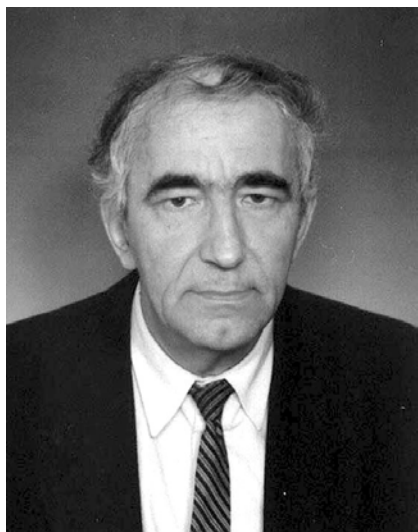


## Professor Aleksandar Nešić



**ALEKSANDAR D. NEŠIĆ** was born on the 21<sup>st</sup> of April, 1934 in Paraćin, Serbia by father Dušan and mother Miroslava (maiden name Milenković). In 1960 he received the Dipl.-Ing. degree in Electrical Engineering from the Faculty of Electrical Engineering, Department of Electronics and Telecommunications, at the University of Belgrade. In 1982, he received the M.Sc. degree in electrical engineering presenting the thesis entitled “Microwave Antiresonance Antenna Array fed by Coplanar Strips” and his D.Sc. degree in 1984 presenting dissertation entitled “Slot Antenna and Slot Antenna Arrays on Dielectrical Substrate fed by Coplanar Waveguide”, both from the University of Belgrade. In 1985 he was elected a Scientific Advisor at the Institute of Applied Physics, in 1989 he became an Associate Professor and in 1995 a Full Professor in the field of antennas and microwave techniques at the Faculty of Electrical Engineering, University of Belgrade. In 2000 he was elected a full member of the Yugoslav Academy of Engineering.

He is married to Mara and has two children: Dušan and Branislava, and four grandchildren: Marija, Milica, Aleksandar and Radoslav.

### EMPLOYMENT

Since 1959 Dr A. Nešić has been employed as an independent developing engineer at the Electronic Industry (former company “Pupin”). He was a chief of the UKT Department. since 1962 and a manager of the Fundamental Development Division in the same Company from 1974 to 1978. In the year of 1973 he was elected an expert consultant at the Institute of Applied Physics of Serbia. From 1973 to 1977 he was establishing the Laboratory for Microwave Techniques at the same Institute. As of 1978 he has been a consultant to the General Manager of the Institute of Applied Physics. As of 1979 he was a Head of Microwave and Electronics Division, from 1984 a Scientific Advisor and from 1993 till nowadays – a Head of the Institute of Microwave Techniques and Electronics.

From 1974 to 1979 he had been a secretary of Commission for Radio-Communications of the Yugoslav Electrical Committee as well as a member of a number of other commissions of the same Committee. From 1976 he was a member of a Study Group at the Yugoslav National Electrical Committee. In the period of 1974-1978 he was a member of the Council for Electronic-Counter-Counter-Measurement (ECCM) for the State Secretary of Defense. From 1986 he had been a member of the Electrical Engineering Board of Republic Dept. for Science and since 1999 a member of Board for Technical-Technological Sciences at the Serbian Ministry of Science and Technology. From 1986 to 1999, A. Nešić had been a constant member of the Paper Review Board of European Microwave Conference, and, on several occasions, a member of Technical Program Committee and of Paper Review Board in several international conferences such are: Microwave and Optronics (Germany), MICROCOL (Hungary) and TELSIKS (Yugoslavia). In the period since 1993 to 1996 he had been a member of the European Microwave Conference Management Committee as the representative of the Group 5 (Croatia, Cyprus, Greece, Israel, Slovenia, Turkey and Yugoslavia). In the last few years, he is a consultant to R&D Center of Sony for Europe (Stuttgart) and cooperates with the University of Dresden.

Professor Nešić was a leader or an associate on over 200 scientific and reserch projects for the needs of industry, public institutions and army, as well as on over 20 projects financed by the Serbian Ministry of Science.

Amongst more than 170 papers that Dr A. Nešić has authored or co-authored there are: one distinguished monograph edited by the Artech House – London, 4 chapters in significant international monographs, 92 papers published or referred to in eminent international journals and conferences and about 80 papers published or referred to in domestic journals and conferences. He has 16 patents registered at the Patents Office of the European Union, USA and Canada. Papers of A. Nešić are cited over 120 times in the most eminent international journals as well as in several international monographs.

Dr A. Nešić was awarded the *James Clark Maxwell Prize* (IEE) in 1986, as well as the Prize of Institute of Applied Physics in 1979, the Prize of Institute of Microwave Techniques and Electronics in 1997, Charter of Electronics Faculty of Niš in 2000. He also received a number of acknowledgments and plaques from various institutions and universities.

## SCIENTIFIC AND PROFESSIONAL ACHIEVEMENTS

The scientific activities of Dr Nešić include several various fields: research in the field of ultrasound, radio communications with an accent on VHF and UHF microwave and millimeter ranges, printed antennas and printed active antenna structures operating in microwave and millimeter ranges as well as periodical microwave filter structures.

Since 1960 until 1975, A. Nešić had been managing research, development and realization of a great number of HF, VHF and UHF portable and fixed radio stations operating in 64-76 MHz and 146-174 MHz ranges, completely transistorized, with 12 W power (66/17). These mobile units were at that time (1967) the first completely transistorized radios in Europe, operating in quoted frequency ranges with output power over 2 W. More than 15,000 pieces of these devices were produced and were used by the Yugoslav Army, police, electric power distribution companies, railroad companies, medical ambulances, water supply companies and other organizations and companies. A certain number of these devices were exported to the USSR and Switzerland. The above devices are still in use.

In 1972 A. Nešić established a Microwave Laboratory in the Institute of Physics of Serbia (later known as the Institute of Applied Physics), setting as his goal to make the necessary scientific and technological conditions for successful work in the field of microwave and millimeter techniques to be performed completely independently, sustained with no previous activities or experience transferred from abroad. This Laboratory was the first facility involved in research and development of microwave and millimeter wave technologies in the South-East Europe.

Since 1976 Dr Nešić had been managing research and development of a wideband radar detectors operating in frequency ranges from 8 GHz to 40 GHz for the needs of the Yugoslav Army. He designed integrated detector modules containing printed wideband antenna arrays integrated with PIN modulators and Schottky beam-lead detectors, also realized on dielectric substrate, with completely original solutions. All other recognized solutions for similar devices of that time were based on conventional waveguide technique. It was only about fifteen years later that the first papers describing similar integrated printed antenna structures in millimeter ranges were published.

At the end of the seventies he introduced usage of strip dipoles at the antiresonance in printed antenna arrays, as well as the new solutions for feeding networks which enabled design of arrays with wider bandwidth, much lower sidelobes and fewer losses.

In 1982, he was the first in the world to introduce the feeding method of printed slot antennas realized with coplanar waveguide (CPW) on dielectric substrates. This method enabled realization of antenna structures on dielectric or magnetic substrates as uniplanar structures. It was not before the beginning of the nineties that the descriptions of the mentioned method appeared in a great number of papers and has no alternative as a solution for integrated and active antenna structures, especially for millimeter waves.

He also introduced a new method of analyses of dipoles in inhomogeneous medium (dielectric or magnetic) as well as an enhancement of Booker's principle of homogeneous structures to inhomogeneous structures. For the paper presenting the method, Dr. Nešić was awarded the *IEE Maxwell Prize*.

In the course of the nineties, Dr Nešić has been conducting research and development of microwave radio links and systems for digital signal transmission operating in various microwave ranges, up to 24 GHz. These systems are being manufactured in a production department of the IMTEL Institute and exploited by TELEKOM SRBIJA, the Ministry of Internal Affairs of Serbia (MUP) and YU-INFO Television, etc.

Between 1998 and 2001, Dr Nešić has investigated, designed and realized various new types of printed wideband antenna structures with circular polarization operating at frequencies up to 75 GHz. These antenna structures are fed at one port and have the widest bandwidth for axial ratio less than 3 dB, known so far. Use of such antenna structures is planned for the fourth generation of mobile systems in 2005-2006. Also, a method of obtaining conical radiation pattern of printed antennas with circular polarizations is found, which is very suitable in mobile satellite and indoor communications.

In the recent time, he has introduced new types of printed antennas with omni-directional radiation pattern and a new electromagnetic band-gap structure with continues periodic variation.