

Curriculum Vitae

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11/2021 - 04/2022 Project at Infineon near Munich (mainly remote)

- Evaluation of the separation of wafers into individual semiconductor chips depending on the structure of the layers and the separation process used.
- In the area where the separation takes place later, there are structures that are necessary for process control. These structures must be examined for their influence on the adjacent chips during separation.
- This investigation is carried out partly manually by analysing the wafer layout and partly automatically.

02/2020 – until now

- Create technical videos about Spice Simulations and Switching Controllers
- Setting up an Internet channel for technical videos:
<https://www.youtube.com/channel/UCB2gZ1xMjs6HsaGQezHIKYw>
<https://av.tib.eu/search?q=meschenmoser>
- Familiarization into special switching controllers for inverters and correction of power factor (PFC).
- Measurements on commercially available powerline inverters
- Simulation of circuits for the correction of the power factor with PSpice and LTSpice on a system and component basis.
- Search for components for realisation
- Test of alternate simulations Tools (PSIM, SIMPLIS, SIMetrix)

07/2019

- The customer develops and sells industrial measurement technology
- Familiarization into DIN EN 60079-11 (hazardous areas)
- Development of concepts for the further development of products
- Simulation on system level with PSpice
- Search for components for realisation

06/2018

- Zertifizierter Elektronik Designer (ZED II) und Certified Interconnection Designer (CID)
- Familiarization into training materials
- Participation in the seminar
- Successful completion of both exams

12/2017 - present

- Structure, testing and documentation of variants of the self-developed laboratory board.

11/2017

- Start of membership in the Hafven Coworking Center with the aim of establishing electronics in this area.

8/2017

- Research on concepts and components for a possible project. A test system should be developed for the LIN bus, which is used in vehicles, with which components of this bus can be checked in accordance with the ISO17987-7 standard.

4/2017 – 5/2017

- Preparation of a presentation for the conference CDNLive2017 in Munich. I held the presentation at the conference in English on 16 May.

8/2016 – 3/2017

- With the help of PSpice, I developed a simulation for an industrial X-raysensor that works in a highly electromagnetic disturbed environment. Particular attention has been paid to a comfortable user interface. The user can add or modify individual interference peaks without knowing the details of the implementation.
- Schematics, PSpice Simulations and the Layout were created in the home office using my Orcad license.
- The simulated signal was then used as input for the simulation of the preamplifier. This was then optimized for the maximum tolerance to interference.
- For the power supply of the amplifier, the sensors, the A/D converter and other auxiliary components, linear and switching controllers (DC-DC converters) from the companies Linear Technology and Texas Instruments were analyzed and circuits were realized. Some of these controllers were simulated with the LTspice and TINA tools. At the system level, the overall concept of the power supply with the interaction of switching and linear controllers was also simulated. A circuit has been developed that includes preamplifiers, A/D converters and power supply. Alternative solutions from LT and TI were provided for the power supply. A strictly hierarchical concept was implemented in the schematic. I have presented this concept at the CDNLife EMEA 2017 conference on May 16, 2017.
- For this circuit I have then created a layout with special attention to electromagnetic compatibility.
- The selection and ordering of all special components were carried out by me in close consultation with the customer.
- The production of the board and its assembly was carried out by an external service provider under my control.
- Measurements and modifications of the board were carried out at the customer and in my laboratory. For the measurements I bought a high-quality oscilloscope LeCroy HDO6054, which is also available for other projects.

10/2015 - 7/2016 Own project

- Setup of a laboratory area for test of circuits.
- Testing, characterization and documentation of my laboratory circuit.
- Presentation of the circuit to potential customers during the Technology Cooperation Days on the occasion of the Hannover Industry Trade fair.
- Creation of a PSpice simulation for filter circuits.

- Visit of presentations from the companies Linear Technologies, Keysight, Würth, CADFEM and as part of my membership of the VDI.
- Create a presentation on the topic of circuitry, layout, PSpice, which was presented by me at the CDNLive 2016 conference.
- Creation of a contribution to the reference manual electronics within the framework of the Würth program "Find Your Engineer"(FYE).
- Testing the ADS and SpiceVision programs for graphical modeling of operational amplifiers
- Installation and familiarization of Orcad version 17.2

02/2015 - 09/2015 Own project

- Development of a high-quality laboratory card
- With this card, many circuits that I have developed in the past are combined on a card of Europe size.
- It is a 6-layer board, which I have created with an EMC-compliant design.
- Realized circuit parts are: high and low-pass filters, switching power supplies (DC/DC converter), level conversion, electromagnetic circuits (Hall sensor, Rogowski coil), RF transmitter and receiver, transmitter and receiver for modulated infrared light, conversion differential <> single ended, digital circuit parts, prototype range.
- The aim of the project was also to improve my knowledge in Orcad layout.
- The card was produced at 11/2015.

07/2014 - 01/2015 Work for company Harting

- Support in the development of electronic sensors
- Simulation of coupled inductors with ferrite core with the help of PSpice
- Development of a concept for current and voltage measurement in a connector
- Coordination of the concept with the mechanical designer and the developer of the digital circuits
- Create circuits and layouts for printed circuit boards for the measurement of current, voltage and optical intensity with the OrCAD
- Test and modification of the printed circuit boards
- Literature research on the topic of current measurement using Rogowski coils

10.04.2012 Foundation of Mescheltana GmbH

Freelance work in analog design

After the foundation, I bought the Program Package Orcad from Cadence, with which I can create schematics and layouts and simulate circuits. From my time at Bosch, I have a proven contact with a company that can produce and equip a board on the basis my data.

1989-2011 Employed at Bosch in the field of research communication technology

The department's mission is to develop prototypes that demonstrate the feasibility for future products.

2008-2011

- Transfer of image data from rear view camera (analog, digital, wire and radio controlled) to the vehicle. For wire-controlled transmission, HDMI and LVDS were used for radio connection modules in the ISM band at 2.4 GHz.
- Project "drahtloses Bühnenmikrofon":
Evaluation of variants for the generation of the required voltages with the help of switching controllers. The best alternative was developed with the help of the program CR5000 from the company Zuken and was tested extensively after the realization. Evaluation of variants of the transmission method were taking into account as alternative to the chosen transmission method OFDM.
- Development of components for multilingual transmission for conferences with the help of infrared light. The components were defined with the help of the program ADS from the company Agilent and after the realization the board was extensively tested. Optical measuring was also used.
- Development and testing of antenna diversity for Wi-Fi connection of loudspeakers

2006-2008

- Development of components for a future vehicle radar systems (mid-range radar and long-range radar) for individual distance control. The programs HFSS from Ansoft, ADS from Agilent, Autocad and CR5000 from Zuken were used.

2003-2006

- Specification of procedures for updating a digital street map. In collaboration with the Japanese company Denso, English-language Word documents have been created in which diagrams with the description languages UML and XML are embedded. In this context, 10 patents were filed. The DOORS programme for requirements management has also been used.

2000-2003

- Analysis, documentation and extension of a product-related program for a navigation system. The program was written in C++ and also contains components of the Windows supporting library MFC. The program was edited with Visual C++.

1998-2000

- Development and field test of a transceiver for the direct exchange of warning messages between vehicles. Schematics and layouts were created with the help of the program Orcad.

1996-1998

- Specification and procurement of a 64 GHz radio system as part of the project "Cellular radio networks with optical power". The project was funded by the BMBF and was carried out in cooperation with the Heinrich Herz Institut Berlin. I was project manager for Bosch.

1995-1997

- Specification, construction and field test of a vehicle unit for communication with an infrastructure at 5.8 GHz. Simulations were also carried out in PSPICE.

1992-1994

- Specification and testing of components and procedures for networking different devices in the private home. Board work at EIBA and for Powerline networks

1991 – 1993

- Construction of a prototypical receiver for digital broadcasting (DAB)

1989 – 1992

- Industrial networking with the help of diffuse infrared light as part of an EU funding project. Development of components for a wireless network. Simulations in PSPICE. Development of circuits and layouts with the help of PADS. As part of this project, I have studied MOSFET drivers for LED's in detail.

1980-1989

- Employed at Blaupunkt with a focus on "Conception and development of computer-controlled testing and alignment of car radios and their components". The focus was on HP1000 series computers with the RTE-A operating system, programmed in Fortran 7X and using HP-specific subsystems for network and database.

1987-1988

- Part-time teaching assistant at the University of Applied Sciences Hannover in the Department of Electrical Engineering

1979

- Graduated as Dipl. Ing. Elektrotechnik Specialization High Frequency Technology at the University of Hanover "passed with honour".

1974

- Abitur at the Gymnasium Neustadt a. Rbge

21.03.1956 Born in Hanover

Knowledge

Operating systems	RTE-A (very good), Windows 7 (good)
Office	Microsoft Office 10 incl. outlook (good)
Other	UML (gut), XML (gut)
Datenbankkenntnisse	Oracle (Basiskenntnisse)
CAD skills	Autocad (good)
Internet	Firefox (good)
CAE knowledge	Orcad (gut), PSPICE (gut), Zuken CR5000 (gut), HFSS (Basiskenntnisse), ADS (gut)
Programming languages	Fortran (good), C++ (good), MFS (good)

Analog circuits

- **Analysis, consulting, simulation**
- **Creation of schematics and layouts**
- **Provision of tested components**

Most technical solutions in electrical engineering are realized using digital methods. Analog circuits remain indispensable for transmission and reception circuits with the help of radio frequency or infrared light, signal generation and processing (filters, phase control circuits, level adjustments ...), current adjustment or sensor technology. Here Mescheltana offers detailed knowledge from 30 years of industrial production and research.

Just to suit your needs, Mescheltana offers the provision of a tested component based on a specification that is tailored to your needs. We contract the production of components to specialized and experienced subcontractors.

Arbeitskarten

Laboratory cards for the prototypical construction of electronic circuits are offered in large numbers in electronics retailers. However, these laboratory cards are very simple and therefore unsuitable for demanding circuits.

Mescheltana plans and develops a laboratory map that incorporates more than 30 years of experience from industrial production and research for analog circuits in electrical engineering.

Mescheltana laboratory cards are available with or without assembly – according to your wishes and requirements.

Electromagnetic compatibility

The electromagnetic compatibility of high-performance electrotechnical components places high demands on the design of the necessary analog circuits. At the same time, the share of the development of such solutions in the context of industrial processes is often too small to employ specialists in the company.

Here Mescheltana offers an alternative. We offer many years of experience from industry and research in solving challenges related to electromagnetic compatibility.

Radio systems with high frequency and infrared light

- Transmitters and drivers
- Antennas
- Recipient
- Signal generation and processing (filters, phase control circuits, level adjustments ...)
- Decision-makers and A/D converters
- Concepts for the complete transmission line

Numerous patents

More than 20 patents prove Mescheltana's extensive expertise in analogue circuits and electrical engineering components.

- Wireless communication technology and systems
- General circuit technology
- Management of digital map data for navigation systems
- Communication technology for motor vehicles
- Recording of the environment of motor vehicles using optics and radar