

## In memory of Oleg Vladimirovich Bogdankevich

N G Basov, I B Kovsh, Yu M Popov

Oleg Vladimirovich Bogdankevich, an outstanding Russian experimental physicist, doctor of physico-mathematical sciences, an Honoured Science and Technology Worker of the Russian Federation, perished tragically on 12 April 2001.

After graduating from the Moscow State University in 1953, Oleg Vladimirovich joined the Laboratory of Standards of the P N Lebedev Physics Institute, where he worked under the supervision of V I Veksler. In 1961, he defended his PhD (Phys) thesis devoted to the investigation of the ionising properties of accelerated electron beams.

In 1961, on N G Basov's invitation, O V Bogdankevich joined the Laboratory of Oscillations and became involved in studies aimed at obtaining stimulated emission of radiation from semiconductors excited by fast electrons. At the end of 1963, this research resulted in the creation of the first-ever electron-beam-pumped semiconductor laser. The lasing was obtained in cadmium sulfide. In succeeding years these studies were considerably expanded, and in 1966 O V Bogdankevich defended his Doctoral thesis entitled 'Semiconductor quantum generator excited by an accelerated electron beam' – one of the first theses on lasers in the USSR.

In 1967 he obtained, together with N G Basov and A S Nasibov, the Invention Certificate of an electron-beam tube, which was soon implemented in a number of new devices. These studies brought world fame to Oleg Vladimirovich. In 1969, O V Bogdankevich pioneered the investigations of the excitation of gas lasers simultaneously by an electron beam and an electric field.

In 1974, O V Bogdankevich became a head of a Department at the All-Union Research Institute of the Metrology Service of the State Committee of Standards. Research and developments of high-power electron-beam-pumped pulsed semiconductor lasers performed in his laboratory resulted in the creation of unique radiation sources for metrological measurements, optical radars, scanning optical microscopy, etc. Many of the then-achieved results, on multicomponent pulsed lasers in particular, still remain unsurpassed. The devices developed by O V Bogdankevich were implemented in industry, and the 'Platan' Research and Production Association launched their serial production.

O V Bogdankevich paid great attention to the education of young scientists. For about 40 years, he was a member of the teaching staff of the Moscow Physicotechnical Institute and was a Head of a Chair there since the mid-70s. His pedagogical talent manifested itself in the ability to develop in his students the capacity for individual creative activity and the taste for scientific quest. Thirty-five Candidate



theses were defended under his supervision, and a number of his students became PhD (Phys).

To the very last days of his life, O V Bogdankevich worked actively, published scientific papers, and supervised post-graduate students. To cite one example, his calculations underlie the inventions which were awarded silver and bronze medals at the International Patent Competitions in Brussels (1999) and Geneva (2000).

He was a personality of comprehensive knowledge, high erudition, and exceptional intelligence, a patriot. His memory will remain forever in the hearts of his friends, colleagues, and students.