

## Alexander Mikhailovich Prokhorov is 85!



An outstanding scientist of the present time, academician Alexander Mikhailovich Prokhorov, was 85 on 11 July 2001.

Alexander Mikhailovich Prokhorov is one of the founders and creators of quantum electronics and laser physics belonging to the greatest achievements of science in the 20th century. His name is forever inscribed by golden letters to the history of world and native science.

The way of Alexander Mikhailovich to science, starting in 1939 as his postgraduate study at P N Lebedev Physics Institute, USSR Academy of Sciences, was interrupted by World War II. He was at the front, served in the regiment reconnaissance detachment, was decorated with a Medal for Courage, and demobilised in 1944 after severe wounds. Then, he returned to science and has been engaged in a strenuous and fruitful scientific activity for over 55 years.

In the earlier 1950s, A M Prokhorov performed a series of studies on radio-frequency spectroscopy of molecules, which were then supplemented by his radio-frequency spectroscopic investigations of crystals using the paramagnetic electron resonance method. Already in these remote years, the foundations of a new scientific school of A M Prokhorov were laid and his scientific style – to focus rapidly and efficiently the attempts on the most promising lines of investigations – was formed.

The 1955–1965 decade became one of the most fruitful in the scientific work of Alexander Mikhailovich. The classical results that he obtained in this time formed the basis of quantum electronics. It is in this time that a new type of an electromagnetic oscillator based on the stimulated radiation effect, a microwave ammonia gas beam maser, was created. The brilliant ideas were put forward, which provided a rapid development of this new scientific field that became one of the most

important features of the modern civilisation. The contribution of Alexander Mikhailovich to the development of such fields of physics as nonlinear optics, fibre and integrated optics, physics of magnetic phenomena, and submillimetre spectroscopy is invaluable. Alexander Mikhailovich also pays much attention to a variety of laser applications, especially to fibre-optic communication, laser technologies, and the use of lasers in medicine and ecology.

The outstanding results obtained by Alexander Mikhailovich Prokhorov during his creative studies are well known to scientists around the world. A scientific school created by him is well known in the scientific world. This school has been initiated at the Laboratory of Oscillations at P N Lebedev Physics Institute even before the advent of lasers and continued to develop around Alexander Mikhailovich in succeeding years. To the early 1980s, this school became a large group of highly qualified scientists, well known both in Russia and abroad, most of them being the pupils of Alexander Mikhailovich.

Alexander Mikhailovich Prokhorov is not only an excellent scientist but also an inborn leader. His leadership is clearly manifested both in his scientific supervision and in the organisation of science, as well as in his human qualities. His high scientific and moral authority has been for many years and still remains the centre of attraction both for young researchers and experienced scientists. He is a Teacher in the highest meaning of this word.

The studies of Alexander Mikhailovich have gained a wide acceptance in our country and abroad. In 1964, A M Prokhorov was awarded, together with N G Basov and C Townes, the Nobel Prize in physics. Before this, in 1959, he was awarded (together with N G Basov) a highest scientific prize of the USSR, the Lenin Prize. In succeeding years, he was awarded the State Prize of the USSR and premiums of the Council of Ministers of the USSR. In 1966, A M Prokhorov was elected an academician of the Academy of Sciences of USSR.

A M Prokhorov is twice a Hero of Socialist Labour, he is decorated with many orders and medals. In 1996, he was decorated with an Order for Services for the Motherland.

On behalf of all the laser community, I wish Alexander Mikhailovich good health and a new great victory in the task of preservation of our science, on which challenging but interesting roads he has advanced during all the past years and continues to advance.

Editor in Chief of Quantum Electronics  
Academician **N G Basov**

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*Kvantovaya Elektronika* 31 (7) 658 (2001)  
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*From the Editorial Board*

Nikolai Gennadievich Basov wrote this congratulation several days before his untimely death.