

In 2002, physicists of the Meson Physics Laboratory were involved in experiments carried out by the A2-collaboration at the beam of tagged photons of the electron microtron MAMI in Mainz (Germany). Since it was planned to use in these experiments the photon spectrometer Crystal Ball transported from the Brookhaven National Laboratory (USA), many of physicists participated earlier in the Crystal Ball collaboration have become now a part of the A2-collaboration. In particular, the repeated assembling of the Crystal Ball in Mainz was made by people from the Meson Physics Laboratory who were members of the Crystal Ball collaboration before 2002. Now the Crystal Ball is a main photon detector used in experiments of the A2-collaboration. Besides, for providing the reliable registration of photons and charged particles emitted from the Crystal Ball target at small angles the additional spectrometer TAPS was placed just behind the Crystal Ball. The TAPS is a “wall” consisting of 120 crystals BaF_2 and having a hole along the beam line for free passing the incident photons through it.

The program of experiments carrying out by the A2-collaboration involves the investigation of photoproduction of neutral mesons on nucleons and nuclei, the measurements of the magnetic dipole moment of the $\Delta^+(1232)$ resonance, the study of rare and forbidden decays of η meson *etc.* At the first stage, experiments were carried out at the microtron MAMI-B at the electron energy of 850 MeV. During years 2005–2006, the upgrade of the microtron was completed (now it is called as MAMI-C), it resulted in increasing the electron energy up to 1500 MeV. Simultaneously with the upgrade of the accelerator, the tagging system was improved. Firstly, owing to manufacturing and installing new pole-tips a gap of magnet was decreased allowing to raise a value of magnetic field from 1 T to 1.79 T; this provided deflecting in this field electrons (having lost a part of their energy due to emitting the bremsstrahlung photons) with energies from 100 to 1500 MeV. Secondly, there were produced 370 new scintillation counters for detecting electrons which were deflected in the magnetic field from their initial direction. Scintillators for these counters were manufactured at PNPI, and PNPI scientists participated in assembling and tuning these counters.

In 2006, after the upgrade of the accelerator MAMI and of the tagging system was completed, first physics measurements started. The Meson Physics Laboratory take part in carrying out experiments at the beam of tagged photons and in processing and analysis of data obtained.