

## 80 years of Uspekhi Fizicheskikh Nauk

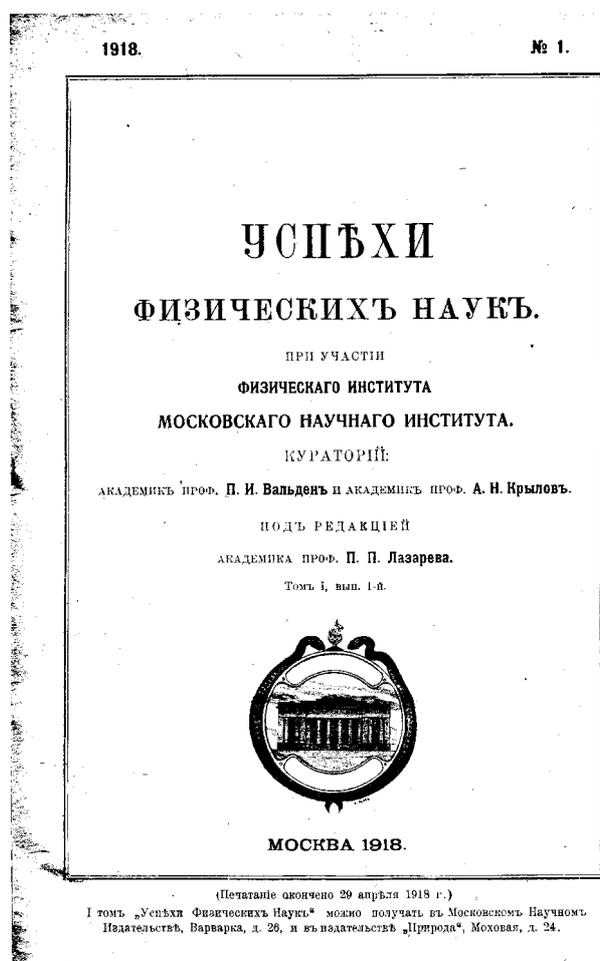
The publication of *Uspekhi Fizicheskikh Nauk (UFN)* [*Physics–Uspekhi* in English edition] began in 1918. At a time as bad as that (a statement that hardly needs justification) the country found both people and finances to support science and especially physics. The publication of *Uspekhi Fizicheskikh Nauk* was only one of the steps in this direction. We will not rewrite the situation in a new set of words, though, and will rather reprint here the Editorial Appeal that opened the very first issue of *Uspekhi* whose title page is shown below.

“From the Editorial Board

The fact that most of the representatives of science in Russia published their work in the Russian language, which is hardly accessible to other scientists, is an unfavorable condition that stands in the way of making of the achieve-

ments of Russian researchers known to the cultured world; they remain completely hidden from the international science. It has not been infrequent for a discovery made in Russia to be followed by completely independent research and discovery in the West and a publication several years later in British, Italian, German and French journals; consequently, the work of the Russian scientists does not exert on the evolution of knowledge the influence that it otherwise could. Russian researchers, striving to take part in the international creative process, have been publishing their work in Russia and simultaneously in foreign journals, and some even exclusively abroad. As a result, the scientific material has become hopelessly divided between a number of European journals which are often published in different countries; also, reviewing the entirety of the results obtained in Russia has become virtually impossible. Wishing to facilitate the accessibility of the work of our scientists to our Western neighbors, the Moscow Science Institute decided in the spring of 1917 to publish a journal in French for original research work in physics and related fields, with a title *Archives des Sciences Physiques*. To make it easier for the Russian authors to have their papers translated, the Editorial Board invited translators who can, on agreement with the editors and authors, translate the papers submitted in Russian. The journal is planned to appear as notebooks (issues) from 1 to 4 printing signatures<sup>1</sup> large, and running to 20 printing signatures per year. Publishing in individual issues would alleviate a number of technical difficulties and at the same time speed up the presentation of the papers to the reader. For better access to the Russian reader we plan to start the publication of the Russian version of the same papers in January 1918, in parallel with the French version, under the title *Arkhir Fizicheskikh Nauk* (Archives of Physical Sciences), issues I and II.

Another unfavorable factor that hinders the progress in scientific research in Russia is the paucity of current literature on modern topics in physics, so that young people starting their life in science cannot monitor the progress of science either in Russia or in the West, as they are not prepared to a sufficient degree for reading specialist journals. The recent *Fizicheskoe Obozrenie* (Physical Review), *Voprosy Fiziki* (Topics in Physics) and *Novye Idei v Fizike* (New Ideas in Physics) were able to satisfy, to some extent, the needs of those interested in the new knowledge; in the same vein, wishing to further the same goal formulated for these publications, the Science Institute has decided to launch *Uspekhi Fizicheskikh Nauk* in 1918, in Russian, as four issues of five printing signatures a year, aimed at bringing to the researchers in physics, chemistry and biology, to technicians and teachers, information on the latest achievements in physics and related fields of knowledge. Being a review journal and containing contributions written by experts in these fields, *Uspekhi Fizicheskikh Nauk* will also offer refereed journal papers, a bibliography and a section of personalia.



Title page of the first issue of *Uspekhi Fizicheskikh Nauk*.

<sup>1</sup> One signature is equivalent to 1 author unit, which consists of 40000 entries or in nowadays terms it is about 40 Kbytes of plain ASCII code.

Both journals will be run by the curatorium (editorial board) of full academy member professors, P I Val'den, A N Krylov and P P Lazarev.”

We also reproduce here the tables of contents of the first two volumes of *UFN*, which were printed at the end of the first issue of the third volume (as self-advertising); they reflect the goals and tendencies of the journal. The third issue quotes some responses to the publication of the first issues of *UFN*.

From reviews: “*Uspekhi Fizicheskikh Nauk* deserves to be called the most brilliant journal in the period of 1918–1921, which went far beyond the boundaries traced by its title. Not only physicists but also, and maybe most of all, chemistry researchers will turn to it for a long time and study it. The reader finds in it not only papers of specific physical interest, not only a rich bibliography, mostly of Western origin, and especially on the structure and decomposition of the atom, but also articles of profound philosophical content. In view of the difficulties involved in getting the latest issues of foreign-published journals, this journal becomes not only interesting and instructive for a thinking reader but also a reference source.”

*The book and the revolution* No. 5 (17) 1922, p. 65.

“This journal aims at acquainting Russian physicists and all society interested in the aspects of physical science with the outstanding successes and achievements of physics. Some of the articles deal with the history of precise sciences, the methodology of physics and the evolution of the principal ideas of science. Issue 2 of volume II presents several articles on the most burning topics of modern physics. A considerable

part of the issue is taken up by the section ‘From current literature’ which briefly reviews foreign journals. In view of our undernourishment in Western scientific publications, this section especially attracts the avid interest of the reader. An important achievement of the editorial staff of *Uspekhi* is the very wise choice of refereed papers, giving a fairly complete profile of the research abroad. Another important section is the bibliographic one, presenting about twenty refereed bibliographic sources and evaluations. On the whole, the journal leaves a very favorable impression. Against the background of our current realities, the journal fulfils an important function and deserves profound gratitude. The journal also has an excellent look.”

*Printing and revolution*, second book of 1922, p. 335.

All in all, four issues of *UFN* appeared in 1918 (issues 3 and 4 were bound into one), on 262 pages altogether. The publisher of the journal is indicated as the “Moscow Science Publisher of the Moscow Science Institute”, *UFN* 1 (1) 84 (1918). The journal failed to appear in 1919. Volume 2 (346 pages in all) was printed in 1920 and 1921, and the second issue (1921) indicates that the Associate Editor was the then very young Édouard Vladimirovich Shpol'skiĭ (23.09.1892–21.08.1975). Volume 3 (497 pages in all) appeared in 1922–1923. The address of the editorial office was given as: Moscow, 3-ya Miusskaya ul., Physics Institute.

For the first three volumes, the Editor of the journal indicated on the front cover was Petr Petrovich Lazarev (14.04.1878–24.04.1942). The number of issues in volume 4 published in 1924 rose to six. Its editors were P P Lazarev and, on an equal footing with him on the front cover, É V Shpol'skiĭ. From that time on, the journal was published annually (with the exception of the hardest period of World War II). The last pre-war issue of *UFN* was issue 3 of Vol. 25,

## ОБЪЯВЛЕНИЯ ГОСУДАРСТВЕННОГО ИЗДАТЕЛЬСТВА.

### УСПЕХИ ФИЗИЧЕСКИХ НАУК.

Под редакцией П. П. Лазарева.

Обзорный журнал по физике и смежным с ней наукам. Выходит четыре раза в год выпусками по 7–10 печатных листов.

**ТОМ I.** (1918 год). СОДЕРЖАНИЕ: От редакции.—А. Н. Крылов. Северные сияния и магнитные бури.—П. П. Лазарев. Современные задачи молекулярной физики.—А. В. Раковский. Исследования Бриджмена в области высоких давлений.—Вейерштрасс. Речь, произнесенная при вступлении в должность ректора Берлинского университета.—Виктор Анри. Роль Лейбница в создании научных школ в России.—В. Д. Зернов. Успехи акустики за последние 15 лет.—Якоби. О жизни Декарта и о его методе, правильно изыскивать в науках истину. Ц. Райх и Штейн. О влиянии химической природы вещества на магнитные свойства тел.—А. И. Вачинский. Записка по случаю 300-летия со времени открытия Кеплером третьего закона планетных движений.—Некрологи: М. Ф. Смолюковский, А. Г. Дорошевский, Ф. Браун, А. Р. Колли.—Из текущей литературы.—Библиография.—Personalia. *Издание размыло.*

**ТОМ II, вып. 1.** (Стр. 1–140). Москва 1920 год. Цена 60 коп. доводен. СОДЕРЖАНИЕ: В. А. Анри. Современное научное мировоззрение.—П. З. Эппштейн. Применение учения о квантах к теории спектральных серий.—П. П. Лазарев. Курская магнитная аномалия.—А. Раковский. Из истории алгометрических таблиц.—Из текущей литературы.—Библиография.—Personalia.

**ТОМ II, вып. 2.** (Стр. 141–344). Москва 1921 г. Цена 75 коп. СОДЕРЖАНИЕ: А. Н. Крылов. Очерк истории установления основных начал механики.—В. К. Фредерикс. Общий принцип относительности Эйнштейна.—Г. С. Ландсберг. Отклонение света в гравитационном поле солнца.—Э. Резерфорд. Нуклеарное строение атома.—П. П. Лазарев. Основной психофизический закон и его современная формулировка.—Б. В. Ильин. Молекулярные силы и валентность в процессах физико-химических и биологических.—Э. В. Шпольский. Возрождение гипотезы Прута.—С. И. Вавилов. Затухание молекулярных колебаний и элементарное излучение.—Ю. А. Крутков. Принципы аналогии Бора в теории квантов.—Из текущей литературы.—Библиография.—Personalia.

**ТОМ III, вып. 2.** (Подготовлен к печати). СОДЕРЖАНИЕ: В. Нернст. Мироздание в свете новых исследований.—Э. Резерфорд. Искусственное расщепление элементов.—С. И. Вавилов. Световое давление, масса и энергия.—Г. В. Вульф. Успехи наших знаний о строении кристаллов.—П. П. Лазарев. Фотосинтез.—Нильс Бор. Строение атома и физико-химические свойства элементов.—А. И. Вачинский. Из истории русской науки.—Из текущей литературы.—Хроника.—Библиография.

В следующих номерах будут напечатаны, между прочим, статьи: А. Ф. Иоффе. Электрическая природа капиллярных сил.—Н. Н. Семенов. Столкновение медленных электронов с молекулами.—Б. В. Ильин. Физические и философские основания принципа относительности.—В. Коссель. Физическая природа сил валентности.—Э. В. Шпольский. Изотопы.—Я. И. Френкель. Дифракция рентгеновых лучей.—К. Фаянс. Растворимость и ионизация с точки зрения строения атома.—С. И. Вавилов. Затухание молекулярных колебаний.—А. А. Михайлов. Новый интерферометр Майкельсона и измерение угловых диаметров звезд.—В. В. Шулейкин. О цветности моря.—В. В. Шулейкин. Теория дивертиков Дебая.—В. К. Аркадьев. Магнитная спектроскопия и др.



Petr Petrovich Lazarev  
(14.04.1878–24.04.1942)



Édouard Vladimirovich Shpol'skiĭ  
(23.09.1892 – 21.08.1975)

signed into publication on 17.06.41, and issue 1 of volume 26 was signed in on 10.07.43.

As we saw, Édouard Vladimirovich Shpol'skiĭ participated in the preparation of *UFN* from the second volume of the journal (from 1920), acting as one of the two editors from 1924 to 1929. (The editors in 1929 and 1930 were B M Gessen, P P Lazarev and É V Shpol'skiĭ, from 1931 to issue 6 of 1936 — B M Gessen and É V Shpol'skiĭ. These staff changes reflected the dramatic events in the life of the country, in the lives of the editors and of their journal.) From the seventh issue of 1936 and until his death in 1975 É V Shpol'skiĭ was the Editor-in-Chief of the journal. He thus headed the journal for more than 50 years (!).

The paper printed on the 100th anniversary of Édouard Vladimirovich Shpol'skiĭ [Bolotnikova T N “Shpol'skiĭ effects” *Physics – Uspekhi* **162** (11) 183 (1992)] quotes the drafts of Shpol'skiĭ's speech: “I was working in the very first research institute in the land and could devote my time exclusively to science. Very soon, however, another side to my inclinations surfaced: the tendency not only to work in science, not only to acquire knowledge, but also to share this knowledge, to pass it on to the maximum possible number of people... This is when *Uspekhi Fizicheskikh Nauk* came on the scene and I was at its helm from volume II... I will not go into the details of how I carried the burden. I was doing my bit with the greatest excitement”.

Not everyone liked the policies chosen by the Editorial Board to achieve the goals of *UFN* (as formulated in the Declaration of the Editorial Board in issue I of the journal) and pressure was brought to bear on the journal in the 1940s and 1950s. The physicists of the Academy of Sciences actively defended the journal and an official re-confirmation of the Editorial Board was lacking for a long time. The board consisting of D I Blokhintsev, S I Vavilov (until his death in 1951), V I Veksler, S T Konobeevskii, S G Suvorov (deputy

Editor-in-Chief from 1954) and É V Shpol'skiĭ (Editor-in-Chief) survived unchanged from 1946 until 1964, even though in reality it was gradually absorbing other physicists who took part in its work. Only beginning with issue 4 of Vol. 83 (1964), did the Editorial Board officially incorporate V L Ginzburg, Ya B Zel'dovich, B B Kadomtsev, L V Keldysh, V A Ugarov and F L Shapiro.

After Shpol'skiĭ's death (21 August 1975), no one was given his job until some time later Evgeniĭ Konstantinovich Zavoĭskii was nominated; unfortunately, he died very soon (9 October 1976).

On 9 December 1976 Boris Borisovich Kadomtsev became the Editor-in-Chief of the *UFN*, and went onto lead it for 22 years.

In 1993 *UFN* celebrated its 75th anniversary. The following form was used for the occasion: the April issue of the 1993 volume was completely devoted, after a brief editorial foreword, to reprinting ten papers of Soviet physicists that were published in *UFN* before the World War II and never appeared abroad. The foreword explained the intentions of the Editorial Board: “These papers are more than of historical interest only. Many directions of research that nowadays are in classical textbooks are outlined by the specialists who were creating them. Therefore the analysis they presented and authors' arguments make it possible to reconstruct the depth of a problem, which is lost in current textbooks. This material will thus be of use to experts and at the same time emphasizes the role played by our journal in the progress of physics in the USSR”.

All the authors of these papers (A N Krylov, I E Tamm, G S Landsberg, G A Gamov, N N Semenov, P L Kapitza, É V Shpol'skiĭ, Ya B Zel'dovich, Yu B Khariton, I V Kurchatov, K A Petrzhak and G N Flerov) were outstanding scientists; alas, none of them are alive today. Their contribution to science is very well known and *Uspekhi* are proud of having published them on its pages.



Evgeniĭ Konstantinovich Zavoĭskii  
(28.09.1907 – 09.10.1976)



Boris Borisovich Kadomtsev  
(09.11.1928 – 19.08.1998)

B B Kadomtsev's death (19 August 1998) coincided with the severe financial crisis in Russia; it was necessary, for administrative reasons (to ensure staff salaries, cover printing expenditure, etc.) to nominate the new Editor-in-Chief with minimum delay. In view of this, the acting Editor-in-Chief became Vitalii Lazarevich Ginzburg, as soon as 31 August 1998; Ginzburg's ties with *Uspekhi* span almost sixty years. The renewed Editorial Board, shown on the cover of this issue was enacted by the Presidium of the Russian Academy of Sciences on November 10, 1998.

At the time of writing, *UFN* appears twelve times a year, on the 27th of each month. The present circulation of the journal in Russian is 1100 copies. In 1991–1998 the journal ran to 200 signatures annually. The circulation dropped over this period from 2500 to 1100 mostly because most, even the largest, libraries stopped subscribing to more than one copy of *UFN*; the number of subscribers has diminished to a much lesser extent.

Our journal is distributed abroad by JSC “Mezhdunarodnaya Kniga” and East View Publications Inc. On the territory of the former USSR, *UFN* is distributed via direct mailing by the TSENTROEKS company, so that subscribers can order individual issues of *UFN* (including issues from the last four years).

As of 1992, our journal is not subsidized by the Russian Academy of Sciences and is self-supporting.

The staff of the journal successfully organized — from scratch — the production of both Russian and English versions of the *UFN*. All issues in Russian appear on the target dates, those in English are currently delayed by two to three months.

The grant obtained in 1995 from the Russian Foundation of Basic Research was completely absorbed by incorporating a very new technology: the production of the electronic version of *Uspekhi* in English and offering it via the Internet. The staff of the journal developed the system of electronic distribution of articles in English in 1994 at the *UFN* Internet server (<http://ufn.ioc.ac.ru>) and in 1997 a mirror site was

created to facilitate access (<http://ufn.npi.msu.su>); our current Web-address is <http://www.ufn.ru>. In September 1998 the *UFN* server was visited daily by about a thousand people (mostly from universities of the USA, Germany, France, Japan, etc.). An analysis of the four-year statistics of attendance of the *UFN* server provides us with the readers' evaluation of the printed materials. An archives of *UFN* articles in English for the period from 1994 to 1998 has been created as a CD-ROM disk.

The foreign partner in publication and distribution of the English version of *UFN*, with the title *Physics – Uspekhi*, is a British publishing company, Turpion; owing to this interaction, it became possible to pay authors' fees immediately after the Russian version of the journal is released. A new section was added to the journal: “Physics news on the Internet”. Since 1996 the make-up of the English version of *UFN* has been prepared in Moscow and printed in London. A number of production processes are done jointly for the two language versions, which ensures the fairly high polygraphic quality of the Russian version of the journal (the tradition of providing the authors with 45 copies of their articles with an *UFN* cover has been retained). Additionally, when the version in English is prepared in Moscow, the authors are able to check the translation of their contributions at the correction stage.

*UFN* has always enjoyed, and continues to enjoy, a high rating among physics publications in the world (in 1991–1996 the Impact Factor of *UFN* was the highest among all natural science journals of the former USSR). The large number of download requests to the *UFN* server in the Internet is an independent confirmation of the high scientific level of the journal: readers downloaded 10 Terabytes of data from the server in 1998! More than 200 of the most important international information and scientific centers placed *Uspekhi Fizicheskikh Nauk Online* in the first lines of their lists of the main sources of information on physics and mathematics.

As of the end of 1998, *Physics – Uspekhi* began regular presentation of data on the latest books on physics and related fields, published in Russian by various publishers.

A more detailed history of *Uspekhi Fizicheskikh Nauk* will appear in the August issue of the journal, which will be dedicated to the 275th anniversary of the Russian Academy of Science.

*UFN* thus enters the ninth decade of its life armed with the modern technologies of journal publishing. Nevertheless, the aims and style of the journal have remained essentially the same as at the time of its founding. This idea is also emphasized in the Editorial Appeal that opens the present issue.