



Toktar Iskatayevich Taurbayev
(14.11.1937 – 05.06.2019)

**Dedicated to the memory of scientist and
developer of photovoltaics in Kazakhstan, obituary**

Toktar Iskatayevich Taurbayev, physicist, candidate of physical and mathematical sciences, professor at al-Farabi Kazakh National University and chief researcher of the Institute of Experimental and Theoretical Physics (IETP) and National Nanotechnological Laboratory of Open Type (NNLOT). He was a remarkable man and a great developer of the scientific direction of “Photovoltaics” in the Republic of Kazakhstan. He has passed away on the 05th June, 2019 at the age of 81.

Toktar Taurbayev was born on November 14, 1937 in Almaty, Kazakhstan. In 1962, he graduated from the Tomsk Polytechnical University, with qualification in semiconductor and dielectric materials. In between 1966-1970, he was an aspirant of the Physics and Energetics Institute of the USSR Academy of Sciences, in Obninsk, Russian SSR. In 1971, he defended his candidate thesis on the topic: “The study of EMF in semiconductors with fissile material”.

Since 1973, T. Taurbayev worked at the Faculty of Physics at al-Farabi Kazakh National University. He started his university career as a senior scientific fellow at the Department of nuclear physics. Since 1977, he started giving lectures as an Assistant professor at the Department of solid-state physics.

At the same period T. Taurbayev is being involved in active research work and was a coordinator of scientific research projects with various organizations, such as NPO Kvant, Moscow, GOI, Institute of High Energies and INP. In 1978, the T.I. Taurbaev’s research group on of the first in the Soviet Union, obtained solar cells with efficiency compared with the level of the best samples in the world. Later these solar cells were used in solar panels, which were installed on the wings of Soviet satellites.

In 1982, T.I. Taurbayev founded the “Laboratory of semiconductor optoelectronics and photonics” equipped with latest educational research equipment, computers and office equipment which employs was more than 50 people. In addition to the continuation of applied research, an important focus of his laboratory was the performance of fundamental researches related to the study of different semiconductor materials and their optoelectronic properties.

During the work the laboratory staff have published about 100 articles, 200 abstracts and proceedings of conferences and obtained 40 authorship certificates. More than a hundred students completed their diploma projects in the laboratory on semiconductor materials, as well as solar cells based on gallium arsenide, amorphous and crystalline silicon.

Under supervising of Toktar Taurbayev 9 candidates in physical and mathematical sciences and 3 Ph.D have successfully defended their thesis.

Two Marks of Honor have awarded T.I. Taurbayev: for contribution to the development of science in the Republic of Kazakhstan and «Honorary Worker of Education» of the Republic of Kazakhstan.

Professor T. Taurbayev continued research works in the development of semiconductors and dielectric materials physics and their application in photovoltaics as a head of scientific projects in a number of fundamental research programs of the Ministry of Education and Sciences of the Republic of Kazakhstan. At the same time, Laboratory of semiconductor optoelectronics and photonics carried out researches and production activities, introducing novel semiconductor technologies at enterprises in Kazakhstan. He was also engaged in activity related with establishment of close scientific, industrial and pedagogical relationships with leading universities in the former

Soviet space and far abroad. Among them Lomonosov Moscow State University (MSU, Moscow, Russia), Moscow Physical and Technical Institute (Moscow, Russia), Institute of Radioelectronics RAS (Fryazino, Russia), Saint-Petersburg State University (Saint-Petersburg, Russia), Ioffe Physical and Technical Institute (Saint-Petersburg, Russia), Vilnius State University (Vilnius, Lithuania), Renn University (Renn, France), Karlsruhe Institute of Technology (Karlsruhe, Germany), Leibniz Institute of Photonic Technology (Jena, Germany).

**Al-Farabi Kazakh National University,
Faculty of Physics and Technology**

**Institute of Experimental and
Theoretical Physics**

**National Nanotechnological Laboratory
of Open Type**