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New Russian-English Dictionary of Physics

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Russian-English Dictionary of Physics (approx. 75,000 terms) (Ed. V D Novikov) (Moscow: RUSSO, 2000)

At the beginning of the year 2000, physicists received a gift of the new *Russian-English Dictionary of Physics* published by RUSSO publishing house. The production of this publication was supported by the Russian Foundation for Basic Research. The work of the authors was directed by V D Novikov, candidate of physicomathematical sciences, who has been a co-ordinator of research programmes on radiophysics and electronics undertaken by the Division of General Physics and Astronomy, Russian Academy of Sciences for several years. V D Novikov himself edited the dictionary.

The roster of authors includes specialists in theoretical physics, solid-state physics, plasma physics, optics and quantum electronics, radiophysics, acoustics, astrophysics, nuclear physics, mechanics and theory of elasticity, working at such leading research institutions as the P N Lebedev Physics Institute of the Russian Academy of Sciences (RAS); the Institute of General Physics, RAS; the Russian Research Centre 'Kurchatov Institute'; the Institute of Applied Physics, RAS; the A V Shubnikov Institute of Crystallography, RAS; the Institute of Astronomy, RAS, and the A A Blagonravov Institute of Machinery Sciences, RAS.

It is safe to state that the *Russian-English Dictionary of Physics* is by far superior to all previous multilingual physics dictionaries in terms of the wide range of vocabulary which reflects recent changes in both the Russian and the English languages. Indeed, there is no analogue to the new book among dictionaries published in this country in the past. The *Russian-English-German-French Dictionary* (1989) by V I Rydnik and co-workers contains only 5000 terms. The *English-German-French-Russian Physics Dictionary* by V D Novikov et al. published by RUSSO publishers, Moscow and 'Harri Deutsch', Germany in 1995 includes 11000 terms. The *Russian-English Dictionary of Scientific and Technical Usage* (1986) and *Russian-English Polytechnical Dictionary* (1980) by B V Kuznetsov are well known and extensively used, but they contain relatively few physics terms many of which are obsolete.

The new 916-page dictionary contains approximately 75,000 terms that cover the entire field of modern physics including both its classical and newly-evolving branches. The dictionary is universal and convenient to handle in that it contains a number of general scientific and mathematical terms together with examples of their usage and terminology related to the physical instrument-making industry, physical units and measurements. This allows the concomitant use of other dictionaries to be avoided. In addition to this advantage, the dictionary includes terminology used in related areas of science, such as mathematical physics, biophysics, geophysics, physical chemistry and chemical physics, astrophysics, oceanology, atmosphere physics, etc. It is essential that in the selection of Russian terms, the compilers have drawn upon original scientific publications including *Kurs Teoreticheskoĭ Fiziki* (Course of Theoretical Physics) by L D Landau and E M Lifshitz, major Russian physical journals [*Usp. Fiz. Nauk* (Physics – Uspekhi), *Zh. Eksp. Theor. Fiz.* (JETP), *Optica i Spektroskopiya* (Optics and Spectroscopy), *Kristallografiya* (Crystallography), *Kvantovaya Elektronika* (Quantum Electronics), etc.], journals of related disciplines [*Astronomicheskiĭ Zhurnal* (Astronomical Journal), *Zhurnal Vychislitel'noĭ Matematiki i Matematicheskoĭ Fiziki* (Journal of Computational Mathematics and Mathematical Physics), etc.], and recent monographs of Russian physicists published from 1994 to 1999.

Being an astrophysicist, I tried to roughly estimate the 'capacity' of the new dictionary by comparing it with the *English-Russian Astronomical Dictionary* edited by Mikhaĭlov (Moscow: Sovetskaya Entsiklopediya, 1971) which is extensively used by Russian astronomers. A cast of astronomers were assembled to compile the latter dictionary including a corresponding member of the USSR Academy of Sciences, one doctor and two candidates of science. I compared two word clusters formed from the various derivatives of the word 'galaktika' (Galaxy) and counted 53 of them in the new *Dictionary of Physics* and only 45 in the *Astronomical Dictionary*. I found that only three of the 53 astronomical terms (5.6%) can be regarded as archaic. Evidently, this testifies to the high quality of the new dictionary, the more so that I have chosen for comparison terms used in an associated discipline.

The participation of Russian physicists in international conferences and workshops, the implementation of joint research projects, the submission of papers to foreign journals, and the publication of English versions of certain Russian journals require translation of printed materials and manuscripts from Russian into English. The achievements of Russian scientists in theoretical physics, astrophysics, solid-state physics and semiconductor physics, holography, quantum electronics, controlled nuclear fusion, and space research are recognized world-wide. Foreign scientists show as great an interest in the results of Russian physicists as ever, judging, for example, by the publication of a large number of monographs of Russian authors translated into English in different countries. The dictionary under consideration may be eminently useful in improving the quality of translations. In a word, this volume presents an unprecedented and timely publication offering quick access to information of interest to a wide circle of basic researchers, engineers, students, teachers, and translators. It may serve as a valuable textbook and a source of useful facts for the students of universities, institutes, and colleges seeking knowledge of English scientific terminology. Also, it will be a volume of major use addressed to scientists in the Ukraine, Belarus, and other CIS countries where journals and other scientific literature in the

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Russian language remain an important medium of scientific communication.

In conclusion, it appears appropriate to quote a passage from the preface listing the major scientific disciplines from which vocabulary units were acquired for the dictionary:

(1) General scientific, physical, and mathematical terms.

(2) Theoretical physics (thermodynamics and statistical physics, theory of relativity and gravitation, quantum mechanics, quantum field theory).

(3) Mechanics, theory of elasticity, physics of friction.

(4) Solid-state physics (physics of magnetic phenomena, crystallophysics, physics of metals, semiconductor physics, physics of strength and plasticity, high-pressure physics, low-temperature physics, superconductivity).

(5) Optics, spectroscopy, luminescence, laser physics, holography.

(6) Radiophysics, electronics, microelectronics.

(7) Acoustics and ultrasound.

(8) Aero- and hydrodynamics, physics of liquids and gases.

(9) Plasma physics, controlled nuclear fusion.

(10) Astrophysics and space research.

(11) Surface physics.

(12) Geophysics, physics of the Earth and solar physics.

(13) Nuclear physics and charged-particle accelerators.

(14) High-energy physics, elementary particle physics.

(15) Biophysics, biochemistry, physical chemistry, chemical physics.

(16) Physical instruments, units, and measurements.

It appears from this list that the vocabulary of the dictionary covers a broad spectrum of physical disciplines and related areas of science. It may be expected that the *Russian-English Dictionary of Physics* will become an indispensable reference for many specialists working in these branches of knowledge and publishing their papers in foreign journals.

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