

Competition: “Best reviews and articles published in *Uspekhi Fizicheskikh Nauk* [*Physics – Uspekhi*] (*UFN*) journal in 2016”

The contests for the best reviews and papers published in *UFN* in 2013–2015 were only possible owing to a 2014 grant from the RF Ministry of Education and Science given within government support of scientific journal development programs. In 2016, the three-year State assistance to *UFN* within this grant was over, but ways were found to continue the contest for reviews and papers published in *UFN* in 2016. As in previous years, it was decided by the *UFN* editorial council to carry out the contest separately for “Reviews of topical problems” and for papers from other *UFN* rubrics (two sets of nominations).

The authors of monographic reviews in the journal *UFN* for 24 years (from 1994 to 2017) were invited, as in past years, as experts. A letter to expert authors was sent to the addresses of nearly 800 authors contained in the author database of *UFN*. Over 200 invited expert authors responded and 180 expert authors sent particular nominations this year.

Seventy-three papers out of 75 published in *UFN* in 2016 in rubrics “Reviews of topical problems”, “Physics of our days”, “Instruments and methods of investigation”, “Methodical notes”, “From the history of physics”, and “Conferences and symposia” (these rubrics of the journal *UFN* are included in the so-called Citable Items in the databases of Web of Science) were nominated for the Prize!

As with the last three years, this shows that virtually each *UFN* paper published in 2016 was believed by some expert author to be the best, that is, almost all the *UFN* papers of 2016 found interested and thoughtful readers, which makes us happy.

This year, a record number of expert authors (180 experts, which is even more than last year, when 147 experts took part in the nomination for the 2015 *UFN* Prize) participated in the nomination for the 2016 *UFN* Prize, and therefore a decision on the *UFN*-2016 Prize was taken, like last year, allowing the rating of papers based on the opinion of the expert authors, and when taking the final decision, the Competition Committee mainly considered precisely this rating.

The list of reviews and papers that won the *UFN* 2016 Competition is as follows:

Best reviews for *UFN* 2016 (contest winner)

O V Verkhodanov “Cosmological results from the Planck space mission and their comparison with data from the WMAP and BICEP2 experiments” *Phys. Usp.* **59** 3–41 (2016) [in Russian: “Kosmologicheskie rezul’taty kosmicheskoi missii ‘Planck’. Sravnenie s dannymi eksperimentov WMAP i BICEP2” *Usp. Fiz. Nauk* **186** 3–46 (2016)]

Best reviews for *UFN* 2016 (contest laureates)

F Ya Khalili “Quantum measurements in gravitational wave detectors” *Phys. Usp.* **59** 968–996 (2016) [in Russian: “Kvantovye izmereniya v detektorakh gravitatsionnykh voln” *Usp. Fiz. Nauk* **186** 1059–1089 (2016)]

V A Milichko, A S Shalin, I S Mukhin, A E Kovrov, A A Krasilin, A V Vinogradov, P A Belov, C R Simovskii “Solar photovoltaics: current state and trends” *Phys. Usp.* **59** 727–772 (2016) [in Russian:

“Solnechnaya fotovol’taika: sovremennoe sostoyanie i tendentsii razvitiya” *Usp. Fiz. Nauk* **186** 801–852 (2016)]

V V Strelkov, V T Platonenko, A F Sterzhantov, M Yu Ryabikin “Attosecond electromagnetic pulses: generation, measurement, and application. Generation of high-order harmonics of intense laser field for attosecond pulse production” *Phys. Usp.* **59** 425–445 (2016) [in Russian: “Attosekundnye elektromagnitnye impul’sy: generatsiya, izmerenie i primenenie. Generatsiya vysokikh garmonik intensivnogo lazernogo izlucheniya dlya polucheniya attosekundnykh impul’sov” *Usp. Fiz. Nauk* **186** 449–470 (2016)]

P A Krachkov, R N Lee, A I Milstein “Quantum electrodynamics processes in the interaction of high-energy particles with atoms” *Phys. Usp.* **59** 619–641 (2016) [in Russian: “Protsesty kvantovoi elektrodinamiki pri vzaimodeistvii chastits vysokoi energii s atomami” *Usp. Fiz. Nauk* **186** 689–711 (2016)]

Best paper for *UFN* 2016 (contest winners)

V F Mukhanov “Quantum Universe” *Phys. Usp.* **59** 1021–1027 (2016) [in Russian: “Kvantovaya vselennaya” *Usp. Fiz. Nauk* **186** 1117–1125 (2016)] (Physics of our days)

V I Klyatskin “Stochastic structure formation in random media” *Phys. Usp.* **59** 67–95 (2016) [in Russian: “Stokhasticheskoe strukturoobrazovanie v sluchainykh sredakh” *Usp. Fiz. Nauk* **186** 75–104 (2016)] (Physics of our days)

Best papers for *UFN*-2016 (contest laureates):

I N Toptygin, K Levina “Energy–momentum tensor of the electromagnetic field in dispersive media” *Phys. Usp.* **59** 141–152 (2016) [in Russian: “Tensor energii-impul’sa elektromagnitnogo polya v sredakh s dispersiei” *Usp. Fiz. Nauk* **186** 146–158 (2016)] (Methodological notes)

V B Braginsky, I A Bilenko, S P Vyatchanin, M L Gorodetsky, V P Mitrofanov, L G Prokhorov, S E Strigin, F Ya Khalili “Background to the discovery of gravitational waves” *Phys. Usp.* **59** 879–885 (2016) [in Russian: “Doroga k otkrytiyu gravitatsionnykh voln” *Usp. Fiz. Nauk* **186** 968–974 (2016)] (Conferences and symposia)

V I Pustovoit “On the direct detection of gravitational waves” *Phys. Usp.* **59** 1034–1051 (2016) [in Russian: “O neposredstvennom obnaruzhenii gravitatsionnykh voln” *Usp. Fiz. Nauk* **186** 1133–1152 (2016)] (Conferences and symposia)

All the authors of the papers, both the winners and laureates of the *UFN* 2016 Competition, will solemnly be given diplomas at the P N Lebedev Physical Institute (FIAN) at the General Meeting of the Division of Physical Sciences of the Russian Academy of Sciences. The English-language versions of laureate papers will be open for viewing on the site of our partners—the Institute of Physics Publishing (IOP): <http://iopscience.iop.org/1063-7869/> over the entire year of 2018 and will also be tagged with special markers of laureate papers on the *UFN* site (www.ufn.ru), where a special page will be devoted to the *UFN* 2016 Competition.

We congratulate the Prize winners of the *UFN* 2016 Competition and are grateful to everybody who contributed to the implementation of this competition and took part in its organization.

Chair of the Competition Committee: *V A Rubakov*
Secretary of the Competition Committee: *M S Aksent’eva*