The aim of the project is to enable the Polish scientists from IFJ PAN in Kraków and HIL of the Warsaw University to conduct the research on the structure of exotic nuclides produced in nuclear reactions with the use of ion beams available at GANIL. Thanks to the reach choice of ion beams with the highest currently available intensities and the combination of the most advanced detectors of the nuclear radiation, GANIL offers one of the best research infrastructures in the world to study the nuclear structure by means of gamma and particle spectroscopy.

To date, the GANIL Program Advisory Committee awarded a beam time to execute five research projects, selected from many other competing international programs, with the leading participation of the groups from IFJ PAN and HIL. Thanks to the use of the new research facilities at GANIL, which increase several times the sensitivity of gamma spectroscopy measurements, these experiments will deal with the most intriguing problems of the nuclear structure unsolved so far. In result the Polish physicists expect to make a contribution to understanding of the dynamics of the formation and stabilization of the superdeformed nuclear shape in very excited nuclei at high spin. Will gain new insight into the nature of the nucleon-nucleon interaction through pioneering studies of such phenomena as the 3-body force and clusterization of nucleons in light nuclei or the occurrence of the strong isoscalar proton-neutron coupling expected in the magic, most proton-rich (N=Z) nuclei.

These experiments will profit from the usage of the most advanced nuclear radiation detection systems: the low and high-energy gamma ray spectrometers- AGATA and PARIS and NEDA — the neutron detector array. All these instruments are constructed with the use of forefront technologies by the large international collaborations, with a strong and long-standing involvement of the Polish groups.

Cooperation of the Polish nuclear physicists with GANIL, except of giving them the access to this large experimental infrastructure, will also help to maintain in Poland a high level of competence in the field of nuclear radiation detection techniques. This will result in the application of the newest methods in the research conducted in the Polish laboratories: IFJ PAN in Krakow and HIL in Warsaw, as well as in the teaching of experimental nuclear physics conducted by these centers.