

*Academician of Russian Academy of Science,*  
*Prof. Dmitry Pushcharovsky*  
SHORT PROFESSIONAL INFO

Dmitry Pushcharovsky was born in Moscow on May 16, 1944. He carried his studies at Moscow State University, taking his degree in Geochemistry in 1967 at the Faculty of Geology. Postgraduate student and then research scientist he completed his Ph.D. degree in Crystallography in 1971. The former President of IUCr academician N.V. Belov was his supervisor. In 1973-74 he worked in Switzerland (Geneva University). In 1976 he became a senior research scientist. In 1984 he completed his D.Sc. degree in Mineralogy (Institute of Mineralogy, Geochemistry and Petrology of Ore Deposits, Russian Acad. of Science, Moscow).

In 1992 - full professor in crystallography and Crystal chemistry and in 2002 he was elected as a Dean of Geological Faculty of Moscow State University with the 2000 persons (staff + students). In his teaching activity he carried out courses in X-ray crystallography, crystal chemistry, structure and physical properties of crystals. Since 2002 – head of the structural department of the Institute of Crystallography RAS.

Corresponding member of the Russian Academy of Science (2000), Academician of the Russian Academy of Science (2008). Merited scientist of Russian Federation (2004). In 1997-2001 he was nominated as Soros (ISSEP) professor. In 2002-05 – the winner of Moscow professor's grants. In 2000 D. Pushcharovsky received the main prize in Earth Sciences established by the International academic publishing company "Pleiades Publishing, Inc." for the new concept of mantle structure, based on the most recent seismological data and on the phase transition studies of mantle minerals. The key point of this alternative model is the presence of the middle mantle in between 840-1700 km. In 2001 professor Pushcharovsky was awarded by Lomonosov prize for academic activity. In 2005 Austrian Mineralogical Society nominated D. Pushcharovsky as its member and awarded him the Friedrich Becke-Medal. In 2011 he was decorated by the order of Friendship.

The scientific activity of prof. D. Pushcharovsky was mainly addressed towards the crystal chemical, structural and micro-structural study of minerals and, to this aim, he coordinated and addressed the scientific activities of a group of researchers working in the fields of structural mineralogy, crystal chemistry of minerals and systematic mineralogy. Moreover he established close scientific relations with researchers in various countries, mainly Italy, Switzerland, Germany, China, Austria, Portugal, Brazil and United States, to carry joint research projects on themes of shared interest. The main objectives of his work are connected with structural determination by X-ray methods of natural silicates, carbonates, sulphates and their synthetic analogues. The results of these investigations were submitted to International Commission on new Minerals of IMA, which conformed as new 21 minerals, first studied by Prof. D. Pushcharovsky. Megacyclite, belkovite, mineevite, clinophosinaite,

clinobehoite, etc. are among them. The special interest of D.Pushcharovsky is concentrated on crystal chemical principles of silicates and related compounds (germanates, phosphates, sulphates and some others). He studied more than 90 crystal structures and discovered six completely new tetrahedral complexes in silicates (18-membered rings in megacyclite, single bands in haiweeite, double bands in revdite, layer built of 10-, 6- and 4-membered rings in synthetic K,Yb - silicate, triple layer in synthetic Na, Pr-silicate and interrupted framework in grumantite). It is of note that the crystal structures of arrojadite, megacyclite, clinobehoite and revdite, first studied by D.Pushcharovsky are considered among the most complex in the mineral world. These data completed the crystal chemical classification of silicates - the most abundant minerals in the earth crust, which find diverse applications in many modern technologies (cement production, ion exchange, molecular sieves, selective shape catalysis, ionic conductivity etc.). His study of the crystal structures of 6 minerals with several microns in size using X-rays from synchrotron source opens the gate to a new field of microgeochemistry. New natural copper arsenate hydrate was named by Swiss mineralogists after him - *pushcharovskite*.

In 1981-82 D.Yu.Pushcharovsky realized the project, connected with the exploitation of X-ray powder diffractometer directly on the board of research vessel "Dmitry Mendeleev" during its 27th expedition.

In 1998-2006 he is a chairman of the IMA Commission on Classification of Minerals and a co-chair of Special Interest Group "Mineralogical Crystallography" ECA (1998-2002). He represents IUCr commission "Inorganic and mineral structures" in the Scientific Program Committee of IUCr General Assembly which was held in 2005 in Florence. Vice-president of the National committee of Russian geologists, member of National committee of Russian crystallographers. Editor-in-chief of Bulletin Moscow Vestnik MSU, ser. Geology, associated editor of European Journal of Mineralogy, Zapisky of Russian Mineralogical Society and Crystallography Reports.

Author of 9 text-books and monographs, e.g. "Geology of the Earth's Mantle" (2010), "XRD studies of minerals" (2000), "Structural mineralogy of silicates and their analogues" (1986), "Structural types of minerals" (1990), "Crystal chemistry of sulphates" (1989), "Structure and properties of crystals" (1982). Approximately 450 published papers. In 1992 as an invited lecturer delivered a contribution "Structural principles of silicates and related compounds" in frame of International School "Modern Perspectives in Inorganic Crystal Chemistry" (Erice, Italy).