



**Vasily Andreevich STEPANOV**  
**(1917-1985)**

On 8 October, 2017, a hundred years have passed since the outstanding scientist in the field of studying physical-mechanical properties of materials, Doctor of Technical Sciences, Professor Stepanov V.A. was born in the Nemolovo village that was the part of Luga district (uezd) of Petrograd province (guberniya). After finishing a secondary school, he went to Leningrad Industrial Institute (now Peter the Great St. Petersburg Polytechnic University) in 1933 and graduated summa cum laude in 1939; his specialty having been Physical Metallurgy. From 1939 to 1946 V.A. Stepanov worked at the Industrial laboratory of Leningrad Metallic Plant, at first as an engineer and since 1944 as the Head of laboratory. In July, 1943 he was awarded the medal "For defense of Leningrad".

In 1946 V.A. Stepanov was invited by Academician N.N. Davidenkov to A.F. Ioffe Physico-Technical Institute of the Academy of Sciences of the U.S.S.R. Here for more than 45 years V.A. Stepanov worked at the laboratory "Dynamics of Strength of Materials", being in the last few decades the Laboratory Head. In addition to intensive research activity, teaching was an important part of Stepanov's life. Almost 20 years he was in parallel simultaneously the Head of Department of Metal Physics at Leningrad Polytechnical Institute. He lectured original courses on physical strength of materials. As a result of his activity both in scientific and

educational field, a lot of his disciples have become PhD, Doctors of Sciences, Professors; now they are working with success in science, industry and education.

His great achievements refer to the area of exploration known as “High-Velocity Impact Phenomena”. This subject matter is of paramount importance for both fundamental science and technical, including military, applications.

In addition to those investigations, V.A. Stepanov made an important contribution to the new approach for a fundamental understanding of strength of materials. The approach which is known as “Kinetic Concept of Strength”, considers strength, time and temperature as inextricably connected values.

Of special note is his role in the development of computer simulations (and especially molecular dynamics) investigations in the Soviet Union. It should be remembered that molecular dynamics was born in 1956 in the U.S.A. In the middle of seventies the number of molecular-dynamics results became so large that the First International Conference on Computer Simulations Applied to Materials took place in the U.S.A. in 1976. At that time the number of molecular-dynamics researchers in the Soviet Union did not exceed two dozens. It was connected with the lack of computers as well as with the lack of understanding from the majority of old generation scientists. Fortunately, V.A. Stepanov belonged to the innovative minority which understood the importance of this new direction of science. With his help, in March, 1976, All-Union Seminar on Computer Simulations of Radiation and Other Defects was established on the basis of Department of Metal Physics (Leningrad Polytechnic Institute) and A.F. Ioffe Physico-Technical Institute of Academy of Sciences of the U.S.S.R.

It should be emphasized that the International Workshop on New Approaches to High-Tech: Nano-Design, Technology, Computer Simulations is a direct successor of the above mentioned Seminar. The articles on the properties of materials in this issue of Materials Physics and Mechanics Journal are dedicated to the memory of V.A. Stepanov.

He was a cheerful person. He played tennis, liked skiing. Once with his friends he went on a many-days bicycle tour from Leningrad to Crimea. There is no doubt that V.A. Stepanov was a splendid, sincere, decent, and noble person with a great sense of responsibility for any problem he dealt with. He was a very hard-working person with high standards for himself as well as for his colleagues. We will hold Vasilij Andreevich Stepanov as an eminent person, scientist, and teacher in our hearts forever.



**Colleagues and Disciples**