The proposed research project is about the development and verification of methodology for non-destructive, X-ray study of crystalline materials, characterized by a heterogeneous structure or a high degree of ordering of microscopic grains constructing up these materials. That are often a circumstances unfavorable for the currently applied techniques of X-ray diffraction measurements, that can be used to determine the magnitude of the internal stress of substances, whose inadequate level may be the cause of accidents in the operation of specific machines or structures.

The proposed project is a study of methodological approach and, as such, is a basic research. The great advantage of suggested methodology and the main reason to justify taking the proposed research, will be able to track complex relationships between the structure of the substance, its microscopic arrangement and state of rearrangement and internal stresses state, which was not previously possible using laboratory X-ray sources. This will open new research perspectives that may find use in many laboratories in the country and the world.