IPCEI
on Microelectronics

IPCEI Microelectronics

Infineon

2022-02-17

Meeting Agenda

- Infineon at a glance
- IPCEI Microelectronics
- Spillover Activities
- Summary and Q&A

Infineon at a glance

IPCEI
on Microelectronics

Infineon is your partner for electrification and digitalization

top 10
semiconductor company

~50,280
employees*

Electrification

- Energy efficiency
- CO_2 saving
- Cost savings

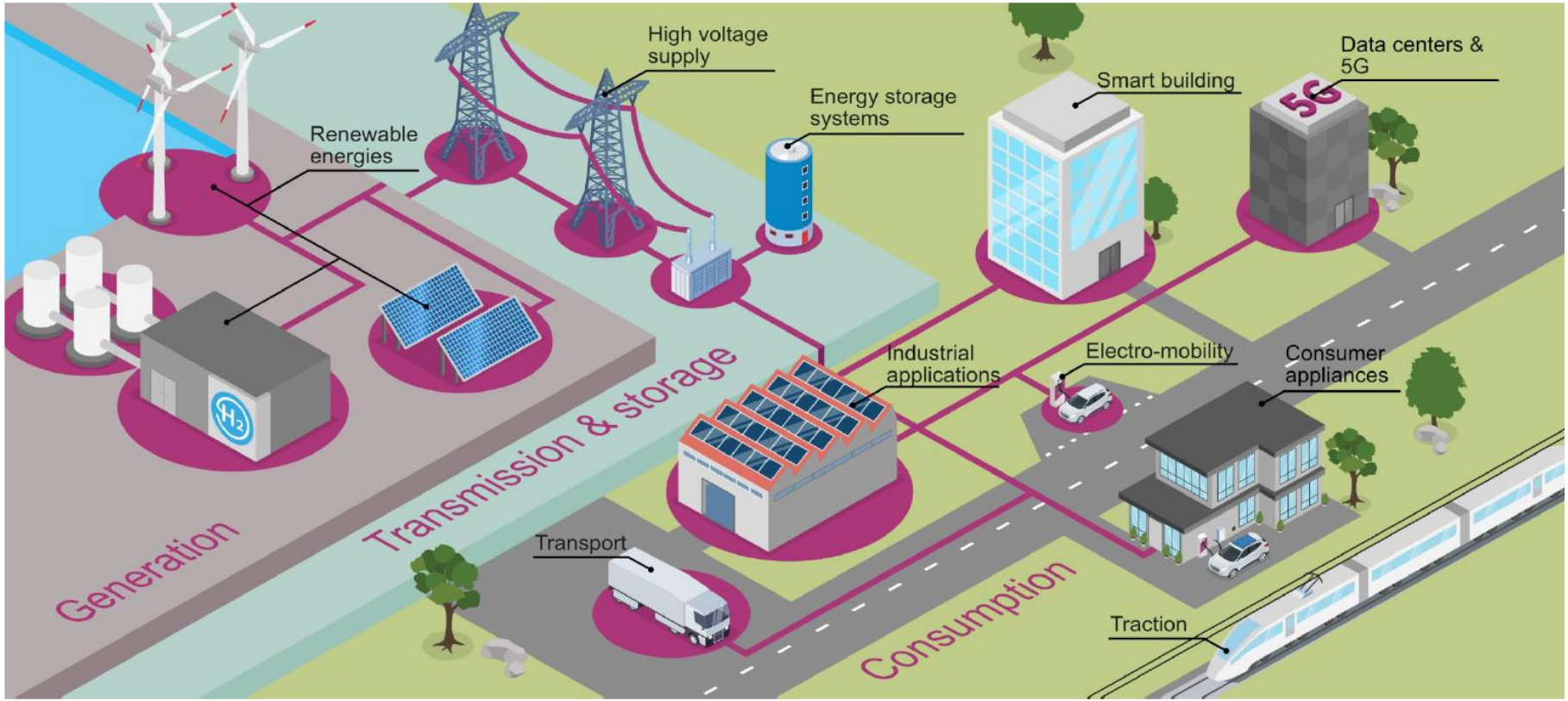
Digitalization

- Productivity
- Comfort
- New use cases

9%+ I 19% I 13%
target operating model**

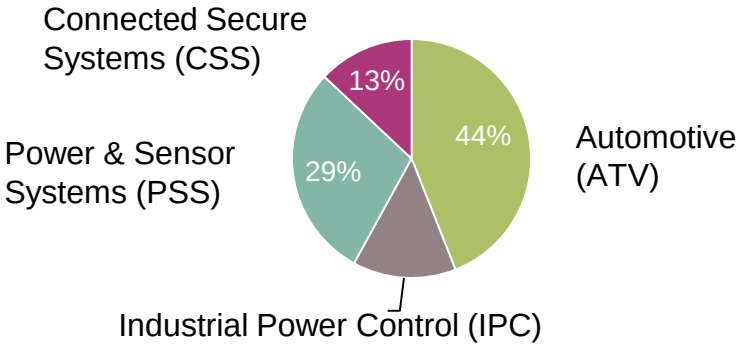
* as of 30 September 2021
** over the cycle: 9%+ revenue growth; 19% Segment Result margin; investment-to-sales ratio of 13%; targets to be approached as Cypress integration progresses

The energy conversion chain uses Infineon products



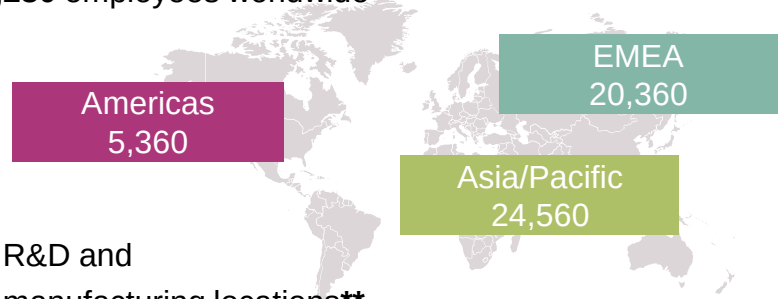
Infineon at a glance

Business segments revenue*



Employees*

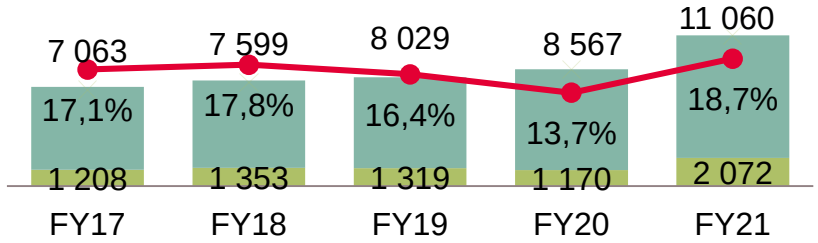
50,280 employees worldwide



56 R&D and

20 manufacturing locations**

Financials



*2021 Fiscal year (as of 30 September 2021)

**as of 30 September 2021

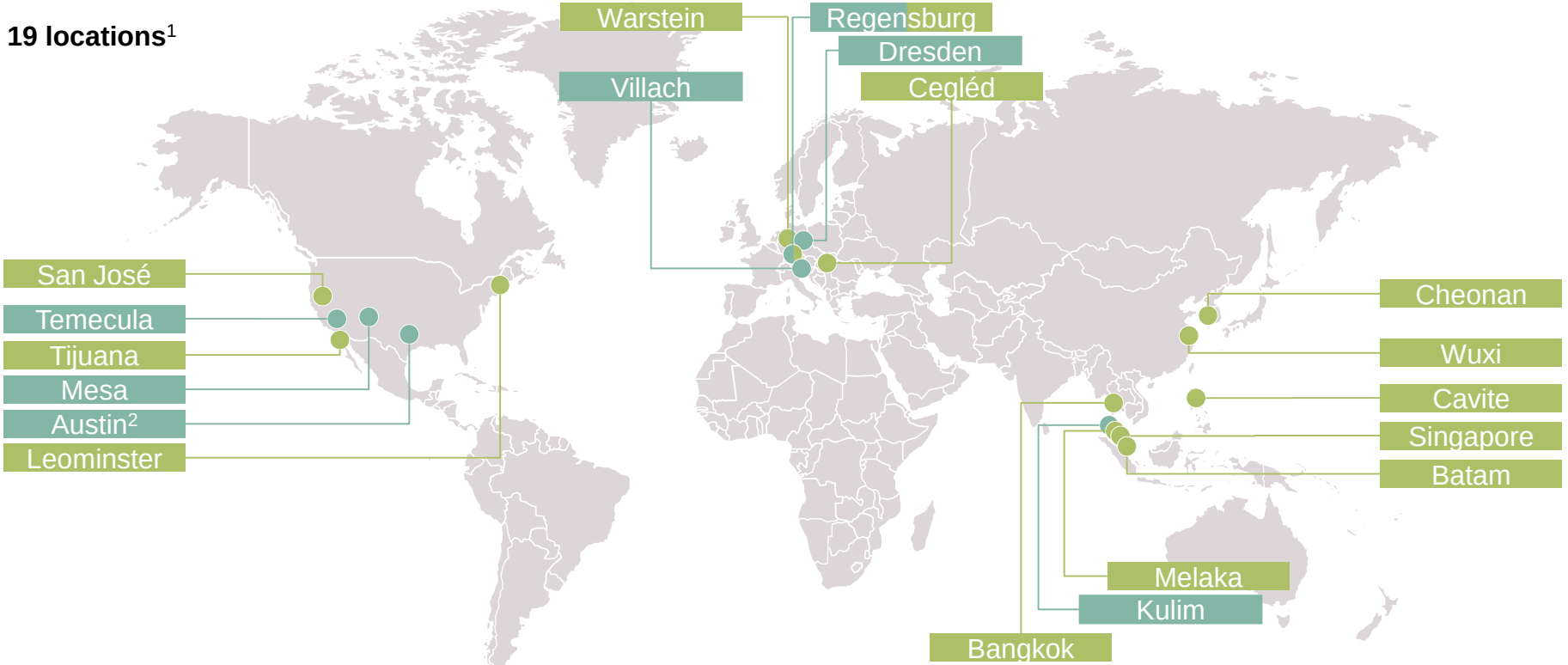
Market position

Automotive	Power	Microcontroller
		
# 1	**# 1**	**# 3**
Strategy Analytics, April 2021	Omdia, September 2021	Omdia, August 2021

For further information: Infineon Annual Report 2021

Infineon is globally positioned with its network of front-end and back-end manufacturing facilities

19 locations[1]



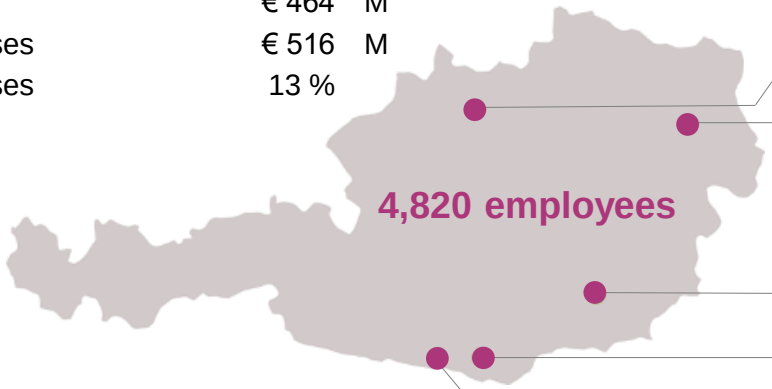
[1]as of 1 April 2021

[2]Penang is assigned to the Austin site

Infineon Austria – Company overview

Fiscal year 2021 (as of 30 Sep. 2021)

Turnover	€ 3,898	M
Earnings before taxes	€ 361	M
Investments	€ 464	M
R&D expenses	€ 516	M
R&D expenses in % of turnover	13 %	



Linz (R&D)

Vienna (Sales)

Graz (R&D)

Klagenfurt (IT)
international Headquarter role

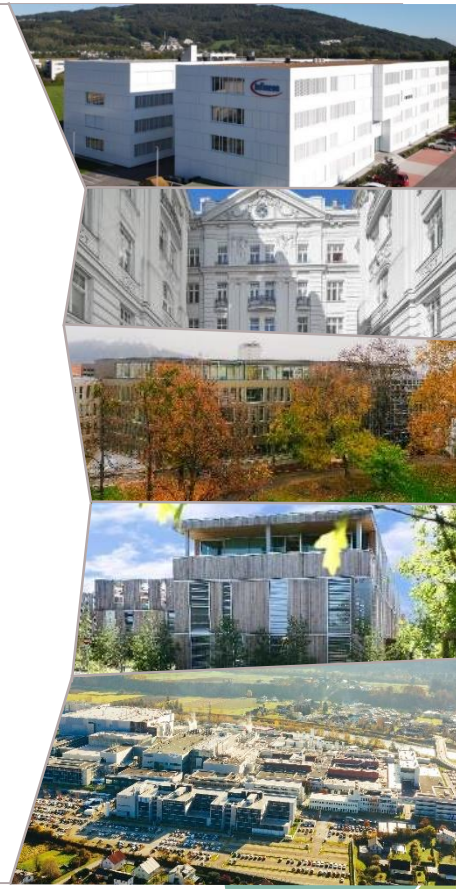
Villach (R&D, P, B, IT)
international Headquarter roles

Subsidiaries in Austria

Infineon Technologies Linz
IT Services, Klagenfurt
KAI, Villach

Foreign subsidiaries

Infineon Technologies Romania SCS (R&D)
Infineon Technologies (Kulim) Sdn Bhd, Malaysia (P)



Extensive competencies

Infineon Austria combines **research & development**, **production** and **global business responsibility**.

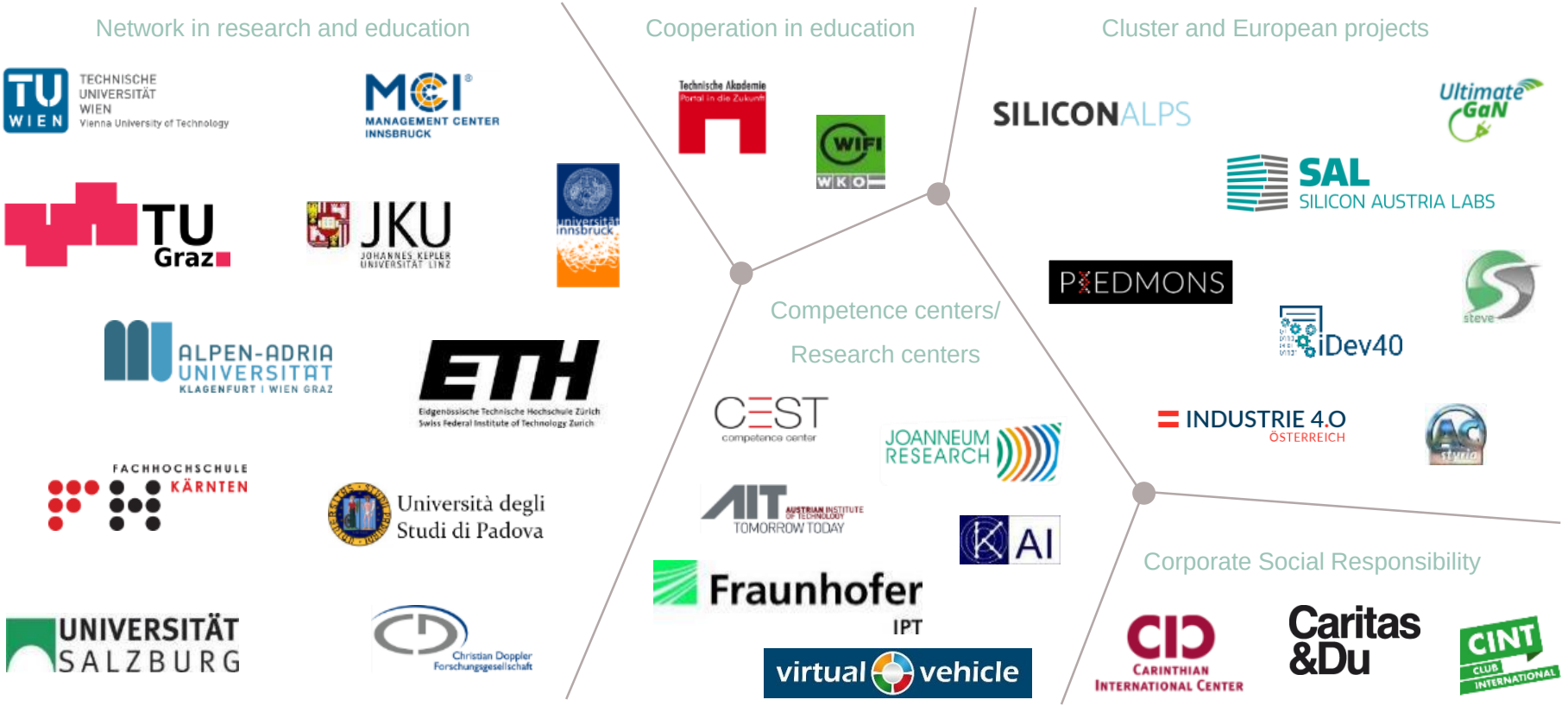
The board of Infineon Technologies Austria AG

Dipl.-Ing. Dr. Sabine Herlitschka, MBA
CEO and Technology Director

Dipl.-Ing. (FH) Oliver Heinrich
CFO

Dr. Thomas Reisinger
Operations Director

Selection of important cooperation partners



IPCEI Microelectronics

IPCEI
on Microelectronics

Semiconductors on the global geopolitics agenda

Chips are at the centre of the global technological race. They are the bedrock of our modern economies and essential for the goods that we use on an everyday basis – we have them in our smartphones… Or now…with the energy topic, they are in the electric grids. So the chips are crucial in almost every device."

Ursula von der Leyen, President of the European Commission at the State of the Union |
– European Chips Act, 8 February

"These chips, these wafers… It's all infrastructure….We need to build the infrastructure of today, not repair the one of yesterday."

Joe Biden, President of the US at the CEO Summit on Semiconductors | 12 April 2021

Semiconductors on the global geopolitics agenda

- **Growing global demand** for semiconductors due to accelerated pace of digitization and electrification
- The **shortage of semiconductors** has concrete consequences
- Accelerated investment across the world in microelectronics education, research and manufacturing to secure supply security, including the EU Chips Act.

IPCEI Microelectronics: partners and technology fields

Energy Efficient Chips

- CEA-Leti
- Cologne Chip
- Globalfoundries
- NXP Semiconductors Austria
- *RayICs*
- Soitec
- ST Microelectronics
- X-FAB

Power Semiconductors

- 3-D Micromac*
- AP&S International
- AT&S
- CEA-Leti
- Elmos Semiconductors
- Infineon
- Infineon Austria ★
- MURATA
- Robert Bosch
- SEMIKRON
- ST Microelectronics
- X-FAB

Smart Sensors

- CEA-Leti
- *CorTec*
- Elmos Semiconductors
- Fondazione Bruno Kessler
- Infineon
- Robert Bosch
- ST Microelectronics
- TDK-Micronas
- LYRED
- X-FAB

Advanced Optical Equipment

- AMTC*
- Carl Zeiss

Compound Materials

- AZUR Space Solar Power
- CEA-Leti
- Integrated Compound Semiconductors
- IQE
- Newport Wafer Fab
- SPTS Technologies
- OSRAM
- SYNRED
- Soitec
- ST Microelectronics

Austrian consortium: AT&S, Infineon, NXP

SMEs: in "*italic*"
Associated partners:*

IPCEI Microelectronics in a nutshell

Strategic European project

- Contributing to EU Green Deal and Technological Sovereignty
- 4 EU members states & UK, 30+ partners
- Approved in December 2018, Austria joined in March 2021

Funding

- Funding per national governments, approval by the EU Commission
- State aid instrument
- Activities beyond R&D are funded | First Industrial Deployment

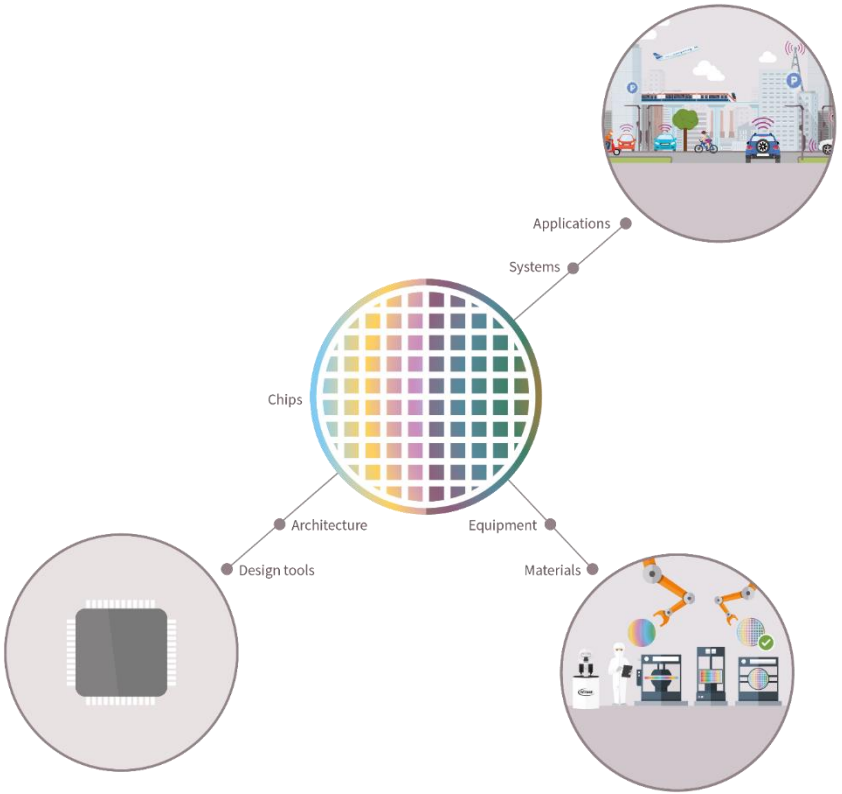
Technology fields

- Energy-efficient chips, power semiconductors, sensors, advanced optical equipment and compound materials

Positive spillover effects

- Knowledge generated will be disseminated via spillover activities
- Supporting EU STEM Talent and universities
- Spillover activities are not publicly funded

From R&D&I to First Industrial Deployment (FID)



Enabling strategic value chains in Europe

› Energy, automotive, smart manufacturing…

Building on pre-competitive research

› Complementing EU/national R&D&I funding, ECSEL JU, Eureka, *etc*.

First Industrial Deployment

› Stabilizing next generation products and processes

Infineon Austria in IPCEI Microelectronics

R&D&I

- Technology Development and First Industrial Deployment in
  - Energy Efficiency (Si, SiC, GaN)
  - Electro Mobility (Charging, Sensing)

Spillover Activities

- Dissemination of R&D&I
- New collaborations with universities, STEM Talent, and industry
- Focus on Eastern and Southeastern European countries

Collaboration Projects

- With 12 Companies
  - Raw Wafer Engineering
  - Equipment & Process Innovation
  - Chip Embedding & Assembly Packaging

IPCEI on ME subtasks

OptiMOS 6™

CoolSiC™

CoolGaN™

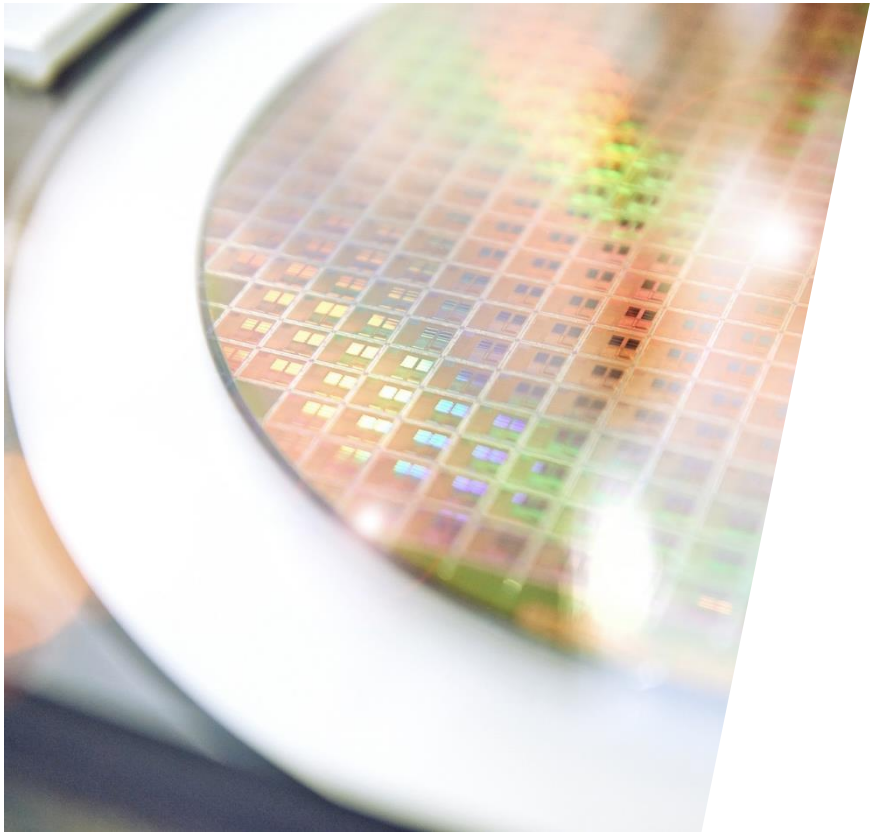
Active Rectifying Diode

Future Smart

XENSIV TPMS & Trapped Ions

OptiMOS™ 6 Technology

IPCEI on ME subtask



- Silicon (Si)-based Technology in 100V
- Reliability of up to +75 times longer lifetime depending on the application
- Less heat production during operation
- More energy efficient than its predecessors
- Saves electricity consumption of 170 households within 1 year for telecom applications
  (*considering average yearly household energy consumption in EU)*

OptiMOS 6™ 100V in your daily life

OLED TV
Makes watching your favorite TV show more energy efficient.

Wireless Charging
Cutting cables necessary for charging everything from smartphones and laptops to kitchen appliances and cars.

SiC Technology

IPCEI on ME subtask

- Silicon carbide (SiC)
- Providing higher power levels in an extremely effective and efficient way
- Reliability of up to +75 longer lifetime
- System size reduction providing smaller products
- Infineon has expertise in SiC technology for over 20 years

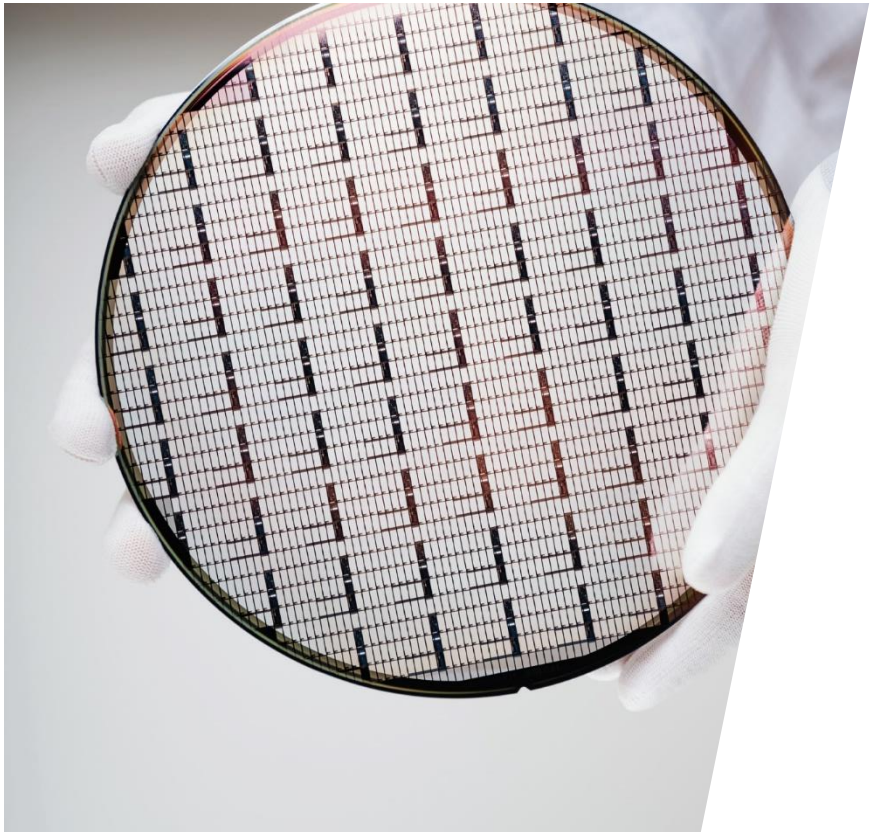
CoolSiC™ in your daily life

Traction
Highly efficient components that reduce energy losses in trains…

eCars
…as well as in electric cars.
So you get more comfortable and greener to your destination!

GaN Technology

IPCEI on ME subtask



- Gallium nitride (GaN)
- Next-generation power semiconductors with a ten times lower carbon footprint
- Operates at higher voltages, temperatures and frequencies
- System size reduction providing smaller products
- Infineon’s CoolGaN™ chips focus on high performance and robustness with lifetimes beyond 15 years

CoolGaN™ in your daily life

Data and server center

CoolGaN™ products lead to:

- lower power consumption
- lower temperature while operation
  → reducing cooling affords of servers
- environmental friendly digitalization
  Global Internet data traffic grew more than 40% in 2020 alone, while the energy consumption remains almost the same due to power electronics.

InnoRec Technology

IPCEI on ME subtask

- Less fuel consumption due to increased generator efficiency up to 8%
- Qualification as eco-innovations, defined by the European Union
- CO2 emissions reduction of a car by up to 1.8 g/km

Light vehicle generators

In a conventional car, the generator produces the electric energy for charging the battery and supplying a growing number of safety and comfort features such as driver assistance systems, air conditioning and infotainment.

XENSIV™ tire pressure monitoring system (TPMS)

- Protects from tire failures which are caused by under-inflation and slow leaks
- Eliminates the need to manually check the air pressure
- Automatically issues a warning message on the display
- Correct tire pressure safes you fuel and therefore money
- Get to your destination, safer, greener and more comfortable
- Fast growing market: 2-wheelers (e-bikes/e-scooters)

Trapped ions enabling supercomputers of the future

- Accelerate the development of quantum computers
- Solve complex tasks faster and more efficient than today's computers
- Infineon has leading expertise in this research field, taking ion traps to the next level: From prototypes to volume production
- Founding member of QUTAC, the Quantum Technology & Application Consortium

Trapped ions enabling supercomputers of the future

- In future quantum computers can make a significant contribution e.g. to:
  - Chemistry:
    Research and faster development of polymers,
    a material used in every household
  - Logistics:
    Optimizing route planning
  - Drug development:
    Extensive laboratory experiments may
    be reduced in the future

FUTURE SMART Technology

IPCEI on ME subtask

- Energy-efficient functions in as little space as possible
- Smart switches increasing performance and reliability of your car’s control unit, responsible for processing and communicating information

Driver assistance systems
helps to enable CO2 reduction as well as driver assistance systems up to fully autonomous cars. So you feel more safe while driving to your destination.

Infineon Austria IPCEI Team

Martin Mischitz
Project Coordinator

Emir Demircan
Lead Spillover Activities

Benjamin Bastian
Lead HR
Spillover Activities

Cathrin Chromy
Event Organization

Christina Tiefnig
Internships

Veneta Ivanova
PhD Program

Johannes Hochstetter
Legal

Sonja Bezdek
Procurement

Christian Lehner
PhD Program In-Kind

Andreja Rojko
Funding Manager

Melanie Kordasch
Communications

Julia Jaindl
Funding Manager / Summer/Winterschool

Spillover activities

IPCEI
on Microelectronics

IPCEI on Microelectronics

IPCEI investment in EU microelectronics R&D&I creates new opportunities

Unlocking nearly €8 billion new public-private investment and fueling the growth of European microelectronics industry
(Source: EU Commission)

IPCEI on Microelectronics

Spillover activities

Jobs and skills

Raising new job opportunities
in the EU microelectronics industry,
requiring advanced knowhow and skills

IPCEI on Microelectronics

Spillover effects

Growth

Reinforcing collaborations with SMEs, startups, and large enterprises along the microelectronics value chain with downstream and upstream players

IPCEI on Microelectronics

Spillover effects

Innovation

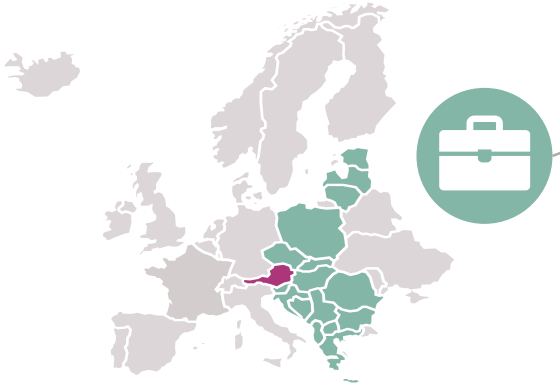
Enabling new R&D collaborations across Europe

IPCEI Microelectronics Talent Spillovers

Spillover activities strengthening semiconductors talent pipeline

- BSc and MSc Internships
- PhD Program
- Electronics Awareness Campaign
- University Lectures and Workshops by Infineon Experts
- Infineon Summer and Winter Schools
- HW/SW Kits for educational activities

IPCEI Student Internships at Infineon



IPCEI on Microelectronics	Internship	Bachelor Thesis	Master Thesis	Summer Internship
Employment Period	All year			June-September
Duration	Min. 4 months at Infineon Austria			
Work place	In principal Infineon Austria: Graz, Klagenfurt, Linz, Villach Additional: subsidiaries in Romania & Hungary			
Field of Study	STEM (Science, Technology, Engineering, Mathematics)			
Educational level	Bachelor/Master Student	Bachelor Student	Master Student	Bachelor/Master Student

IPCEI Student Internships: Match of Academia & Industry

Fields of studies*

- Automation Engineering
- Chemistry
- Computer Science
- Electronic / Electrical Engineering
- Industrial Engineering
- Manufacturing Engineering
- Materials Science
- Mathematics
- Mechanical Engineering
- Mechatronics
- Physics
- Process Engineering

Fields of work*

- Analog/ Mixed Signal Design
- Test Engineering
- Digital Design
- Internship/ Thesis
- Technology Development
- Production Frontend
- Software Engineering

*non exhaustive list

IPCEI Student Internships at a glance

Our Offer

- Practical experience abroad
- Inspiring international environment
- Access to state-of-the art laboratories and exclusive internal events
- Flexible working hours
- Full-time or part-time
- Home office possibility
- Salary according to Austrian collective agreement

Application

- **Find more details and open positions on our Homepage**
- **Apply online**

Application Window & Documents

- **Continuously until March 2024**
- **Application Documents**
  - Motivation letter
  - CV
  - Certificate of matriculation at a university
  - Transcript of records
  - Highest completed educational certificate
  - Reference letter

IPCEI PhD program at Infineon

Access to state-of-art laboratories

Internal & external events & conferences

Trainings, workshops & winter/summer schools

Exploring high-tech region

Global visibility

Scholarships

In-kind support

Discovering Carinthia

IPCEI PhD process

Establishing Contacts

Infineon HR organizes meetings with possible PhD candidate & professor to get to know candidates´ fields of competencies & professor´s interests.

Topic Match

Infineon HR consults business units and looks for a match between Infineon Austria´s fields of interest & candidate´s fields of competencies and professor´s interest.

Onboarding

Infineon HR and business unit follow the usual onboarding procedure.

Recommendation

University representatives recommend interested PhD candidates.

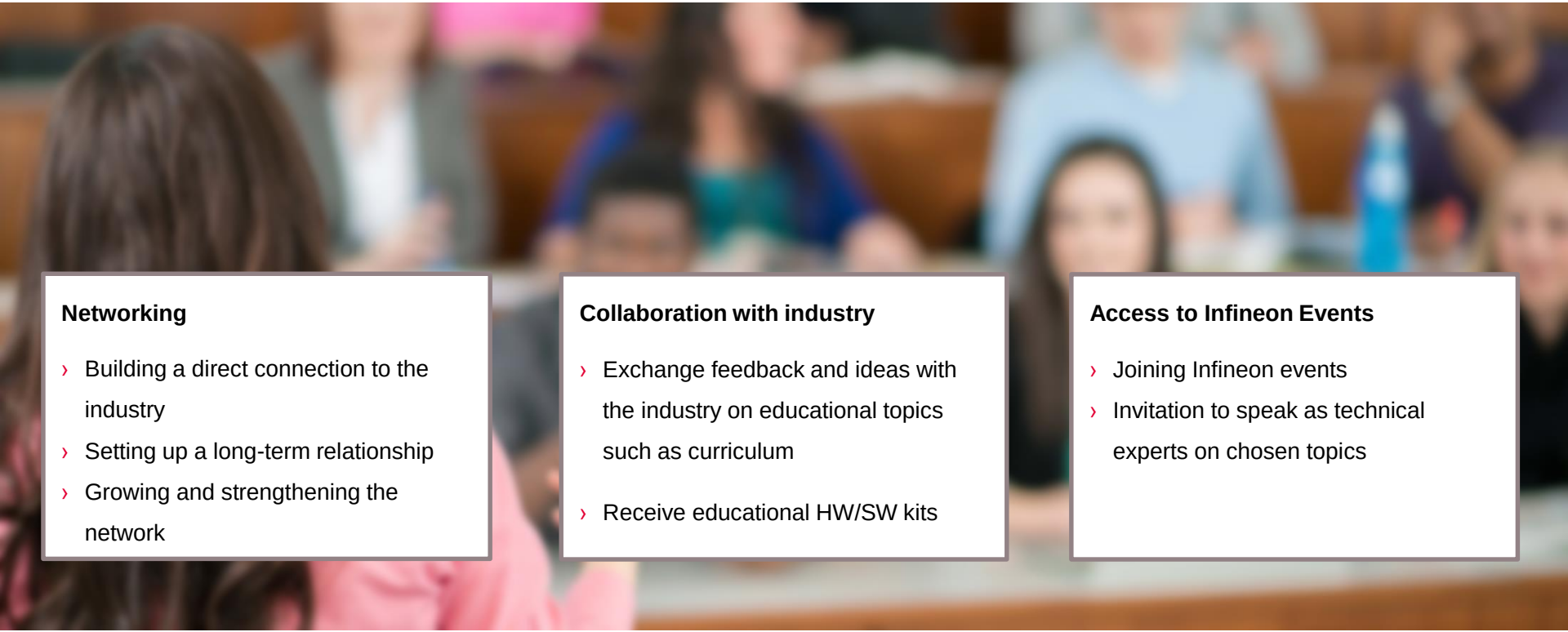
Application

PhD candidate submits application officially via UMANTIS.

Cooperation Agreement

Contract between Infineon and University/PhD Candidate will be signed.

Benefits for universities



Networking

- Building a direct connection to the industry
- Setting up a long-term relationship
- Growing and strengthening the network

Collaboration with industry

- Exchange feedback and ideas with the industry on educational topics such as curriculum
- Receive educational HW/SW kits

Access to Infineon Events

- Joining Infineon events
- Invitation to speak as technical experts on chosen topics

IPCEI PhD program application

How to apply? Open continuously until March 2024

Application Documents

- CV
- Presentation of competencies
- Certificate of enrollment
- Transcript of records
- Highest completed educational certificate
- Reference letter from Professor

Summary

IPCEI Microelectronics supports EU growth & creates positive spillover effects.

Infineon Austria is part of this strategic initiative.

Spillover activities will spread across Europe.

Join our mission future: We welcome your collaboration ideas, fields of interest, and competences.

Infineon Austria IPCEI webpage

Visit our IPCEI webpage and get more info on collaboration opportunities!

www.infineon.com/ipceimeaustria

Questions & answers

Acknowledgement

This work is funded by the Austrian Federal Ministry of Climate Action, Environment, Energy, Mobility, Innovation and Technology, the Austrian Federal Ministry of Digital and Economic Affairs, and implemented by austria wirschaftsservice (aws) and the Austrian Research Promotion Agency (FFG)

in the frame of the

Important Project of Common European Interest (IPCEI)

on Microelectronics.

The IPCEI on Microelectronics is also funded by Public Authorities from Germany, France, Italy and U.K.

Part of your life. Part of tomorrow.