

KAYRAT KAMALOVICH KADYRZHANOV

(to 70 anniversary of birth)

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December 5, 2015 marked 70 years old Kadyrzhanov Kayrat Kamalovich - Honorary Academician of the National Academy of Sciences of the Republic of Kazakhstan, academician of the International Academy of Engineering, National Academy of Engineering, the Kazakh National Academy of Natural Sciences, a foreign member of the Russian Academy of Natural Sciences, a renowned expert in the field of radiation physics of solids, ecology radiation and nuclear technologies.

Kairat Kamalovich was born in Taldy-Kurgan of the Kazakh Soviet Socialist Republic in the family of the People's Commissar of the local industry of the Kazakh SSR Kamala Kadyrzhanova and medical worker Maymuna Kunaeva. After graduating in 1964 secondary school №36 in Alma-Ata he entered the Moscow Engineering Physics Institute at the Department of Experimental and Theoretical Physics, after the third year he specialized in solid state physics and performed the graduate work at the Institute of Atomic Energy I.V. Kurchatov State Committee for Atomic Energy of the USSR under the direction of prominent Soviet physicist and educator, twice Hero of Socialist Labor, Academician Isaak Konstantinovich Kikoin. In 1970 he graduated from the Moscow Engineering Physics Institute with diploma "Engineer-physicist" and was assigned an intern researcher at the Almaty Kazakh State University S.M. Kirov at the Physical-Technical Faculty.

Enrolling in graduate school here, Kairat Kamalovich was on probation at the Institute of Atomic Energy I.V. Kurchatov in Moscow at head of his graduate work academician I.K. Kikoin. Years of work in IAE were dedicated to research in semiconductor physics, thermodynamics and thermal physics. In particular, Kadyrzhanov K.K. studied thermodynamics of boiling fluids the experiments with liquid helium. The result of this work was the PhD thesis on a specialty "Thermophysics" "Study of the nucleation of the vapor phase at boiling liquids," which Kairat Kamalovich successfully defended in 1976 at the Specialized Council of the Physics Department of the Kazakh State University S.M. Kirov. Herewith he was from 1975 a senior lecturer at the Almaty Kazakh Polytechnic Institute V.I. Lenin.

Since 1978, Kairat Kamalovich - senior researcher at the Institute of Nuclear Physics of the Academy of Sciences of the Kazakh SSR in Alma-Ata. Here, under his leadership, successfully developed a new scientific direction of the institute - ion implantation of metals and in 1985, with the active assistance of the director of the Institute of Nuclear Physics of the Kazakh SSR academician Sh.Sh. Ibragimov, he organized the Laboratory of ion implantation of metals. An important role in the development of this area has played a successful completion of construction and commissioning of a heavy ion accelerator with an energy up to 2 MeV. Thanks to the active work of the K.K. Kadyrzhanov with employees were obtained record parameters of the beam at energetic stability and range of accelerated ions.

The presence of unique equipment and new approaches in radiation physics of solids allowed laboratory staff under the direction of K.K. Kadyrzhanov together with the Dr Sci. Phys&Math A.L. Udovsky (Institute of Metallurgy, Academy of Sciences of the USSR), Dr Sci. Phys&Math V.S. Rusakov (Lomonosov MSU) and a Corresponding Member of the Kazakh SSR, director of the Institute of Nuclear Physics NNC A.K. Zhetbaev solve a number of urgent problems of solid state physics, in particular, create the physical basis of manufacturing technology of multilayer metallic materials; justify the basic design principles of radiation and thermal stability of layered metallic systems; experimentally confirm the thermodynamic approach to the obtaining of chemically compatible coatings on alloys; investigate the nature of the phase formation and thermodynamic equilibrium of alloys implant of introduction on ferriferous matrix; discover the phenomenon of the aging of nitrogenous implant alloys; discover the hysteresis effect of embryos sizes in the first phase at the first order phase transition.

K.K. Kadyrzhanov led also a number of applications, in particular, he has developed the ion-plasma installation "Argamak", on the basis of which created: a production line created on the basis of which: technological line for coating of precious metals (silver, gold) at Ust-Kamenogorsk Metals

Plant (implemented in 1996); technology for producing coatings and beryllium foils on mining and chemical plant "Ulba" (Ust-Kamenogorsk, East Kazakhstan region); technology for applying decorative and strengthening coatings. The result was a new scientific direction of thermodynamics of alloys with a nonuniform phase-structural state and the fundamental basics of technology multilayer metallic materials.

In 1993, the specialized council of the Physics Department of the Belarusian State University K.K. Kadyrzhanov defended his thesis for the degree of Doctor of physical and mathematical sciences on a specialty "Solid State Physics" on the theme "Physical fundamentals of ion technologies to improve the heat resistance of superalloys" and in 1995 he was appointed Deputy Director for Science Institute of Nuclear Physics of the National Nuclear Center of the Republic of Kazakhstan (NNC). In 1997 he was awarded the title of professor in the specialty "Physics" and from 1997 to 2006, Kairat Kadyrzhanov - Director of the Institute of Nuclear Physics.

Since 1997 K.K. Kadyrzhanov manages radio-ecological researches areas of the former nuclear firing fields, as well as technogenic objects in western Kazakhstan. He has published more than 40 papers on topical radioecological problems. According to studies at the Semipalatinsk test site described the most radiation-hazardous areas. Under the leadership of K.K. Kadyrzhanov were conducted the scaled researches to assess the radio-ecological status of the territory of one of the world's largest oil and gas condensate field Karachaganak, where 80 years of the twentieth century there have been six underground nuclear explosions; are conducted studies the object containing the waste of uranium mining - tailings "Koshkar-ata" in Mangistau region of Kazakhstan.

The INP in 2003 on the initiative and under the direction of K.K. Kadyrzhanov launched a project of the Center of nuclear medicine in Kazakhstan. One of the important area of high-tech nuclear technologies, developed under the leadership of K.K. Kadyrzhanov in recent years, is to organize the production of radioisotope products. INP has qualified specialists and technical base for the production of medical radioisotopes and radio-pharmaceuticals. The efforts of scientists were focused on getting the four most essential drugs, which pan out to achieve significant results - preparations of thallium-201, technetium-99m, iodine-131, gallium-67.

Led by Kairat Kadyrzhanov Institute of Nuclear Physics, every two years, starting from 1997, conduct an International Conference on "Nuclear and Radiation Physics" under the sponsorship of NATO and the IAEA, which became visible and a traditional forum for scientists and physicists from Kazakhstan, CIS and foreign countries. On his initiative in 2003 in the Eurasian National University named after L.N. Gumilyov was created (in cooperation with JINR, Russia, Dubna) Interdisciplinary Research Complex on the basis of heavy-ion accelerator for solving practical problems of production and use of nuclear membrane as a unifying factor in the development of technology, science and high-tech business, as well as issues of formation of scientific environment and education.

Results of scientific activity of K.K. Kadyrzhanov are published in leading national and international journals, he repeatedly presented at international conferences, symposia, meetings and received a well-deserved fame and recognition

among professionals. The list of his publications has more than 400 publications, including 12 monographs; he brought up 12 candidates and 3 doctors of sciences. Kairat Kadyrzhanov - a permanent member of the Specialized council on protection of master's and doctoral theses in the field of "nuclear physics", "Solid state physics" and "Experimental physics" of the Institute of Nuclear Physics.

In different years Kairat Kadyrzhanov was a member of editorial boards and chief editor of the scientific journals "Bulletin of National Academy of Sciences of Kazakhstan, ser. Phys-Math", "Bulletin of the NNC RK," "Man. Energy. Atom", now - a member of the editorial board of the journal "Radioelectronics . Nanosystems. Information Technology "(Russian Academy of Natural Sciences).

Kairat Kadyrzhanov is a member of several academies - academician of the National Engineering Academy of the Republic of Kazakhstan on specialty "Physical Materials Science" (1999); academician of the International Academy of Engineering (2000), an honorary member of the National Academy of Sciences of the Republic of Kazakhstan (2001), the Kazakh National Academy of Natural Sciences (2001) and foreign member of the Russian Academy of Natural Sciences (2008) in the Department of the problems of radio electronics, nanoscale physics and information technology. He is a member of the International Council on the application of the Mossbauer Effect (IBAME, 1999), Marshal of the French community to promote industry (2002).

Kairat Kadyrzhanov awarded the state, departmental, commemorative and foreign orders, medals and honorary signs, international and national awards, including RK State Prize for Science and Technology (2009), Prize of JINR (2008, Russia, Dubna), the Gold Medal of the First President of the Republic of Kazakhstan (2012), Medal of Napoleon's French Community Industry Promotion (2002) and others. He is Honored worker of the nuclear industry of Kazakhstan (2007) and honorary citizen of the city of Kurchatov (2010).

Currently Kairat Kadyrzhanov - Advisor to the Rector of the Eurasian National University. LN Gumilev, professor of nuclear physics, new materials and technologies of physical and technical faculty. Member of the Commission on State Prizes in Science and Technology. Al-Farabi, the chairman of the National Science Council of the Republic of Kazakhstan in the direction of "Energy and mechanical engineering."

Professor K.K. Kadyrzhanov, being a well-known organizer of physical science in the country, enjoys great prestige and respect among scientists and manufacturers. It is deeply devoted to science scholar, which is characterized by high decency, principality and caring attitude for colleagues and young scientists.

Friends, colleagues and students sincerely congratulate Kairat Kamalovich with a glorious jubilee and wish him good health, good luck and success in research and teaching.

The editorial staff of the journal RENSIT of Department of problems electronics, nanoscale physics and information technology RANS heartily joins to these wishes.

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