

PERSONALITIES FROM THE MERIDIANS OF THE ENGINEERING UNIVERSE

Sergiu Rădăuțan was born on the 17th of June 1926 in Chișinău in an intellectual family. His grandfather, Serghei Rădăuțan, graduated the University of Sorbonne in Paris. His father, Ion Rădăuțan, worked as an assistant at University of Iași, then as a French teacher at Theological Seminary from Chișinău. His mother, Nina, was a music teacher. He attended the primary school in Chișinău, then “B.P. Hașdeu” Highschool. Life was tough with Serghei and his family. Firstly, in 1940, they were forced to take a difficult decision: to leave for Romania or to stay in Chișinău.



They stayed. In 1941 his father, Ion Rădăuțan, soldier in soviet army, died in Ukraine. Sergiu was only 15 when, due to the circumstances, fought against poverty together with his grandfather, his mother and

his 8 years old brother. He faced all sorts of problems. He intended to attend the Pedagogical Institute in order to become a teacher just like his parents, but, starting with 1945, he had to serve in the military service for five years. Only later, in 1950, when he was 24, he became a student at Faculty of Physics at the State University of Chișinău. He is said to have worn only military clothes in his first three academic years because he didn't have others. He was very conscious with his studies, but he also was a good fellow who shared with his colleagues his knowledge and his experience obtained during the military service. He took part in sports competitions and in cultural activities of the faculty with great success.

Towards scientific research. It can be said that his scientific career started when he was still a student under the supervision of professor M.V.Kot, with whom he worked in the domain of physics of semiconductors. Professor Kot had been appointed the head of the Department of Experimental Physics in 1953, department that had been founded in 1951. He made there the first researches in the domain of semiconductors. In 1955, immediately after graduation, due to his excellent school results, he was awarded a Ph.D. scholarship at „A. Ioffe” Physics Institute from Sankt-Petersburg. He studied the solid solutions obtained from Indium (In), Arsenic (As), Selenium (Se), Tellurium (Te) for four years and he got his Ph.D. diploma on the 26th of January 1959. He used his qualities as organizer also here, creating a bridge among the young students from Moldavia. In the Ph.D. students' hostel he initiated a lot of scientific discussions. He continued his researches within the Institute of Applied Physics of the Academy of Science from

Moldavia with studies regarding the diamond semiconductors with defect structure, and based on the results, he got his habilitated diploma on the 17th of June 1966 at the Polytechnic Institute of Leningrad. He developed the activity of the Institute of Applied Physics in new directions, towards the study of semiconductors and of electronics of solids. His results, published in tens of articles and 30 books, made him the chief of the research lab (1961-1964) and later the Manager of the Center of semiconductor materials of the Institute of Applied Physics of the Academy of Science of Moldova (1995-1998).

Professor and Rector. The political leadership from the '60s started to set up the Polytechnic Institute of Chișinău in March 1964. On the 6th of May 1964 Sergiu Rădăuțan was appointed Rector. The summer of 1964 was very difficult for Sergiu Rădăuțan: he carefully selected a competent teaching staff, choosing professors that had Moldavian roots in one way or another. He formed a team of leaders, he equipped the labs, he organized the teaching process, he organized the entrance examination for the Polytechnic Institute of Chișinău and he started the activity with 575 day-courses students and 500 part-time courses and distance courses students. After the academic year started, the Rector Sergiu Rădăuțan visited some universities from the Soviet Union in order to cooperate with his institute in both teaching and research activities. In this context, several young researchers went to specialize, to get their Ph.D. diploma and many scientific conferences were organized in Chișinău. Despite the recommendations made by the political leaders, youth from Moldavian villages were encouraged to focus their attention on other specializations than agriculture, and the number of Moldavian students didn't drop under 65-70%. Little by little, the number of students increased up to 7,000, and Romanian language could be heard in the trolleybuses that brought these students from Râșcani, where the hostels had been built, to downtown where there were the classrooms and the labs. There were classes with Romanian students who were taught in Romanian. The Romanian language was used even in the Rector's office. The Rector built bridges among people by taking part in social events. He maintained and he developed the scientific relation with the Science Academy of Moldova.

Up to here....! Sergiu Rădăuțan's popularity had increased too much, so the political leadership threatened him directly. On the 9th of December 1970, an academician delivered a speech about the “Moldavian language”. The audience was hostile, and the situation was considered to be “morally and

politically unhealthy". The political leadership sent two committees in order to "check the situation", but the decision had already been taken. Over 50 persons were forced to leave the Polytechnic Institute. The Moldavian groups of students were rescinded. Afterwards, Sergiu Rădăușan was fired on the 2nd of October 1973. At that moment the Polytechnic Institute had 11,000 students and the teaching staff comprised almost 1,000 people.

Acknowledgements. He returned to the Academy where he took up his researches again, and the evidence regarding his acknowledgement kept on coming. In 1991 he was elected as an honorific member of the Romanian Academy, and in 1992 as a member of the Academy of Engineering of Russian Federation. He was awarded Doctor Honoris Causa of the Universities of Timișoara, Brașov, Iași, Chișinău. He established a tight relationship with the scientists from Romania. He passed away on the 6th of March 1998.

Ion I. Agârbiceanu was born on the 6th of January 1907 in Bucium-Șasa. His father, Ion Agârbiceanu was a priest in the village, and his mother, Maria, was a housewife, which was normal for a priest's wife. Later, in 1919, his father became a member of the First Parliament of Great Romania, and during 1922-1926 he was vice-president of the Senate. He was a member of the Romanian Academy, editor of the „Transilvania” Magazine, archpriest in Cluj, writer. As a result, Ion I. Agârbiceanu was brought up in an intellectual family that were interested in literature, but also in the evolution of physics and of astronomy. The child's intellectual qualities determined his parents to send him to school at the age of five. He was only 17 when he graduated „Gheorghe Barițiu” Highschool in Cluj. He chose the Electrotechnic Institute set up by Dragomir Hurmuzescu. The institute was part of the University of Bucharest. He graduated it in 1930, obtaining a diploma in engineering. He left for Paris in the same year in order to specialize in physics. In 1934 he defended his Ph.D. thesis in spectroscopy.

A remarkably distinguished Professor .He worked for a little while in England as an engineer, then he returned to Romania and worked as an assistant and then as a lecturer at University of Bucharest, Faculty of Physics. In 1948 it was set in Bucharest the Institute of Petrol and Gas and Ion I. Agârbiceanu was appointed head of the Department of Physics. In 1955 he transferred to the Polytechnic Institute of Bucharest, where he worked until the end of his life, in 1971. Here is what his former student, back in 1961-1962, Micu Sălică, said about his professor: "A man of impeccable elegance in his gestures and appearance. He used to wear checked brown clothes. If you had asked somebody who didn't know him what he thought about this man, he would surely have told you that he was a scientist.

In the hall where he used to teach the front seats were occupied during the previous break. I was a student at mechanics, but there were also students from electronics, cybernetics. He used to write on the blackboard with a speed that allowed the students to take notes. Many times, he used to stop, he thought for a while and said: professor X has a different opinion and I am inclined to agree with him. After every class he gave us several types of problems. I believed he made them on the spot. During classes he asked questions to his students to be sure that he was understood. He used to say: "Ok, young man, I can see you think, and although you mixed up things, the important fact is that you think". I asked him once how to study for the exam and he answered "Take 2-3 books on the same subject, written by foreign authors and find the contradictions in their theories. Automatically, synapses will be formed in your mind and you will remember the essential information". Another colleague asked him how big discoveries are made and he gave up an amazing answer for us back then: "*Everybody knows that the truth is absolute. Here comes an ignorant who doesn't know this and makes a big discovery*". This reply resembles a little Einstein's statement: "*There are things about which we know that they are impossible to accomplish until somebody comes and accomplishes them*". I also remember one of his advice" "*When you are engineers and one of your subalterns makes a technical mistake, first repair the mistake and only afterwards punish the guilty person*". This was the story said by someone who was Ion I. Agârbiceanu's student almost 50 years ago.

Leading Scientist. The scientific research was a leading one in his domain, and his name is related to one of the most important discoveries of contemporary physics: the laser. The first functional laser was built in 1960 and it had a synthetic ruby crystal as active environment. The first gas laser was built also in 1960 by the Iranian physicist Ali Javan who used a mixture of Helium and Neon that produced a beam having the wave length close to infrared. Ion I. Agârbiceanu's researches in physics and spectroscopy developed a lot from 1956 by setting up the Physics Institute of Bucharest and of the Laboratory of optical methods and nuclear physics. In 1963, under the supervision of Ion I. Agârbiceanu, it was built the first Romanian gas laser, using an original patented method. For his scientific merits he was elected member of the Romanian Academy in 1963. He worked within the European Group of Atomic Spectroscopy and he represented Romania at the International Union of Theoretical and Applied Physics. He passed away on the 9th of March 1971 in Cluj-Napoca.

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