

Professor Doctor Elena V. Boldyreva

Russian, born 04.02.1961 in Tomsk (Russia). Graduated from Novosibirsk State University in 1982. In 1988 received Ph.D in Physical Chemistry at the Institute of Solid State Chemistry (Novosibirsk). In 2000 received Doctor of Sciences in Solid State Chemistry at the Institute of Solid State Chemistry (Novosibirsk). Since 2004 is the Head of the Department of Solid State Chemistry of Novosibirsk State University and a professor at the Research and Education Center on Molecular Design and Ecologically Safe Technologies. Since 2010 is a Chief Researcher of the Institute of Solid State Chemistry and Mechanochemistry SB RAS and the Head of the Research Group on Reactivity of Solids.

Trained as a physical chemist and a solid-state chemist, she started her research carrier 35 years ago at the Institute of Solid State Chemistry and Mechanochemistry (Novosibirsk, Russian Academy of Sciences). Her early research focused on the study of photomechanical effects (crystals bending) in crystals of coordination compounds. She was interested in the general role of mechanical stresses and strain in solid-state reactivity. This led her to the fascinating field of high-pressure research, which has been the focus of her scientific career since 1991. She began her work in this field when she first visited Philips-University in Marburg/Lahn (Germany) to carry out an IR-spectroscopy study at high pressures. She is greatly indebted to Dr. Ahsbahs, Dr. Uchtmann, Prof. F. Hensel and the Humboldt Foundation for the wonderful years in Marburg, during which time she learnt a lot about a broad range of high-pressure techniques. Having returned to Russia from Germany, she started a research group in Novosibirsk, Russia, which is now very well established. The group combines X-ray single-crystal and powder diffraction at high pressures with IR- and Raman spectroscopies, as well as optical microscopy. The group uses laboratory instruments (STOE-IPDS-2T, STOE STADI-4 and Agilent Xcalibur Gemini R Ultra), as well as synchrotron radiation sources for our work. From high-pressure research of coordination compounds that exhibit photomechanical effects, Elena Boldyreva moved to studying the effect of pressure on solid pharmaceutical compounds, amino acids and other biomimetic molecules. Her main interests are in the polymorphism of drugs and biomimetics, the properties of hydrogen bonds and the role of kinetic factors in solid-state transformations. She also continues to study the relation between stresses and solid-state reactivity, with particular interest in photo- and thermo- mechanical effects. She was a lecturer at the first Erice School on High-Pressure Crystallography (directors P. McMillan and A. Katrusiak), and a co-director of the second Erice School on High-Pressure Crystallography (together with P. Dera).

Boldyreva has spent many research terms abroad, including a Humboldt Fellowship with Prof. F. Hensel (Marburg University, Germany), a visiting professorship with Prof. J.-M. Lehn (University Louis-Pasteur, Strasbourg, France), a Royal Society Fellowship with Prof. J.A.K. Howard (Durham University, Great Britain), a CNR Fellowship with Prof. A. Gavezzotti and Prof. A. Sironi (Milan University, Italy). She has given invited lectures at about 60 Institutes and Universities in Europe, Japan, USA, China, India, and South Africa.

Boldyreva is a member of many international societies: International Advisory Committee on the Reactivity of Solids, European Crystallographic Association, International Mechanochemical Association, American Nanosociety, COMPRES society (USA), American Chemical Society, National Committee of Russian Crystallographers, International Committee on the Chemistry of the Organic Solid State, International Association of Physical Chemists. She is a co-Editor of the *Zeitschrift für Kristallographie* and *Acta Crystallographica Series B*, a Main Editor of *Acta Crystallographica Series E*, a member of the Editorial Boards of *High Pressure Research*, *J. Thermal Analysis and Calorimetry*, *Pharmacologia*. Was a Member of the Chemistry Expert Committee of the RFBR. Was a member of the Selection Committees for Ewald Prize, Perutz Prize, Bertaut Prize. Was a member of the IUCr Commissions on High Pressure and on Teaching, and of a SIG "Intermolecular interactions and crystal chemistry". From 2008 till 2014 was an elected member of the Executive Committee of the International Union of Crystallographers. A Member of the Advisory Council on Science of the Russian Ministry of Science and Education (2014-2017). A Member of the Advisory Council on Science and Education of the President of Russian Federation (2012-2014).

Boldyreva has received many national and international awards, including the Award from the European Society for Applied Physical Chemistry for the year 2007 for profound studies of the structure and reactivity of organic and inorganic solids, with special emphasis on applications in pharmaceutical industry. In 2017 she has been elected an Honorary Doctor of Sciences of the University of Edinburgh and a Corresponding Member of the Slovenian Academy of Sciences and Arts.

Boldyreva is a lecturer at the Novosibirsk State University. She has also given many invited courses abroad. She was several times a lecturer of the International Schools of Crystallography in Erice. Has organized several International Advanced Study Workshops and Seminars in Russia and abroad, the most recent one - "Frontiers of Crystallography" in Novosibirsk in October, 2013 (65 young participants from Russia, Europe, Japan, Canada, Africa and 15 foreign lecturers) and a Russia –UK Workshop "Molecular materials: from fundamentals to applications" in Novosibirsk in February 2015 (40 young participants from Russia and UK). She has been invited to lecture at International Workshops organized for representatives from pharmaceutical industry and many International Advanced Study Institutes and Schools in the fields of Crystallography, Solid state Chemistry, Physical Chemistry, Crystal Growth and Characterization, Materials Science. . Supervised over 20 Master and 12 PhD students, co-supervised 6 Master students from Edinburgh. Among her PhD students in Novosibirsk at the present time there are a Canadian and an Italian.