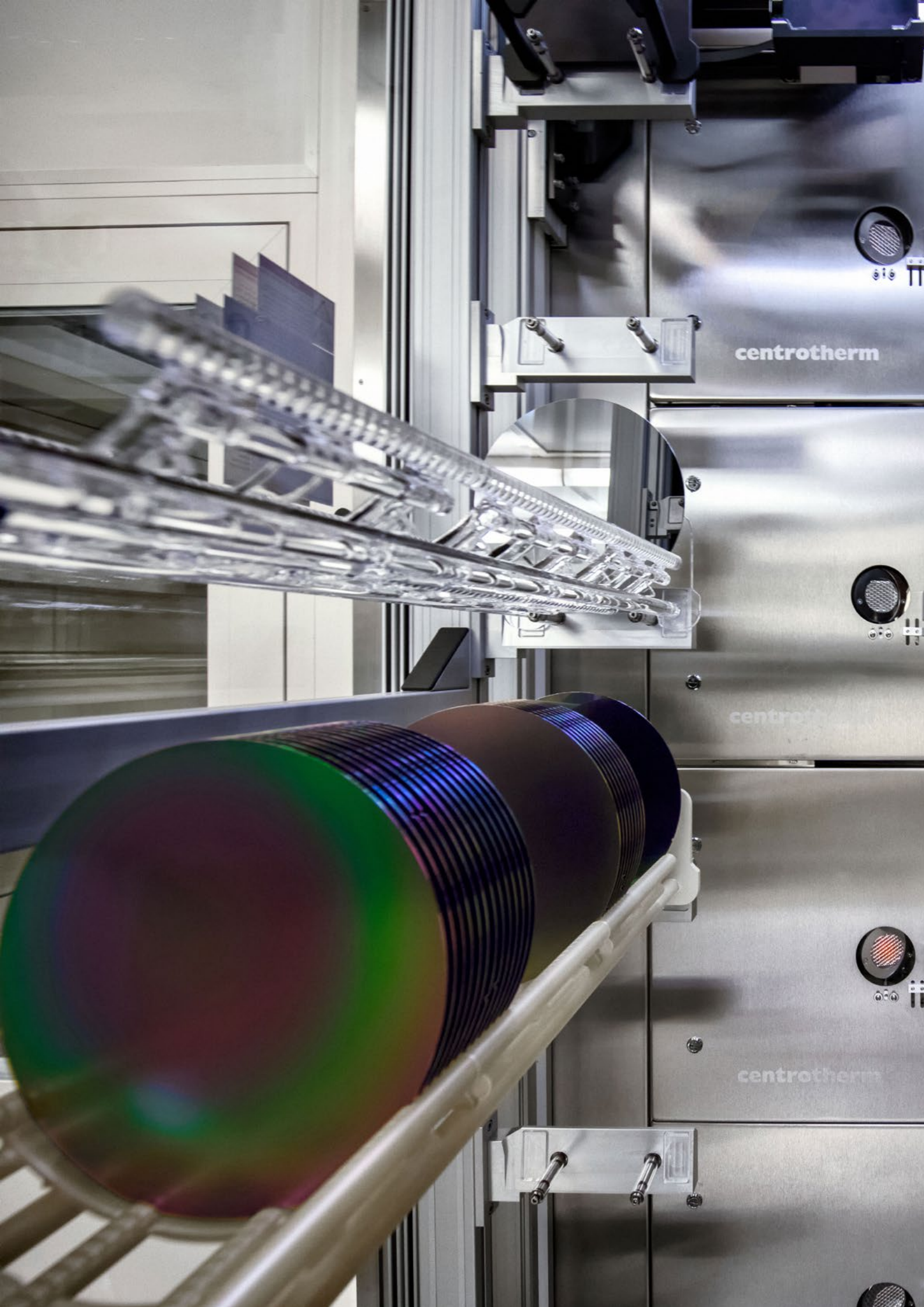
The tools behind our work

High-tech researchers deserve high-quality tools. In our 65 labs, you will find equipment that rivals the very best in the world for research, from specialized measuring tools to industrial machinery, made possible with state, national, and EU support. You can create the electronics components of tomorrow on a giant 11-ton machine or create metallic coatings that are just 10 micrometers thick, laid down on glass surfaces with nanometer precision.

Our several thousand square meters of cleanroom facilities allow you to experiment with the entire semiconductor processing flow. All of the cutting-edge equipment at Fraunhofer IZM is used to address pressing social and technological issues of our time, such as quantum photonics, greener electronics, and 3D radar systems.









Stay curious and
dare to take the
initiative!

»I care about the little things – especially when they have a big impact«

Morten Brink, Research Associate at Fraunhofer IZM

High-resolution infrared cameras, projects worth millions of euros working on novel LEDs, or new cleanroom technologies – Morten Brink is sure to be there whenever high-tech solutions make their way from the micro world of science to the macro world of users and applications. With his background in chemistry and scientific drive, he has spent many years at Fraunhofer IZM. In our interview, he lets us in on what really drives him and how a cleanroom works in real life.

You are a researcher specializing in Wafer Level System Integration. What does that mean in your everyday work?

It means that I work at the intersection of industry projects, applied research, and technology. I am involved in planning, coordinating, and managing projects. I attend meetings with clients, assist our student staff – and I still spend hours in the cleanroom every week, working on projects and processes. This diversity is what makes this job so exciting for me.

Cleanrooms: That sounds a bit like science fiction. Is that a fair comparison?

In essence, a cleanroom is a laboratory, but with hygiene dialed up to the extreme – to the nanometer level. We control the particles floating in the air, as well as the temperature and humidity. Even the slightest fluctuation would impact the work being done there. Even a difference of one degree Celsius can have a significant impact in our world.

Our cleanrooms in Berlin cover almost 1,000 square meters in total. But they are modular and let us process a range of wafer sizes and materials with great flexibility – which is very helpful for anybody doing R&D work.

Do you remember your first time in a cleanroom? What was that experience like?

Of course I can! I was still studying chemistry at the time and knew how labs worked. But a cleanroom is a completely different beast. Protective clothing, airlocks, special lighting, and all the noise: it's impressive at first, but you quickly get used to it. At some point, you move through this high-tech world as if it is nothing.

What are your current projects? And are there any that you love thinking back to?

Right now, we are working on high-resolution micro LED displays that each have more than a million individual LEDs. It's technology fine-tuned to the extreme, with a range of Fraunhofer Institutes contributing to the work.

The project that I will never forget was my first real one: An intelligent LED headlight for cars that could control every single LED. I was responsible for processing the wafers and coordinating the project work at our Institute, and I was able to present our progress to our partners at the semiannual project meetup. Today, you can see this technology in action out on the road – which is a great feeling.

What is so special about the technology landscape at Fraunhofer IZM?

Our hardware here is not made for mass production, but it is made to be flexible. We can work with



a range of wafer sizes. We can adjust processes and test new ideas. This year, we were able to order lots of new hardware for APECS, a major European pilot line. Over the next few years, that will give us even more opportunities to tackle exciting new projects.

And: A few months ago I had the opportunity to travel to the US to inspect an electroplating system that I had ordered. Tools like these have to be tested and inspected on site. That makes the job extremely varied.

**And how do you get to a position like yours?
What would be your advice for talented young people?**

I have been with Fraunhofer IZM since 2008 – initially as a student, and then as a research associate since 2013. At first, you follow the lead of more experienced colleagues, but then you slowly build up your network, start acquiring projects, and become a sort of bridge between technology and our clients.

My secret: Stay curious and dare to take the initiative. At Fraunhofer IZM, you have a lot of freedom, but you need the courage to take advantage of it. What's especially exciting: You are not here to churn out masses of products. You are here to create solutions. If you know technology and can

communicate well, you will fit right in.

What keeps you motivated in your job?

That's simple: its diversity. I move from medical to automotive technology, from bees used to monitor our environment to spaceflight. We can experiment with things that would be too expensive or risky for the industry right now. And I am part of a diverse team of dedicated individuals – that gives my work meaning.

If you could tell your younger self one thing – what would it be?

Believe that your interests can and should change over time. I never wanted to be a traditional lab-bound chemist, and today, I am working somewhere in between technology, management, and research. If you care about small things with a big impact, you will find something in microtechnology that will get you excited.



Waste can be
valuable!



»The world is my laboratory«

**Theresa Aigner, Research Associate
at Fraunhofer IZM**

As a specialist in sustainability and the cyclical economy for electronic and electrical devices, Theresa Aigner's day job is all about making devices last longer and finding better ways to reuse their material. This includes everything from repair bonus schemes to online games about sustainable manufacturing or even an EU project dedicated to innovative solutions for recycling the plastics from electronics. For her, a sustainable, cyclical industry is more than a job – it is her passion.



Sustainability and recycling are not just empty phrases for you, but values that you cherish. Where does your passion for the environment come from?

I have always been in touch with nature, even as a child. One of my great-uncles had a farm and made his living from agriculture. We spent much of our summer breaks on the farm. If you had asked me what I wanted to be, at age five, I would have said: farmer.

In my teenage years, I became more and more involved with environmental issues. For instance, I was part of the people organizing the Austrian youth climate conference. I got interested in sustainability and natural resources, and that eventually brought me to BOKU, an Austrian university that is focused on just these things. I also spent six months interning with the UN Environmental Program (UNEP) in Paris. I came away from that with my first hands-on experience of sustainability work. Both my bachelor's and my

master's research were interdisciplinary in nature. They covered everything from science and technology to international policy. I still find this particularly key, because today's massive challenges like the climate crisis can only be solved if we think across disciplines and globally. My favorite subject, by the way, was environmental history, because history teaches us a lot about the present.

You picked a field of work that has to deal with lots of challenges and regulations. The environment used to be – and still is – ignored by politics and our society as a whole. What keeps you motivated?

I was always excited about understanding the world and how it works. It needs people who dig deep and really know the ins and outs of specific areas, as well as people who see the bigger picture. You need to work across disciplines. Understanding complex systems and seeing the greater whole – including 'hidden' inequality on a global scale

– keeps me motivated.

Fraunhofer IZM mostly works on microelectronics. That is why the Institute has lots of cleanroom space. However, this also means that a lot of electronic equipment is built at the Institute and will eventually become waste. Can electronics and the environment go together at all?

For my master's degree, I took a real deep-dive into the issue of sustainability and electronics.

While conducting my research, I came to realize just how big of a problem waste electronics or e-waste has become. Even when we use devices for a long time, they will become e-waste at some point. We need to treat our devices better and realize the value of what we call secondary resources. At the rate we are currently throwing out and replacing our hardware, we will drown in waste. We must see electronics and the environment as connected. It was that insight that eventually led me to the environmental team at Fraunhofer IZM. We are working on several fronts to address both of these things together.

Tell us about your everyday work at Fraunhofer IZM.

Running a project consortium means staying on top of lots of little organizational questions. In essence, it means quite a lot of time spent at my desk in the Institute. I like to set aside specific periods of time for the actual R&D work. Currently, we are familiarizing ourselves with new software that calculates the eco-footprint of plastic processing by incorporating various environmental factors. To do this, all energy and material flows are modeled in the software in order to determine, for example, the carbon footprint or water consumption.

To get a sense for the practical side of everything, we go out and visit recycling businesses. That gives you a better feeling for how the process works, but also for the companies doing that work and their needs. Getting in touch with other people: That is one really rewarding part of research projects.

And I always enjoy dealing with other specialists when organizing events or giving presentations. When people imagine a stereotypical scientist, they picture a person in a lab, wearing a white coat. That is not

all we do. We have so many other jobs to do, and the entire world is my laboratory.

Where do you find meaning in your work? What needs to happen for you and your team to go home in the evening and be proud of what you have done?

I find it particularly exciting to be involved in EU legislation because that is where I feel I can have the greatest impact. At first, I would never have thought that this could be interesting, but working at Fraunhofer IZM has shown me how much influence you can have and how you can steer things in the right direction. Lots of things only ever get done, because there is a law that says: This is how you have to do it. However, I am still an idealist at heart, and I like to think that we do not need laws for people to do the right thing.

In my different jobs or when visiting project partners abroad, I was fascinated by how differently waste, especially e-waste, is treated around the world. Waste is a very subjective issue, and economics often have the last say. But waste can be valuable! With our projects, I hope that we can get this mindset change and make people aware of the materials and resources around us.

What are your goals, in private and at work?

My next big goal is to keep learning. I am just about to complete training on lifecycle assessments, and that has been a great help for my work. And I am looking forward to presenting the results of our eco assessment of plastics recycling to our colleagues in the field. It is so exciting to be able to see how other experts react and to hear their ideas.

In general, I love sharing knowledge. And environmental education is just super interesting! This applies to my personal life as well. I just want to do my part.

»I like being part of the solution!«

Sven Schmidt, Trainer at Fraunhofer IZM

It is hard to pinpoint what exactly Sven Schmidt is – a microtechnologist, a process owner for mechanical drilling, cutting, substrate integration, or laser processing, or a lab manager. But above all, he is an educator through and through. A self-admitted latecomer to the field, he completed his apprenticeship as a microtechnologist in the industry. He has been with Fraunhofer IZM for much of his career, and he loves the sheer range of the facilities. In our interview, Sven explains why he would now prefer a microtechnologist apprenticeship at a research institute, but also why he would not change anything about his own experience.

What led you to become a microtechnologist, and what inspired you to become a trainer yourself?

I have always been interested in science! That does not have to be the case, judging from my experience as a trainee and a trainer. I see lots of people who discover their passion for science quite late in life, but then, they are often even more passionate. At age 28, I was far from the oldest in my class during training. After completing my apprenticeship, I soon switched to Fraunhofer IZM. Word of mouth told me that the colleague in charge of our apprentices could use a helping hand, and I was always the type of person who likes to guide people and share his know-how. So, I thought: That's a perfect fit! And I was right.

Tell us about your typical day at work as a trainer.

My colleague and I split the supervision work between us. He prefers the organizational aspect and takes care of registrations, and I like to take over the everyday issues. I am here to help when our trainees need advice or are worried about something. A lot of things cannot wait or might not be good to discuss in a group.

That's when our lunch break becomes the perfect opportunity. Even when I was still a trainee, I always thought the opportunity to chat and share with other people my age was really enriching. And I still like being part of my trainees' lives. I love being part of the solution!



From what you see, what do trainees at Fraunhofer IZM experience as particularly special? How does the training differ from an apprenticeship in industry?

Compared to industrial enterprises, we cover the entire range of processes. Companies often only offer a selection of services that they are specialized in. It was like that during my training as well. That has its advantages, but it prevents you from getting to know and testing different things. Our equipment here feels endless. In fact, I think there are more machines than people. That means that we can cover almost all processes that any microtechnologist would ever work on. And our trainees can decide where their journey will take them.

What would you tell your younger self?

Follow your dreams! They keep you interested and motivated. There is nothing worse than getting up in the morning and not caring about the day ahead. My path here has been far from straightforward. But in the end, every choice I made and every experience I had got me where I am today. Take a look at what's possible and try what interests you!



Training

at Fraunhofer IZM:

- Do you want to work in a laboratory?
- Do you like technology, physics, and chemistry?
- Do you want to contribute to modern electronic products?

Microtechnologists work in the semiconductor industry, at research institutions, or at universities. They produce the things that we all use every day: Laptops, smartphones, and the proximity radars in cars, for example. None of these products would work without the tiny powerhouses made from microelectronics and microsystems. The microchips and circuits in them are made by microtechnologists. It is a field that welcomes female professionals.

Watch our video
on training
at Fraunhofer IZM:



Fraunhofer IZM offers several apprenticeships positions as microtechnologists (m/f/d) every year. The three-year combined apprenticeship, certified by the Chamber of Commerce, focuses on microsystems engineering and involves working with bonding and interconnection technology in labs and cleanrooms. It is a combined apprenticeship, because it covers theory (vocational college) and practice (Institute) parts.

Applications close on 31 December each year, and the training typically starts on 1 September. In 2023, Fraunhofer IZM received the Berlin Chamber of Commerce's Seal of Approval for "Excellence in Vocational Education" in recognition of the quality of our training and talent development programs.

Apply now!



From facts to a-ha moments

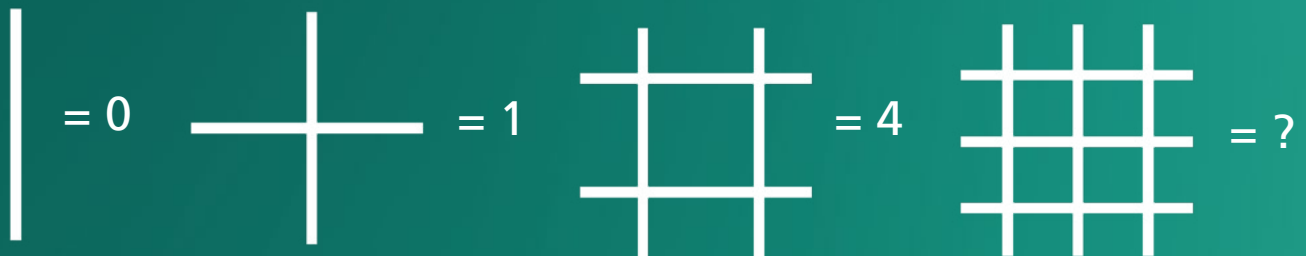
Up for a challenge? This magazine is not for passive readers – time to get your brain working! Even if you like number or word games or cracking a secret, this is sure to be a tough nut to crack.

Time for some logical thinking:

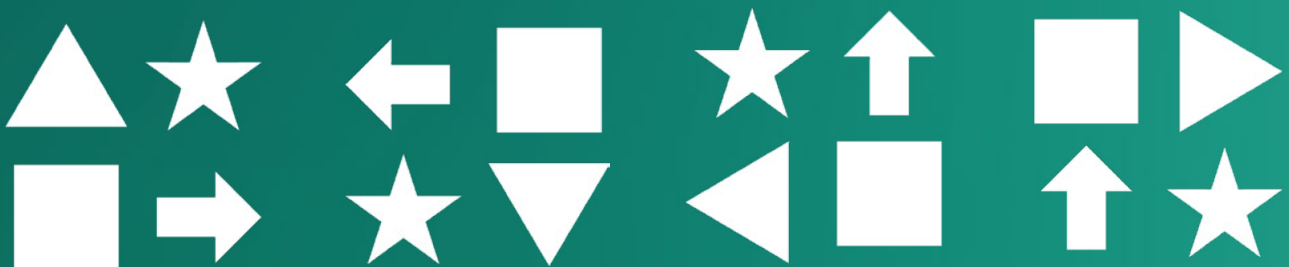
Have a look at this sequence and tell us what comes next. Select the correct answer: A, B, C, or D?



A sequence of figures, but one is missing! Do you see the pattern and know which figure fits the gap?



Three of the following figures are rotated – which one is the odd one out?



Have you solved all the riddles? The first one shows you a clock face, so C is the right answer. In the second puzzle, you probably quickly figured out the 9, and the second pattern in the series turned differently.

This image shows you several things – an object, a concept, or something else entirely.
Look closely and you will see what links them – you have to notice the devil in the details!

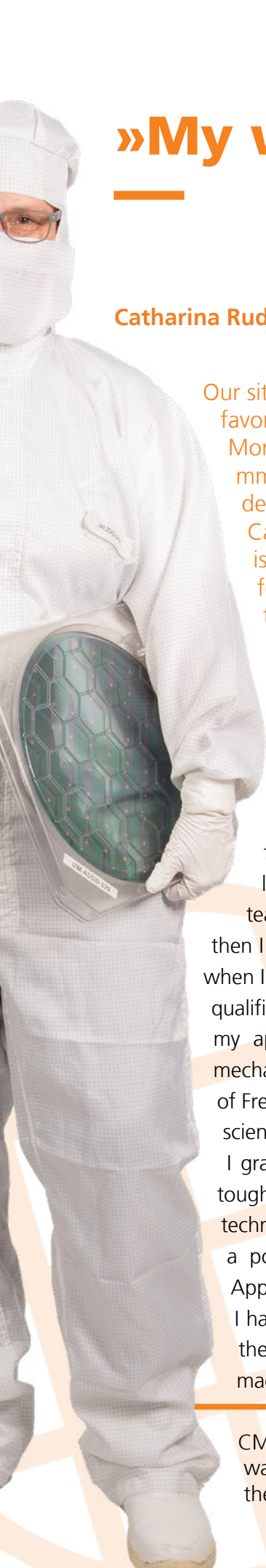


Did you catch all of the terms? Microbiology, microbes, microtechnology, microchip, micro-USB, microscope, micro-wave, microlith, microfiber cloth, microphone, microorganism, microtome, micromotor.



It feels
like shaping
our future.





»My word is my bond«

Catharina Rudolph, Group Lead at Fraunhofer IZM-ASSID in Moritzburg

Our site in Dresden's Moritzburg is not far from the famous palace where everybody's favorite Christmas movie, *Three Wishes for Cinderella*, was shot. In our cleanroom in Moritzburg, we are working primarily on wafers and technologies in the 200 to 300 mm range. The research and processing facilities at Fraunhofer IZM-ASSID were designed with real-life manufacturing and compatibility with actual industry in mind. Catharina, the Group Lead, has been involved almost from the beginning, and she is an inspiration for all women interested in a career in technology. Her passion for science and technology is evident in her work, as is her dedication to inspiring talented young people to pursue careers in the industry.

Catharina, tell us about your story: How did you come to a career in science?

It was born in East Germany and have experienced quite a few changes and revolutions in my life. Initially, I wanted to become a teacher at a job training college, but then I chose a different course of study when I got my university entrance qualifications alongside completing my apprenticeship as a maintenance mechanic. At the Technical University of Freiberg, I started studying materials science with a focus on metals.

I graduated in 1995, but that was a tough time for a woman to find a technical job. In the end, I secured a position as a service engineer at Applied Materials in Dresden, where I had the opportunity to commission the company's very first CMP machine in Europe.

I had a lot of support, worked as a service engineer, process engineer, and technologist, but I wanted to assist my clients for longer than just the very first link in the chain. Because of this, and because I had got to know a lot of people in the industry, I was approached by a machine manufacturer working in process development. At Qimonda, I got to know all of the processes in semiconductor development, and I still use this knowledge today. It was a great time. And surprise, surprise: My employer even supported my plan to start a family.

How is working for a machine engineering business different from process development?

A machine manufacturer builds the machines that are used to process wafers, whereas process development is about using these machines to carry out certain processes. The move to process development is a crucial point on the way to integrated production.

CMP stands for chemical-mechanical polishing or planarization. It is a method of polishing wafers that removes tiny layers very evenly. CMP is the current state of the art for achieving the planar surfaces we need.

Okay, thanks – back to your story!

After Qimonda went bankrupt, I was looking for new opportunities. I heard that Fraunhofer IZM was coming to Dresden. The prospect of more research and less pressure in the industry was appealing. So, I joined Fraunhofer IZM-ASSID as their fifth employee.

And we love to have you on board! Right now, fifteen years after it all started, you are heading a group. How did you get where you are today?

In 2014, I took over the group working on wet chemistry, and in 2018, I assumed responsibility for our personnel. Today, I have a team of seven colleagues, and I am proud of their work every single day. My normal day starts with planning for and tackling challenges such as new queries from our clients or, what we call ‚tool-downs‘, where machines break down.

Fraunhofer IZM-ASSID is famous for its large cleanroom. But anybody who has seen it knows that no space is wasted. What does your team do in it?

We work with the standard tools that are used in semiconductor manufacturing. In my group, for example, we run plating and cleaning tools that are used to perform specific processes on wafers.

How would you respond to someone asking whether they should pursue a career in research?

Do it, now! Industry typically has less freedom, as clients have more defined requirements. At Fraunhofer, on the other hand, we often work on solutions when our clients get stuck with their machines or processes. This calls for creative thinking and for the ability, or actually, the need to think outside the box. I work on technologies that will only become relevant in five to seven years' time, e.g. for use in smartphones. It feels like shaping our future.

What would you expect from your junior colleagues?

To stay open-minded and curious! I supervise school interns and I just love leaving teenagers with a positive impression of our work. If I could speak to my younger self, I would say: Do not regret anything and keep an open mind about new experiences. Every experience, whether in industry or in research, has its place.

As they say about making a promise: My word is my bond.



The future is now

The nature of work is constantly changing. Several trends are impacting the reality of how the world will work in future. The digital revolution, sustainable technologies, and artificial intelligence are just a few of these trends. These trends are affecting many areas of the economy and shaping the microelectronics of tomorrow.

Let us take a look at the latest trends and developments that our researchers are working on.



Artificial Intelligence

Dennis Choy, Research Associate in the Physical Design Tools & Software (PDTs) Group at our partner, the Technical University of Berlin

»Artificial intelligence encompasses all methods for solving problems that go beyond traditional algorithms. Instead of fixed strategies, AI defines a model space that is optimized by feeding in large sets of data and learning algorithms. These methods are

particularly effective for complex tasks like image or voice recognition. Fraunhofer IZM is part of AI research projects, in particular in the development of microelectronics and sensors for data capture, as well as providing AI-based software for domain-specific applications. One example is the BMW-fundeds ProgressivKI project, which supports the development of safe automotive electronic systems through a modular AI platform. An AI model was developed that optimizes the selection and placement of blocking capacitors and facilitates manual placement through real-time impedance calculation.«



Chipselets

Dr. Michael Schiffer, Department Head Wafer Level System Integration

»Chipselets are tiny specialists. They are miniature semiconductor components that work together in a chipset system, instead of cramming all features on a single, monolithic system-on-chip. This division of labor enables cost-efficient development, as large chips, known as system-on-chip, are expensive to produce using the latest technology and often still have too low a yield. Chipset systems allow for greater

flexibility in terms of efficiency and scalability. Fraunhofer IZM has teamed up with other Fraunhofer Institutes to develop systems like the AI chip design as part of the STXmod project. We are also contributing to the APECS pilot line, in which all Fraunhofer Institutes working on microelectronics collaborate with other European partners to research heterogeneous chipset integration. We will build up the facilities in my department over the next two years, giving us the very best equipment for our research.«

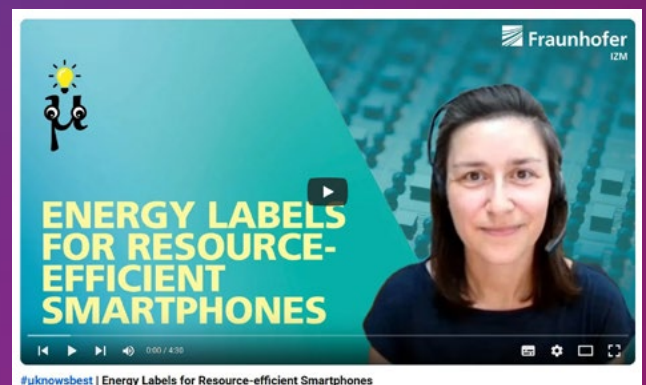
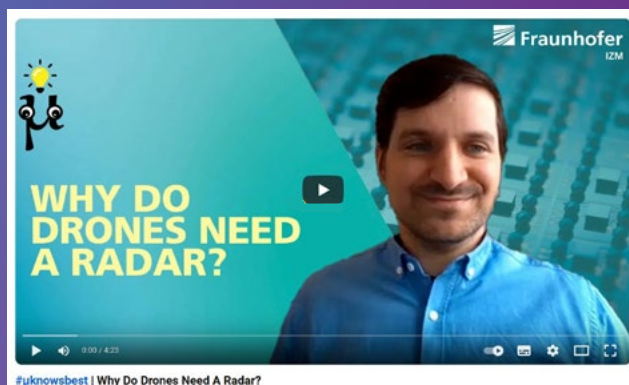
#μknowsbest

#μknowsbest: This is how we make microelectronics accessible to everyone. Students at Fraunhofer IZM came up with the idea and hashtag. It gives people an easy-to-follow introduction to the terminology and issues at our Institute and gets young people excited about our work. μ stands for micro – the tiny things that are so big in our world.



What does that mean in practice?

It means new, short quiz videos produced every month. Researchers, students, or managers at our Institute are given half a minute to answer three questions. That gives us exciting insights into their work and the projects at the Institute. We also regularly pick a term from the field of microelectronics and explain it in an easy-to-understand manner in the glossary.

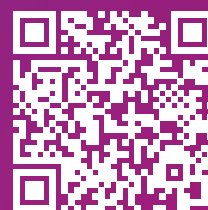


Interested?

Watch our videos!



Read our glossary!



»It all started with a toy chemistry set«

Dr. Tanja Braun, Department Head System Integration and Interconnection Technologies

Science has always been a source of fascination for Dr. Tanja Braun. After studying mechanical engineering at the Technical University of Berlin, focusing on polymers and microsystems, it was chance – as she freely admits – that brought her to Fraunhofer IZM. One of her friends had applied here in 1999, so she followed suit, first by completing her diploma and doctoral research at Fraunhofer IZM. In 2016, she became a Group Lead and was later entrusted with running our largest department in 2024. She loves the autonomy in her work and the opportunities to try out her ideas. Let us find out more about the engineer and Department Head for System Integration and Interconnection Technologies and gain insight into the everyday life of a leader at an institute dedicated to applied research.

You chose to come to Fraunhofer IZM because ...

I was always keen on science and technology, and I had the opportunity to start here in a group that worked on equipping and encapsulating microelectronic assemblies.

At Fraunhofer IZM, we have extremely good equipment at our disposal. That allows us to develop and test processes, which also means setting up, conducting, and organizing trials that you could not do almost anywhere else.

The best thing about your work is...

its diversity! When you come in with a good idea, you can spin it into so many exciting directions. We have a lot of autonomy and opportunities to test our ideas. I love finding solutions that require real thinking. My colleague, Karl-Friedrich Becker, always compares us to the TV show „House“.

The one project that always sticks in your mind was...

working on the Panel Level Packaging Consortium with our seventeen partners, including Intel, Amkor Technology, and AT&S Austria Technologie.

It is especially exciting for me to work with so many different types of people in different projects. For the panel level packaging technology, the effective choice is to place a rectangular object – the chip – on a rectangular basis. But we have a round wafer, so we took the international consortium to develop fan-out wafer level packaging on these large rectangular panels. This means that we can process more chips in parallel, and we waste far less material. For a research institute, this type of consortium was quite a unique experience, because we worked on a crowdsharing basis, with several industry partners pitching in and sharing their know-how.

The next generation of researchers needs...

1. Curiosity is key! It matters most of all that you stay interested in your work and that you enjoy what you are doing. Our field needs people who are passionate, who can think for themselves, and who want to get things moving forward.
2. Organizational talent and communication skills, because you often work on multiple projects at the same time.
3. And finally: The grit to keep going!

Three things that you wish for in the future...

I would love for the public image of engineers and scientists to change. Of course, there are days that I spend mostly on my computer or in a lab, but for most of my normal work, I plan, I organize, I speak to people. As a society, we should start to celebrate expertise again. An expert career is something exceptional!

And lastly, I would love to see more young people getting excited about STEM subjects. Because your passion for subjects like physics, chemistry, or math starts long before you start thinking about your course of studies or your choice of career. Schools should begin to spread more awareness for careers in the sciences, especially for girls. We need more women to choose this life. And remember, it all started with a toy chemistry set in my case!



Our departments

Wafer Level System Integration (WLSI)

The WLSI department is responsible for advanced packaging and system integration technologies for all microelectronics products relating to smart systems. Around sixty researchers are working at two of our sites, in global cooperation with product and system makers, and users, and materials suppliers from the chemical industry.

RF & Smart Sensor Systems (R3S)

The R3S department is tasked with researching and developing application-specific wireless sensor nodes, radar and proximity sensors, and wireless communication and high-performance computing modules for a vast range of applications.

System Integration & Interconnection Technologies (SIIT)

Consulting, process development, technological systems: The SIIT department works on processes and materials for interconnection technologies on the board, module, or package level, and on ways to integrate electrical, optical, and power electronics components and systems.

Environmental & Reliability Engineering (ERE)

The ERE department supports new technological developments en route to the market, with environmental and reliability analyses, ranging from nano-characterization to system-level assessments and optimization.



Find your perfect department



Goodbye micromanagement. Hello network!

Stable bonds are crucial in bonding and interconnection technology – and that also goes for the people involved. Our alumni are more than former colleagues: They are the bonds holding a network together that spans across projects, companies, and years and decades of work.

We stay connected – because good connections are built to last.

Hi Niels und Gudrun, how long has it been since you were at the Institute? And what did your time here do for your careers?



Niels Grabbert, CEO & CO-Founder Stenon

I started at Fraunhofer IZM in 2010, as a research assistant. I eventually finished my master's research there, working on a biosensor that can spot toxins in blood in real time. That became my very first patent in the end.

My time with IZM taught me a lot about scientific work, about solving complex problems, and about finding funding for my work – great for when I started my own company Stenon. I love to think back to the great surroundings, with the brick architecture, and to the full cleanroom setup. That was a unique experience for a student.



Gudrun Feix, Specialist for Power Electronics Systems at ECPE

In 2019, I joined the European Centre for Power Electronics e.V. as a specialist for power electronics systems. I knew the ECPE since my time at the Technical University of Berlin.

And I stayed in power electronics. I am now helping to manage projects that I would have worked on in the past and organize events that I would have loved to attend.



Whenever I need to find a real expert on a specific issue, I usually go back to my contacts from my time with IZM.



Great to hear that, Gudrun! We always love hearing from you
What about you, Mathilde?



Mathilde Billaud, Research Engineer at CEA-Leti

When I think back to my time at IZM, I always remember the great conversations and the way we worked together. I came there with just a bit of knowhow about CMOS processes, and when I left, I had all this knowledge about bonding technology or environmental analysis – exactly what I am researching today.

I now work as a research engineer at CEA-Leti in Grenoble, where I combine environmental aspects with the work on 3D integration and interconnection technology.



🧐 We miss you, Mathilde, but it is great to have you as our direct line through to CEA-Leti. We hope you will continue to push ahead in your career!
And what about Stephan. Google: Wow!



Dr.-Ing. Stephan Benecke, Head of Carbon Footprinting, Google Cloud

I love thinking back to my time at Fraunhofer IZM. That is where I learned to understand complex electronic systems and to find the common ground between technology and the big questions like sustainability. This knowledge is invaluable here at Google, where we are preparing for a carbon-neutral future.

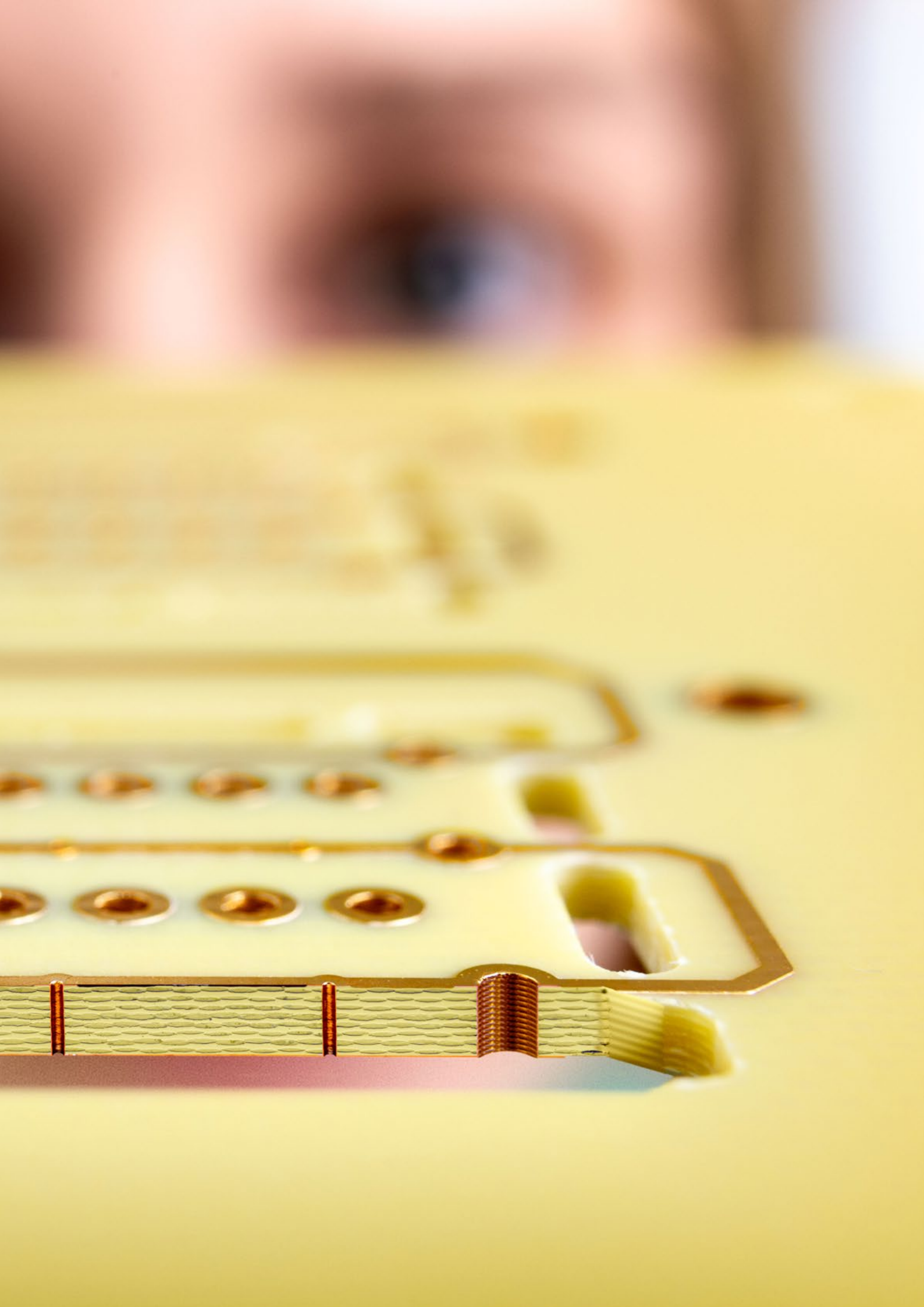
I still work with Fraunhofer IZM in industry partnerships, which means that I am still in touch with many of my colleagues.



@Niels, @Gudrun, @Mathilde und @Stephan: It is great to stay connected, even from afar. And it is even better to hear that Fraunhofer IZM was not just a steppingstone in your careers, but a place that you love to come back to. We are looking forward to seeing you again! 😊







Your career at Fraunhofer IZM.



www.izm.fraunhofer.de/de/karriere.html

Join the team.