**№1** Until February 24, I lived in Ukraine in the city of Kharkov. I work in National Science Center “Kharkov Institute of Physics and Technology”. Science center consists of several institutes that are part of the science complex. Now many buildings of the Science Center have been destroyed by Russian troops.

**№2** Our institute has an accelerator similar to AN2000 in LNL. The accelerator is part of the analytical complex. It consists of an accelerator of positively charged ions and lines (channels) with experimental devices. Above is a general view, below left is a diagram. The main characteristics of the accelerator are the maximum accelerating voltage is 1.8 megavolts, the beam current is up to 20 μA. Accelerated particles are: protons, deuterons, helium ions. Channels (from left to right) are: first - for studies in a small measuring vacuum chamber, second - for studies with a beam extracted into the atmosphere, next - for irradiating objects with accelerated ions, next - for studies in a large vacuum chamber, last - a channel with a microbeam. Measurement channels use next methods: PIXE, PIGE, RBS. Below right is a diagram of a channel with the output of a beam of accelerated ions from vacuum to the atmosphere through a thin foil. I took part in the creation of this channel. Large objects are examined on this channel, for example, non-destructive testing of finished products is carried out. It also explores objects that cannot be placed in a vacuum. New materials are being developed at our institute. When developing new materials, analytical support is required.

**№3** Next, I would like to present examples of studies materials using a proton beam extracted into the atmosphere. This Image shows the measurement process and the result of Distribution of Burnable absorber Gd along the radius of the template from a steel ingot. This alloy is used in nuclear reactors. Ukraine now has fifteen reactors at nuclear power plants.

**№4** In this Image show the results of the study Distribution of Zr in Oxide Dispersion-Strengthened steel on Part of the outer surface and on Cross section of the ingot. These new alloys have high strength at high temperatures. It is assumed that they will be used in nuclear reactors.

**№5** We used extracted to atmosphere beam for determination of the content of toxic elements in tree rings. It was found that the content of lead, mercury, cadmium increases with each new year.

**№6** This Image shows usage external beam for checking the composition of jewelry materials. The composition of rings made of white gold and yellow gold was checked. As you probably know, white gold alloy has a higher strength compared to yellow gold alloy. Below you see the PIXE spectra. The red line is the spectrum of yellow gold. This alloy contains copper in addition to gold. The blue line is the spectrum of white gold. Nickel and zinc are additionally present in this alloy. Checking the composition is non-destructive and express.

I hope, my short report has demonstrated to you the wide possibilities of the PIXE method and, especially, when it is used with an accelerated ions beam extracted into the atmosphere.