

New books on physics and related sciences

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Feinberg E L *Selected Works in Theoretical Physics* ('Monuments to Science in Russia' Series, Editor-in-Chief V L Ginzburg; Compiled by A D Mironov, N G Polukhina, I I Roizen) Vol. 1 (Moscow: Nauka, 2008) 434 pp. ISBN 978-5-02-036616-9; Vol. 2 (Moscow: Nauka, 2009) 392 pp. ISBN 978-5-02-036617-6.

E L Feinberg (1912–2005)—Full Member of the Russian Academy of Sciences, outstanding theoretical physicist with a broad span of interests in science. This edition includes E L Feinberg's papers on atomic and nuclear physics, acoustics and radiophysics, solid state physics, and the physics of cosmic rays. Intended for physics theoreticians, postgraduates and senior-year undergraduates of physics departments. (Akademizdatssentr 'Nauka' RAN: 117997 Moscow, ul. Profsoyuznaya 90; tel. (7-495) 334-98-59; fax (7-495) 420-22-20; e-mail: initsiat@naukaran.ru; URL: <http://www.naukaran.ru/>)

Klimov V V *Nanoplasmonics* (Moscow: Fizmatlit, 2009) 480 pp. ISBN 978-5-9221-1030-3.

The monograph gives the latest results in the new nanotechnology field—nanoplasmonics. It is an integral part of nanooptics and nanophotonics and operates with electron oscillations in metallic nanoparticles and nanostructures. The importance and promise of nanoplasmonics consists in allowing us to combine nanometer sizes of instruments and sensors with optical frequencies at which they operate. The book presents detailed descriptions of the modern methods of characterizing the plasmonic properties of nanoparticles and gives the main calculation formulas. It also discusses the latest applications of nanoplasmonics, from medical fields to electronics and to the creation of 'invisibility cloaks' and 'ideal lenses'. The volume is intended for researchers who need to quickly join the exciting world of nanooptics and nanoplasmonics. (Fiziko-Matematicheskaya Literatura MAIK 'Nauka/Interperiodika' Publ.: 117997 Moscow, ul. Profsoyuznaya 90; tel. (7-495) 334-74-21; fax (7-495) 334-76-20; e-mail: fizmat@maik.ru; URL: <http://www.fml.ru/>)

Lukash V N, Mikheeva E V *Physical Cosmology* (Moscow: Fizmatlit, 2009) (in print).

The book presents the foundations of the current cosmology and the theory of gravitation and discusses the most important gravitational systems—black holes and cosmological models, gravitational lensing and gravitational waves, gravitational matter confinement, as well as hot and cold stars—and investigates the structure of dark matter halos, and so forth. Special attention is paid to the weakly inhomogeneous Universe, its action and quantization, and to physical processes in the early Universe: the formation of the Hubble flow of matter, the gravitational quantum effect

of the parametric generation of cosmological density perturbations which are responsible for the formation of galaxies, acoustic modulation of the density perturbation spectrum, gravitational instability of dark matter, the generation of the anisotropy of cosmic microwave background and the large-scale structure of the Universe, the properties of dark energy and methods of measuring them, and some others. The book characterizes the most important achievements of observational cosmology, reviews the experimental basis of the cosmological Standard Model, discusses its extrapolations to past and future times and the simplest approaches to extending the Standard Model, and so forth. The volume is intended for senior-year students of physics departments of universities, postgraduates, and young researchers who major in or wish to major in cosmology. (Fiziko-Matematicheskaya Literatura MAIK 'Nauka/Interperiodika' Publ.: 117997 Moscow, ul. Profsoyuznaya 90; tel. (7-495) 334-74-21; fax (7-495) 334-76-20; e-mail: fizmat@maik.ru; URL: <http://www.fml.ru/>)

Artem Alikhanyan Remembered by Friends and Colleagues. On the 100th Anniversary of His Birth (Compiled by E A Mamidzhanyan, G I Merzon) 2nd ed., expanded (Moscow: Fizmatlit, 2008) 344 pp. ISBN 978-5-9221-0982-6.

This collection of memoir essays celebrates the 100th anniversary of the birth of Artem Isaakovich Alikhanyan (1908–1978), the outstanding scientist, gifted science manager, wonderful and unusual human being, Corresponding Member of the USSR Academy of Sciences, and Full Member of the Academy of Sciences of Armenia. He is known as a brilliant experimental physicist, one of the founders of nuclear physics, high-energy physics, and the science of cosmic rays in this country. A I Alikhanyan also founded the Laboratory of Elementary Particles at the P N Lebedev Physical Institute (FIAN) and the Chair of Experimental Nuclear Physics at the Moscow Engineering Physics Institute (MIFI), the Yerevan Physics Institute, and two high-altitude cosmophysical research stations in Armenia (Aragats and Nor-Amberd). He initiated and managed the work on construction of the 6-GeV electron ring accelerator in Yerevan and founded world-famous physics schools for young scientists. A I Alikhanyan's contribution to the progress of novel experimental methods for high-energy physics was also considerable. His range of interests was broad: he knew and loved literature, music, painting, and sports, and had friends among outstanding scientists, writers, composers, and painters. He was always ready to help his friends and colleagues in many ways when they needed help, or when their lives were made miserable by the powers that be. The world has become a bleaker place since he left. The book is intended for readers interested in the history of science in Russia and FSU. (Fiziko-Matematicheskaya Literatura MAIK 'Nauka/Interperiodika' Publ.: 117997 Moscow, ul. Profsoyuznaya 90; tel. (7-495) 334-74-21; fax (7-495) 334-76-20; e-mail: fizmat@maik.ru; URL: <http://www.fml.ru/>)

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