

Curriculum Vitae

prof. Ing. Pavel Hazdra, CSc.

Personal	Born 21.4. 1960 in Prague, Czech Republic
Citizenship	Czech Republic
Affiliation	Czech Technical University in Prague, Faculty of Electrical Engineering, Department of Microelectronics
Current Position	Head of the Department, Head of the Electron Device Group
Qualification	
Education	1984 MSc. (Ing.), Microelectronics, FEE CTU Prague 1991 PhD. (CSc.), Microelectronics, FEE CTU Prague
Professional Path	1987 – 1996 Assistant Professor, Microelectronics, CTU Prague 1992 – now Head, Electron Device Group, Microelectronics, CTU Prague 1996 – 2010 Associate Professor (Doc.), Electronics, CTU Prague 2006 – 2007 Vice-Dean for Research, Deputy-Dean, FEE CTU Prague 2010 – now Professor, Electronics, FEE CTU Prague 2015 – 2018 Deputy Head, Dept. of Microelectronics, FEE CTU Prague 2018 – now Head of the Dept. of Microelectronics, FEE CTU Prague
Stays Abroad	1988 University of Surrey, Guilford (UK), visiting research fellow (3m) 1992 University of Hull, Hull (UK), visiting research fellow (6m) 1993 - 1994 University of Lund, Lund (S), visiting research fellow (10m) 1995, 1996 University of Lund, Lund (S), visiting research fellow (2x1m)
Awards	1990 CEI/Elsevier Award for the best poster at IIT'90 2003 Medal of the Czech Ministry of Education, Youth and Sports, II. Class 2005 Chairman of "The Chapter of the Year 2005" of Region 8 of the IEEE 2006 European Materials Society Award for the best poster at E-MRS Spring 2007 European Materials Society Award for the best poster at E-MRS Spring

Professional Activities

Research Interests	Wide-bandgap semiconductors and devices, Nanostructures and their characterization, Radiation defects and effects in semiconductors, Electrical and optical methods for characterization of deep levels in semiconductors, Defect engineering in silicon, Semiconductor device simulation and characterization
University Courses	Semiconductor elements, Power electronics, Integrated circuits design, Programmable devices, Structures and technologies of microelectronics, Microelectronics, Synthesis of integrated electronics systems, Design of programmable integrated circuits
Publications	67 scientific papers in journals excerpted by Science Citation Index (WoS) 688 citations in Science Citation Index (excluding self-citations) 2 patents h-index (Hirsch Index): 19 (WoS) 19 (Scopus) 22 (Google Scholar)
Research Projects	2022-2024 Printed heterogeneous gas sensor arrays with enhanced sensitivity and selectivity (CSF GA 22-04533S), co-investigator 2020-2022 Essential elements of diamond power electronics (CSF GA 20-1140S), principal investigator 2014-2017 Silicon Carbide Power Technology for Energy Efficient Devices (7. FP EU 604057), co-investigator 2012-2014 Defects in wide-bandgap semiconductors and their effect on power and high-temperature electronics (CSF GA P102/12/2108), principal investigator

- 2009-2011 Impact of Capping Layers on Electronic States in Quantum Dots (CSF GA202/09/0676), co-investigator
- 2006-2008 Engineering of Quantum Dots (CSF 202/06/0718), co-investigator
- 2002-2005 Mechanism of Radiative Recombination in Subnanometer InAs/GaAs Laser Structures (GAAV IAA10103180), co-investigator
- 2002-2005 Accurate Control of Recombination Centre Introduction in Silicon (5. FP EU HPRI-1999-00039/72), co-investigator
- 1999 New recombination centers for modern power electronics (IG ČVUT 309907503), principal investigator
- 1998 HVCTS – High Voltage Current Transient Spectroscopy (IG ČVUT 309809103), principal investigator
- 1997 Application of Hydrogen for Passivation of Contaminants in Semiconductors (IG ČVUT 3097465), principal investigator
- 1996 New Materials for Nuclear and Semiconductor Engineering (IG ČVUT 3096311), principal investigator
- 1995 Application of Irradiation with High Energy Ions for Power Semiconductor Structures (IG ČVUT 38184), principal investigator

Industrial Projects Simulation and Characterization of Power Semiconductor Devices (ABB Switzerland, Semiconductors, ABB Prague, Hitachi Power Grids CZ)
 Characterization and Simulation of Power Semiconductor Diodes (Freescale)
 Investigation of Current Injection Capability of Microcontrollers (Freescale, NXP)
 Power Semiconductor Devices (Toyota Motor Corporation, Japan)

Committees 2003-2006 Czechoslovakia Section IEEE – Committee member
 2003-2006 MTT/AP/ED Joint Chapter of CZ Section IEEE, chairman
 2013-2015 European Materials Research Society – Exec. Com. member
 2015-2019,2021- Czech Science Foundation – Panel P102 member/chairman

Recent Publications

- [1] Hazdra et al.; Pseudo-vertical Mo/Au Schottky diodes on {113} oriented boron doped homoepitaxial diamond layers, *Diamond and Related Materials*. 126, 2022, 109088, IF=3.81.
- [2] Hazdra et al.; Low-resistance ohmic contacts on boron-doped {113} oriented homoepitaxial diamond layers, *Diamond and Related Materials*. 121, 2022, 108797, IF=3.81.
- [3] Hazdra, P.; Smrkovský, P.; Vobecký, J.; Mihaila, A.; Radiation Resistance of High-Voltage Silicon and 4H-SiC Power p-i-n Diodes, *IEEE Transactions on Electron Devices*, 68, 2021, 202-207, IF=2.913.
- [4] Mortet, V.; Taylor, A.; Lambert, N.; Gedeonová, Z.; Fekete, L.; Lorinčík, J.; Klimša, L.; Kopeček, J.; Hubík, P.; Šobáň, Z.; Laposá, A.; Davydova, M.; Voves, J.; Pošta, A.; Povolný, J.; Hazdra, P.; Properties of boron-doped (113) oriented homoepitaxial diamond layers, *Diamond and Related Materials*. 111, 2021, 108223, IF= 2.65
- [5] Hazdra, P.; Popelka, S., Displacement damage and total ionisation dose effects on 4H-SiC power devices, *IET Power Electronics*. 12(15), 2019, 3910-3918, IF= 2.84
- [6] Hazdra, P.; Vobecký, J., Radiation Defects Created in n-Type 4H-SiC by Electron Irradiation in the Energy Range of 1-10 MeV, *Phys. Status Solidi A.*, A 216, No. 17, 2019, 1900312, IF=1.61
- [7] Hazdra P., Popelka S., Schöner A., Optimization of SiC Power p-i-n Diode Parameters by Proton Irradiation, *IEEE Transactions on Electron Devices*, 65, 2018, 4483-4489., IF= 2.62
- [9] Hazdra P., Popelka S., Radiation resistance of wide-bandgap semiconductor power transistors, *Phys. Status Solidi A.*, A 214, No. 4, 2017, 1600447, IF=1.65
- [10] Popelka S., Hazdra P., Záhrlava V., Operation of 4H-SiC high voltage normally-OFF V-JFET in radiation hard conditions: Simulations and experiment, *Microelectronics Reliability* 74, 2017, 58–66, IF=1.20
- [11] Vobecký J., Hazdra P., Popelka S., Sharma R.K., Impact of Electron Irradiation on the ON-State Characteristics of a 4H-SiC JBS Diode, *IEEE Transactions on Electron Devices*, 62, 2015, 1964 – 1969, IF= 2.47