

CURRICULUM VITAE

Name: **Dr. Arnost Kopta**
Address: Zürich, Switzerland
Nationality: Switzerland and Sweden
E-Mail: arnost.kopta@power-devices.com
Web Page: www.power-devices.com



WORK EXPERIENCE

- 02/2023 – present Founder of Power Device Technology LLC. Independent consultant in the field of Power Semiconductor Devices
- IGBT, Fast Recovery Diode and SiC device design and development
 - Power device reliability
 - Device processing and process integration
 - Packaging technologies
 - Power device applications
- 12/2019 – 01/2023 CTO and Chip Development Expert SwissSEM Technologies AG in Lenzburg, Switzerland
- Main chip development activities:
- Development of a state-of-the-art IGBT and diode platform suitable for 600V to 1700V devices.
 - Lead product: 1200V/250A IGBT and diode qualified and in mass-production on 8" wafers. The total developed time was about 2 years starting from scratch. Main achievements: Very high H3TRB reliability, low overall losses, good controllability.
 - The project was done in collaboration with a leading IGBT-Foundry in Asia.
 - 750V Micro-Pattern IGBT for Automotive applications. Device design and process flow finalized. Competitive with the latest generation IGBTs available in the market.

- Responsible for the chip-development team, currently with 1 senior development engineer. Supervised projects:
 - Transfer of the 1200V IGBT to 12" wafer production in progress.
 - 1700V IGBT and diode. Performance verified and ready for qualification.
- Starting up a collaboration on 1200V SiC MOSFETs together with a leading European prototyping line.

Main CTO and technology-management tasks:

- Responsible for the technology roadmap in the area of power semiconductor devices (Si IGBTs, SiC MOSFETs).
- Coordination of the packaging roadmap together with the responsible project leaders within the company.
- Collaboration with external universities and research institutes. Acquisition of two externally founded projects in collaboration with the University of Applied Sciences and Arts Northwestern Switzerland
- Representing the company technologies towards external partners and the power electronic community (investors, customers, suppliers and academia).
- Defining the IP strategy and protection of IP.

04/2018 – 11/2019

Head of Electrical Propulsion System Engineering at Stadler Bussnang AG in Bussnang, Switzerland

Main tasks and responsibilities:

- Technical and personnel leadership of the Electrical Propulsion Engineering Team with a total of 14 engineers.
- Development and engineering of the propulsion system of electrical, diesel-electrical and multi-system passenger trains (Electrical Multiple Units).
- Responsibility for the corresponding system components like the pantograph, high-voltage equipment, energy metering system, transformer, converter and traction motors.
- Responsible for the certification and homologation of the propulsion system including Electromagnetic Compatibility.
- Development of alternative propulsion systems (traction batteries and hydrogen).
- Create offers and make performance calculations (energy consumption and running times) for future offerings and project.

10/2012 – 03/2018 Head of the BiMOS R&D Department at ABB Semiconductors in Lenzburg, Switzerland

Main tasks and responsibilities:

- Technical and personnel leadership of the department, consisting of three R&D teams with a total of 25 people.
- Responsible for the technology roadmap and for the implementation of the product development roadmap in the area of high voltage IGBT chips and modules.
- Responsible for the electrical- and reliability measurement lab used for qualification of new products and product improvements.
- Responsible for securing the quality standards in the development processes.
- Maintenance and extension of the patent portfolio.
- Coordination of the development work with projects run at the ABB corporate research centers.
- Collaboration with universities, external labs and research institutes.
- Supporting sales and marketing during the design-in phase of new products.

04/2008 – 10/2012 Head of the BiMOS device development group at ABB Semiconductors in Lenzburg, Switzerland

Main tasks and responsibilities:

- Technical and personnel leadership of the development team (7 people).
- Responsible for defining the technology roadmap for future high voltage IGBT and diode platforms.
- Responsible for the implementation of the development roadmap in the area of high voltage IGBTs and diodes.
- Responsibility for characterizing and improving the reliability of the developed high voltage chips.
- Responsible for supporting the production unit during the introduction of new products and by improvements of existing products and processes.

05/1999 – 04/2008 Development engineer and project leader in the R&D department of ABB Semiconductors in Lenzburg, Switzerland.

Main tasks and responsibilities:

- Technology and product development of high voltage IGBTs and diodes.
- Responsible for the entire chain of development from finite element simulations to electrical characterization of the fabricated prototype chips and power modules.
- Improvement and optimization of the fabrication process sequences.
- Responsible for yield, manufacturability, electrical performance and reliability of the final products.
- Project management.

EDUCATION

2015 – 2016 Certificate of Advanced Studies in Corporate Finance at the University of Zürich, Switzerland.

2004 – 2010 Ph. D. at the Institute for Electrical Drives, Power Electronics and Devices at the University of Bremen in Germany supervised by Prof. Dieter Silber
Title of the thesis: “Short-Circuit Ruggedness of High-Voltage IGBTs”.
ISBN-Nr. 978-3-8322-9383-3.

1997 – 1998 Exchange student at the department of Mathematics and Physics at ETH Zürich in Switzerland.

1993 – 2000 M. Sc. in engineering physics at Lund University in Sweden
Title of the diploma work: “Optimization of a 1200V Silicon Diode using Carrier Lifetime Engineering”.

1990 – 1993 Science high school (In Swedish “Gymnasiet”) in Landskrona, Sweden.

MAIN METHOD SKILLS

Project management
Six Sigma
8D

LANGUAGE SKILLS

Czech:	Native language
Swedish:	Oral and written very good
English:	Oral and written very good
German:	Oral very good, written good