

## Tibor Berceli's biography

*Scientific degree:* Doctor of Technical Sciences (1965)  
Ph.D. (1955)

*University diplom:* Electrical engineering (1951), Budapest Technical University

*Languages:* English, German, French

*Status:* Professor Emeritus

*Affiliation:* Budapesti University of Technology and Economics  
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### *Teaching activity:*

- He started teaching at the Budapest Technical University in 1962. Since that time he presented courses on microwave and optical technology. Presently he is Professor Emeritus at the Department of of Infocommunications and Electromagnetics.
- He was visiting professor at Polytechnic Institute of Brooklyn in 1964, University College London in 1986, Drexel University (Philadelphia) in 1988-89, Technical University of Hamburg-Harburg in 1991, Osaka University in 1992, Technical University of Grenoble in 1994, Helsinki University of Technology in 2001 and The Sydney University in 2004.
- He had 11 Ph.D. students.

### *Research activity:*

- In microwave photonics he made significant contributions to combined lightwave-microwave mixing processes. He initiated a new combined lightwave-microwave phase detector that offers an improved method to stabilize the frequency of MMIC oscillators by an optically fed reference signal. Dr. Berceli improved the linearity of direct modulated lasers by using active matching techniques. He created a new double-stage optically injection locked oscillator to reduce the carrier frequency noise in the application to active phased array antennas. He initiated a subcarrier optical transmission and distribution method for indoor communication systems. He recently developed a new subcarrier type optical routing approach for packet switched transmission. He is presently active in optical generation of microwave signals. He is now involved into investigations on optical transmission problems of broadband information applying software defined radio technology.
- In the area of nonlinear microwave circuits he made several contributions as a scientist and as a leader of a microwave research group. The theoretical achievements were summarized in his book "Nonlinear active microwave circuits". Dr. Berceli made many other significant individual contributions to nonlinear active microwave circuits. Some examples are: the development of high efficiency varactor diode up-converters, low noise down-converters, broadband parametric and tunnel diode amplifiers, low distortion three-stage injection locked oscillators, high isolation waveguide switches, high stability dielectric resonator oscillators, high linearity frequency modulators, coherent common carrier generator, etc. He was involved into the development of THz components and circuits.
- Prof. Berceli participated in many international research projects. Together with his group he contributed to the European ACCORD, Copernicus, MOIKIT, FRANS, LABELS, GANDALF, IMICIMO, FERFIT and METAFER projects. He participated in the European NEFERTITI and ISIS Network of Excellence and seven COST co-operations.

*Publications:*

- Prof. Berceli is the author of more than 400 papers and 6 books published in English. These are obtained in MTMT database of the Hungarian Academy of Sciences. He received more than 1600 citations to his publications. He also has 26 patents.

*Technical Society membership:*

- Scientific Society for Telecommunications and Informatics (HTE)
- European Microwave Association (EuMA)
- Institute of Electrical and Electronic Engineers (IEEE)
- Optica (formerly Optical Society of America, OSA)

*Awards:*

- Award of Institute of Electrical Engineers (IEE) (1965)
- State Prize in Hungary (1980)
- Prize for Devoted Service (EuMA), (2006)
- Microwave Career Award (IEEE) (2016)