



## **Dr. Pavel KOZLOV**

### **Biography**

Dr. Pavel Kozlov, 70, graduated in Metallurgy from the North Caucasian Mining and Metallurgy Institute, a leading Russian Center of higher education in the area of non-ferrous metals. After graduation, he began to work as a metallurgical engineer at a plant that produced a number of non-ferrous metals such as zinc, cadmium, indium, lead and copper. After gaining a rich practical experience in metallurgical field, he also supervised the Waelz plant. Afterwards, he worked at the VNIIsvetmet Institute, a USSR leading institute of metallurgy where he managed the laboratory of zinc metallurgy and obtained his Doctoral degree.

Dr. Pavel Kozlov has developed a processing technology for treatment of metallurgical wastes containing zinc, cadmium, lead, indium, tin, copper. This technology carries out the recycling of the wastes from non-ferrous and ferrous metallurgical and chemical industry and simultaneously obtain by extraction the valuable components contained in it. The main scientific-and-technical idea, behind this technology is the separation by distillation of elements from the complex oxide systems obtained from reducing conditions in the rotary kiln furnace.

Dr. Pavel Kozlov has also developed the technology of fumes processing in alkali solutions. In contrast to traditional technologies of fumes processing in acidic mediums, the alkali solutions of zinc during electrolysis makes possible the production of a fine dispersed zinc powder.

Furthermore, he developed a hydrometallurgical technology for the production of indium powders by a disproportionation method.

He was the first to propose the charging of materials and reagents in the rotary kilns from both loading and unloading zone of kiln.

Dr. Pavel Kozlov is one of the pioneers of the use of steam in metallurgy. He proposed to use the steam produced in waste-heat boilers for cooling of off-gases of rotary kilns. Dr. Kozlov also actively participated in the design of the equipment.

In 1998, he defended his PhD thesis and was awarded the title of Doctor of Engineering Science. The object of his thesis was the development of theoretical basis and related technologies and equipment of an environmentally friendly and of energy-saving process for treatment of zinc, polymetallic sulfides as well as technogenic raw materials and concentrates.

The low-waste, environmentally safe, pyro-hydrometallurgical technologies for the processing of oxidized and sulfide zinc raw materials, developed by Dr. Kozlov or his team or through his direct creative participation, have been introduced in large Zinc Plants such as Chelyabinsk, Riddersk, and Vladikavkaz plants in Russia, Ust-Kamenogorsk plant in Kazakhstan, Almalyk plant in Uzbekistan and Cinkur plant in Turkey.

Dr. Kozlov is recipient of several awards.

In 2000, two of his patents were awarded the gold and silver medals at the "Eureka 2000" Exhibition of Inventions (Brussels). In 2013, a group of authors from the Chelyabinsk Zinc Plant was awarded the silver medal at the "Metal-Expo" International Exhibition (Moscow).

In 2001, he was awarded the title of honor "RF Honored Inventor" by a decree of the President of the Russian Federation.

In 2002 and 2014, he was part of a group of authors that were awarded the "RF Government Prize Winner of Science and Technology".

In 2010 he was awarded the title of honor "RF Honored Worker of Science" by a decree of the President of Russian Federation.

Presently, Dr. Kozlov is a member of the editorial board of the Non-ferrous Metals Journal, and a member of the Academic Council for Ph.D. defense and doctoral thesis at the Gintsvetmet Institute.

He has produced 353 scientific publications including 9 monographs, 246 journal and proceedings articles as well as 98 patents.