

Thirtieth Anniversary of the Physicists in the Golden Book

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Abstract. This work tells the story of 30-year anniversary of the “*Golden book of discoverers and inventors in Bulgaria*”. Discovery and invention activity of eight physicists included in this book is examined. Their contributions are in various fields of modern physics and technology – solid state physics, high energy physics, laser physics and technology, physics sensors, electronics and optoelectronics.

Keywords: Golden Book, Physicists, Bulgaria.

Thirty years is marked the year 2011 from the emergence of the “*Golden Book of discoverers and inventors in Bulgaria*” published by the Institute of inventions and rationalizations (INRA). This remarkable book was constituted in 1981 on the occasion of 1300th anniversary of the Bulgarian state creation. The Golden Book is a valuable and unique edition of dignity, sense and design. The inclusion in the Golden Book is a criterion for inventive and discovery achievements of Bulgarian scientists.

We will quote three of the eight clauses of the Statute of the Golden Book:

Clause 1 (1). The Golden Book of the Institute of inventions and rationalizations is founded as an expression of social recognition, appreciation and honor to the authors of scientific discoveries and to the inventors with highest creative achievements.

Clause 1 (2). The honor with inclusion of the name of the scientist in the Golden Book is accompanied with bestowing of a diploma and sign.

Clause 4 (2). The commission evaluated the proposed candidates on the base of the following criteria:

- scientific value of the created inventions;
- creations of new directions in science and the national economy.

The initial page of the Golden Book has been written to show that the book gives “*honor to those of our countrymen, whose works are*” gold plated “*the pride with which we say*”, “*Created in Bulgaria*”. At the Golden Book is exposed the discovery and inventive achievements of eight Bulgarian physicists for the period of 30 years (1981 – 2010) [1-11] (Tab. 1).

Table 1. *Physicists, included in the Golden Book as discoverers and inventors*

No	Year of inclusion	Included physicist	Scientific institution	Achievement
1.	1981	Georgi Nadjakov	ISSP-BAS	Discovery N 1
2.	1989	Velko Zaechky	HCTI-Sofia	Discovery N 7
3.	1989	Pavel Markov	INRNE-BAS	Discovery N 7
4.	1994	Nikola Sabotinov	ISSP-BAS	30 inventions
5.	1996	Chavdar Rumenin	ISER-BAS	30 inventions
6.	1999	Kroum Kolentsov	ISSP-BAS	31 inventions
7.	2009	Ivan Nedkov	IE-BAS	14 inventions
8.	2010	Nikolay Vuchkov	ISSP-BAS	13 inventions

Seventeen discoveries are included in the Golden Book. The authors of two of them are physicists. Honorary first place in the book takes George Nadzakov. He discovered photoelectric state of matter. Nadzakov found that permanent polarization appeared by simultaneous influence of electric field and light on some dielectrics and semiconductors, which is conserved in dark and which the light destroyed by flowing depolarization current. He called the substances in which it is observed, photoelectrets. The Bulgarian discovery No 1 was written in the State Register of Bulgaria on 22 October 1975 and was honored the first place of the Golden Book in 12 March 1981. The phenomenon has applications in electro-photography and xerography, in cosmic photography, electromagnetic transmissions to the Earth, in non-vacuum TV technics, in memory devices and as dosimeters of light and Röntgen radiations and pulses.

The discovery of Velko Zaechky and Pavel Markov in the field of high-energy physics is the second discovery in the field of physics and the seventh Bulgarian discovery. It was registered in the Golden Book in 1989. It concerns a regularity with the change of the radius of strong interaction of high energy protons. It was established, that the radius of the strong proton-proton interaction at energy over 10 *GeV* were increased by the energy. The discovery was included in the State Register of Bulgaria in 15 August 1987 with priority of the theoretical part in 6 July 1961, and for its experimental confirmation – in 22 July 1969. It was written in the Golden Book in 12 July 1989. The discovery gave a possibility for more regular and more exact interpretation of the complex and many-side character of the strong interaction of the protons. Beside significance of development of the theoretical models in nuclear physics, it finds application in the nuclear radiometry and medicine.

During the period 1994 – 2010, in the Golden Book are included five physicists as inventors with more than 100 inventions. These are the physicists Nikola Sabotinov, Chavdar Rumenin and Kroum Kolentsov (from 1994 to 1999), and Ivan Nedkov and Nikolay Vuchkov (from 2009 to 2010).

Professor Nikola Sabotinov is an eminent scientist in the field of quantum electronics, laser physics and technics. He created a new kind of gas lasers with steam of copper bromide, defended with 30 inventions in our country and patents in USA, England, Germany, France, Australia and other countries. The lasers are produced in Bulgaria and Australia and are introduced in the medicine practice. The name of N. Sabotinov was written in the Golden Book on 22 December 1994.

Chavdar Rumenin is an eminent scientist in sensor electronics. He is the creator of a new generation micro-sensors of Hall with parallel magneto-sensibility, corresponding to the modern integral technologies, as well as of magneto-transistor sensors with exclusively high sensibility and principally new vector-sensors and magnetometers with high selective capability without an analog in the control-measuring technology. He has 30 inventions and his name is written in the Golden Book on 15 January 1997.

Kroum Kolentsov is an eminent specialist in the field of physics of dielectrics and semiconductors with 31 inventions. He has contribution in the field of changeable-current electroluminescence and electroluminescent display device-building. He is the creator of hybrid electro-luminescence structures and display devices and arrangements with various

color emission and increased brightness of light and lifetime. His name was included in the Golden Book on 15 December 1999.

Professor Ivan Nedkov is an eminent specialist in the field of electronics of ferromagnetic materials and technology, as well as in the high-temperature superconductors and microwave ferrite arrangements. He is the author of 14 inventions. His name was written in the Golden Book in 2009.

Professor Nikolay Vuchkov is an eminent scientist in the field of laser physics and technics. He is the creator of a new class lasers with metal steams and new constructions laser tubes. He is the author of 13 inventions realized in our country and abroad with considerable economical effect. His name was written in the Golden Book in 2010.

The results mentioned above have paramount importance in various fields of contemporary physics and technics in the 20th century and the beginning of 21 century. These successes and achievements are in solid state physics, physics of semiconductors and dielectrics, high energy physics, quantum electronics, laser physics and technics, optoelectronics, sensor and ferromagnetic electronics. By them, Bulgarian applied and engineering physics took place in Europe and in the world during the 20th century. It will strive to conserve these results in the 21 century [12-17].

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