

CURRICULUM VITAE

Dr. Ottó Zsebők

(Ph.D. Materials Sciences, Lic. Engineering Technology)
(M.Sc. Electrical Engineering - Microelectronics and Component Technology)

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Current position since 2006: Széchenyi István University, associate professor. Fields of expertise: nanoelectronics, microelectronics, semiconductor technologies, radio-frequency identification (RFID) systems. Research, projects: RFID & biometric identification technologies; Tribology, friction models. Education, lecturer: Materials Science & Technology, Engineering Physics, Nanoelectronics; Microphysics; Optics & Semiconductor Physics Laboratory; History of Physics, Mikrophysik.

Apr. 2002 – Sept. 2012 International Business Development Manager at MicroRaab Electronics Incorporation, later by company acquisition at G4S Security Systems Ltd. R&D of contactless RF Smart Card based high-tech integrated access control systems, and export management of identification systems for security, technological and logistics applications.

May 1998 – 2001 Research & Development Engineer and Project Manager at the Microtechnology Centre at Chalmers (MC2) in Göteborg, Sweden. Project leader in various strategic research programs, financed by the Stiftelsen för Strategisk Forskning.

- Research and development of new high-purity semiconductor materials and technologies for strategic industrial applications: full-colour flat displays; optical detectors; high-speed and high-power electronic devices (published in a number of international journals).
- Design and characterisation of novel optical and electrical semiconductor devices for industrial applications, e.g. displays and components for telecommunication (Ericsson Microwave Technology, NTT) and automotive industries (Volvo AB, Celsius AB).
- Design, molecular beam epitaxy (MBE) growth, processing (*lithography, dry and wet etching techniques*) and characterisation (*RHEED, photoluminescence, high-resolution scanning electron microscopy, Auger-electron spectroscopy, energy dispersive X-ray spectrometry, Hall effect measurement, X-ray diffractometry, Hall effect measurement, mass-spectrometry, various electronic industrial device and circuit characterisations*) of GaAs, GaN and related III-V semiconductors for optoelectronics and high-speed electronics applications (*lasers, light emitting diodes, high-speed heterostructure field-emission transistors, etc.*).
- Design of a monolithic full-colour semiconductor flat display.
- Special qualifications: *Industrial physical analysis methods; Microelectronic process technology for VLSI; (with certificate) Electronmicroscopy & microanalysis; Semiconductors, characterisation and optics; Vacuum technology; Cleanroom technology; Technical reporting in English.*
- Preparation of publications for international journals and brochures.
- Supervision of international industrial diploma students, lecture presentations in semiconductor science & technology (epitaxial growth and processing).
- Ph.D. in Materials Science at the Department of Microelectronics and Nanoscience, Chalmers University of Technology, Göteborg, Sweden (29 September 2000):
"Molecular Beam Epitaxy and Characterisation of GaN-compounds on GaAs(001) and Sapphire(0001)" (Examiner: Prof. Dr. Tord Claeson, Chairman of Nobel Committee for Physics).

Oct. 1996 – May 1998 Researcher Engineer and Project Leader at the Department of Microelectronics and Nanoscience at Chalmers University of Technology, Göteborg, Sweden.

- Nanoprocessing (*electron beam lithography, dry and wet etching techniques*) and characterisation (*high-resolution scanning electron microscopy, photoluminescence, etc.*) of semiconductor quantum wire structures for optical applications – e.g. quantum wire lasers.
- Design and construction of photoluminescence micromapping system for the optical characterisation of semiconductors.
- Lecture and cleanroom laboratory presentations in semiconductor science & technology.
- Licentiate in Engineering at the Chalmers University of Technology (25 May 1998):
"Epitaxial Growth, Processing and Characterisation of III-V Semiconductor Micro- and Nanostructures" (Examiner: Prof. Dr. Tord Claeson, Chairman of Nobel Committee for Physics).

- Apr. 1995 – Oct. 1996 Research associate at the Swedish Nanometer Laboratory of the Chalmers University of Technology, Göteborg, Sweden (by the Swedish Institute).
 • Development of nanoprocessing methods and related optical and electrical characterisations of III-V semiconductors for related optical and electrical devices.
 • Optical and electrical device testing, lecture presentations.
- Sept. 1989 – Mar. 1995 Research & development engineer at the Hungarian Telecom (MATÁV).
 • Quality control of electronical and optical industrial technologies by using of international standards (ISO, ASTM, DIN, IEC, CCITT, etc.).
 • Evaluation of the component suppliers of the Hungarian telecommunication systems.
 • Preparation and application of new tests and standards (quality and reliability) for the optical and wire network components of the Hungarian telecommunication.
 • Work as a project co-ordinator for various material and environmental testing programs of telecommunicational equipments and devices (type approvals for device applications in the Hungarian telecommunicational networks) during the development of the Hungarian optical telecommunicational network system.
 • Co-ordination, preparation and evaluation of the technical analysis reports for the various telecommunicational network tenders.
 • Scanning electron microscopy (SEM) for material tests and type approvals.
 • Supervision of diploma students.
 Engineering in process control measurements (*temperature and pressure*) and technical documentations at the thermal sensor company Leotrade (Ellab, Hungarian division).
- Oct. 1990 – Mar. 1992 Research & development (by DAAD) at the WZMW-Laboratories of the Philipps University, Marburg, Germany.
 • Participation in interdisciplinary research projects (physics, chemistry, microelectronics technologies) on the synthesis of novel precursor molecules for the metal-organic vapour phase epitaxy (MOVPE) of III/V-semiconductors.
 • Development of a measuring system for the van der Pauw-Hall technique and a new measuring method for the vertical thermo-transport of carriers in semiconductors.
 • Supervision of diploma students, lecture and laboratory presentations.
- Sept. 1989 – Sept. 1990 Research & development in an advanced engineering co-operation project between the Hungarian Telecom and the Department of Electronics Technology of the Technical University of Budapest, Hungary.
 • Thick-film integrated circuit and sensor technology and surface mounted circuit technology.
 • Lecture series in mathematics for undergraduate students.
- Sept. 1984 – July 1989 University studies at the Faculty of Electrical Engineering at the Technical University of Budapest, Hungary.
 • Microelectronics and component technology, industrial technologies, integrated optics.
 • Diploma in microelectronics and optoelectronics technologies. Final degree: "excellent".
 • Diploma work: "*Hybrid Optical Waveguides by Thick-Film Microelectronical Technologies*" (Supervisor: Dr. Gábor Harsányi).
- Oct. 1988 – Dec. 1988 Parallel studies (*industrial electronical measurements*) at the Rheinisch-Westfälische Technische Hochschule (RWTH) Aachen, Germany.
- June 1985 – July 1985 Circuit testing at the BRG Telecommunications Factory Budapest, Hungary.
- Awards: 1st prize of the Ministry for Economy and Industry for the diploma thesis (1989).
 Tihamér Nemes Prize of the Hungarian Telecommunication Company for advanced material and environmental testing methods (1993).
- Language skills: Hungarian, German, English, Swedish, Russian.