

International Prize on Power Engineering “GLOBAL ENERGY”



Zhores I. Alferov

Nick Holonyak, Professor at the University of Illinois (USA), was awarded for “fundamental contributions to the development of power silicon electronics and invention of the first semi-conducting light-emitting diodes in a visible part of the spectrum”. Thyristor invented by Holonyak allows the transformation of direct current into alternating and vice versa, to direct this process, to store and accumulate energy. This device is used for every electric locomotive, for frequency transformation. Such devices help to save significant amounts of energy, thus, about 30 percent of all energy produced in the world is processed through thyristors.

Nick Holonyak’s other invention, i.e. semi-conducting light-emitting diodes in a visible part of the spectrum, has led to development of a new field of the modern power engineering. Supposedly, efficient and safe light-emitting diodes will replace daylight lamps in the next ten years.

“Although Nick Holonyak’s invention dates back to the end of the 50ies of the last century, it remains current”

International Prize “Global Energy” was first presented in St. Petersburg on June 15, 2003. The bonus fund of \$900,000 was shared between three scientists “whose work has been and is still important both to the last century and future research”, said Zhores Alferov, Chair man of the Global Energy Prize Award International Committee.

said the Chairman of Expert Commission, Academician Vladimir Fortov. “This is one of the key inventions leading to the search of new ways of sustainable energy saving”.

Gennady Mesyats, Academician of Russian Academy of Sciences, and **Ian Douglas Smith**, Senior Scientist at The Titan Pulse Science Division, were awarded for giving birth to a new direction in the field of power engineering, i.e. power pulse energy. Due to their research, commutation of high-level currents at megawatt levels of voltage has become possible; a number of powerful current choppers have been created, further more, there have been developed transformer constructions which allow avoiding energy loss in power transmission lines. These research and innovations resulted in the creation of a number of unique pulse power machines and devices widely used in Russia and abroad (“Aurora”, “Helia” (USA), “Sinus”, “Gamma”, “Maus”, “Pik” (Russia) and others).



Diploma of Global Energy Prize laureate

