



# The Ministry of Communications and High Technologies of the Republic of Azerbaijan

## National Nuclear Research Center Trends and Activities

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Center**

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# National Nuclear Research Center of the Ministry of Communications and High Technologies.

On May 08, 2014 the President of the Republic of Azerbaijan Mr. Ilham Aliyev has issued the decree No.442 – With the purpose of development of nuclear science, nuclear and radiation technologies, scientific-technical basis and human resource development to establish under the Ministry of Communications and High Technologies of the Republic of Azerbaijan “National Nuclear Research Center” Closed Stock Corporation.



# National Nuclear Research Center (NNRC)

## Trends and Activities

- Development and provision of use of nuclear technologies in peaceful purposes taking into account modern requirements and national interests;
- Widening researches in nuclear sciences and technologies including detection of actual scientific and scientific-technological trends taking into account the interests of Azerbaijan Republic and carrying out fundamental and practical investigations on these trends;
- Improving material and technical basis in the field of nuclear technologies including nuclear research reactor; establishment and development of scientific-experimental as well as technical basis of NNRC in accordance with national and international norms and standards;
- Reinforcement of high qualified staff members in the area of nuclear science and technologies; education and professional development of the staff member in accordance with the trends and activities of NNRC;
- Implementation of cooperation with corresponding institutions of foreign countries, IAEA and other international organizations in accordance with trends and activities of NNRC ;



# National Nuclear Research Center (NNRC)

## Trends and Activities

- Participation in global scientific and scientific-technical programmes, experiments and researches carrying out by CERN and other international scientific Centers in such areas as nuclear technologies, nuclear sciences' including high energy physics;
- Search and potential evaluation of raw nuclear resources at the territory of the Republic of Azerbaijan;
- Widening possibilities of “Gamma sterilization complex” and radiation processing on materials are used in medicine, agriculture, industry and other fields;
- Participation in implementation projects and state programmes on nuclear and radiation safety on the territory of Azerbaijan, preparation of the proposal on use of nuclear energy and providing scientific-methodological support for actions in these fields

# National Nuclear Research Center (NNRC)

## Trends and Activities



# National Nuclear Research Center



# Gamma Sterilization Complex of NNRC



# Research Laboratories of NNRC



New materials and devices are manufactured by NNRC





# NNRC Laboratories



Alpha spectrometry



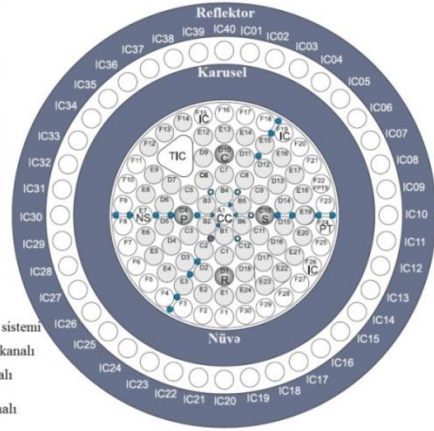
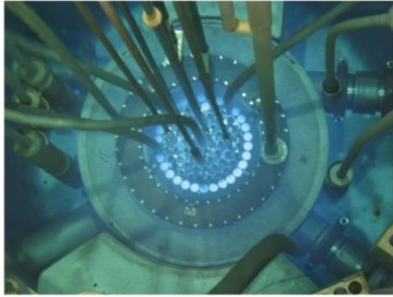
Equipment for research of thermal effects and materials stability



HPGe gamma spectrometry



# Radiation material science and radiation nano-technology in NNRC



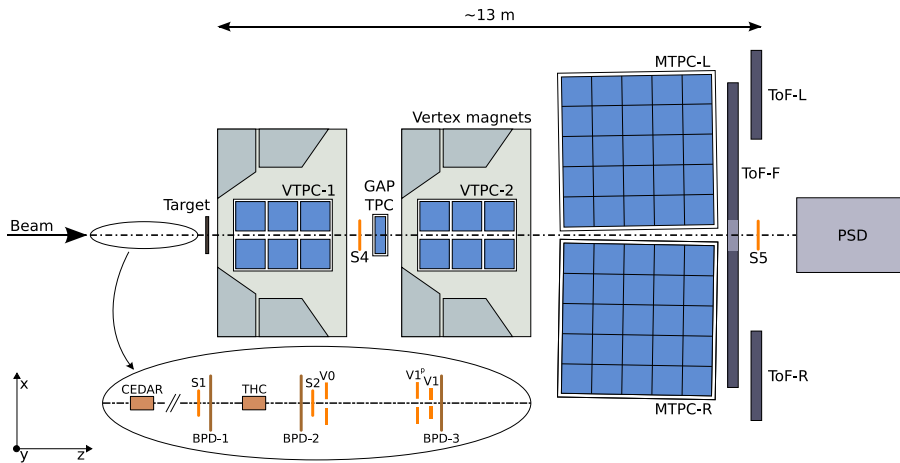
Experiments in the field of radiation nano-technology and radiation material science were conducted in nuclear research reactor TRIGA Mark II TNR. (Sloveniya J.Stefan TNR),



# Activities in the field of high energy physics and nuclear collisions

NA61/SHINE at the CERN SPS

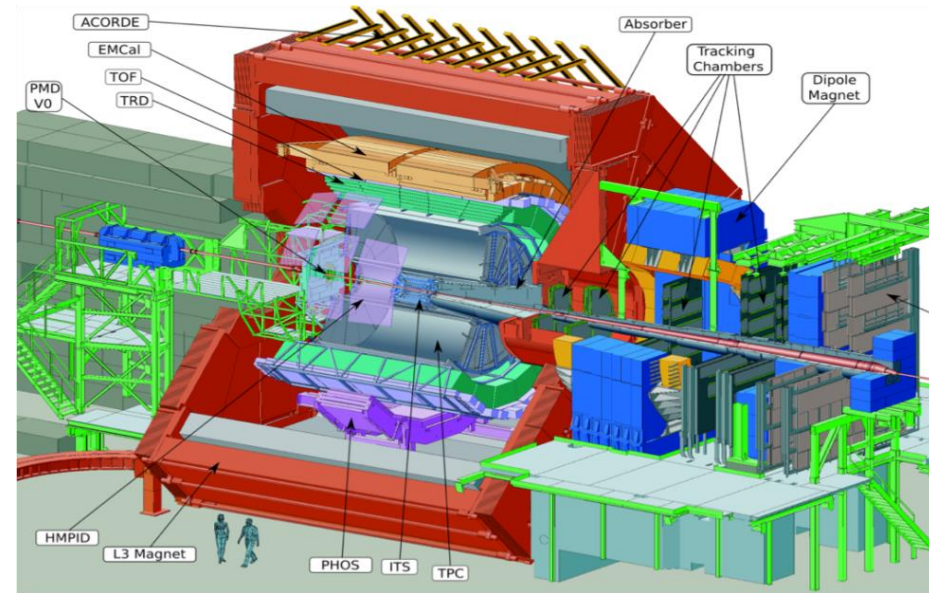
SPS Heavy Ion and Neutrino Experiment



NNRC participates in NA61 experiment  
from January 2015

ALICE at the CERN LHC

A Large Ion Collider Experiment



NNRC participates in ALICE experiment  
from December 2015



# Formation Human Resources in NNRC

Universities of Azerbaijan did not directly educate the students in nuclear sciences, nuclear and radiation technologies. However, Ministry of Education has included from 2016 two new specialties for students in Baku State University, namely “Radiation material science” and “Nuclear and reactor physics”.

- After Presidential decree No.442 NNRC has selected young staff members and send those persons to special education courses on physics, chemistry and engineering.
- These special education courses are conducted firstly by the specialists from NNRC, Azerbaijan National Academy of Sciences and Baku State University.
- After that on the basis of international agreements those young specialists are trained in Dubna, CERN and IAEA.
- NNRC uses also bilateral relations for young scientists training in corresponding institutions of such nuclear countries as France (AREVA), Austria, Ukraine, South Korea, Italy, Norway, Turkey and Russia.

# Activities related to the implementation of a new research reactor in the Republic of Azerbaijan

NNRC conducts joint activities with IAEA TC Department within the framework of AZB1002 national project “Conducting preparatory works for establishing a new research reactor in Azerbaijan”. This project is for 2016 – 2017.

Scientific visits and fellowships will be conducted with IAEA assistance in such famous nuclear countries as South Korea, France, Austria, Russia and Turkey. The main purpose of these visits and fellowships is to be familiar in deeps with research reactors utilizations and applications.

- First version of strategic plan for Azerbaijani research reactor has been prepared with assistance of AREVA and IAEA experts.
- First version of technical specification for research reactor has been prepared.
- Site selection for research reactor has been done, geological survey of this site has been conducted.

NNRC works in close cooperation with IAEA, Dubna and other nuclear institutions on education and training of young specialists for research reactor.

Eight young specialists from NNRC continue their education and training in Dubna on IBR2M reactor. Our specialists work in such direction as nuclear reactors, neutron physics, theoretical and practical experiments dealing with nuclear collisions, managing research reactor, radioisotope production, neutron activation analysis, experiments on nuclear physics.

Ten specialists from NNRC conducts joint scientific researches at research reactors located in different nuclear institutions of Norway, Slovenia and etc.

# The staff of the NNRC on the project "Conducting a Feasibility Study for Planning and Establishing a Research Reactor (AZB/4/002)"



2009



Ph.D Farid Ahmadov

2010



Ph.D Jalal Naghiyev

2012



Ph.D Elchin Huseynov



Ph.D Lachin Taibov



Ph.D Gadir Ahmadov

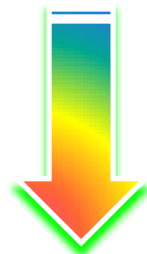


Ph.D student Tural Safarov



Ph.D student Sabina Maharramova

# The staff of the NNRC on the project “Conducting Preparatory Work for Establishing a New Research Reactor (AZB1002)”



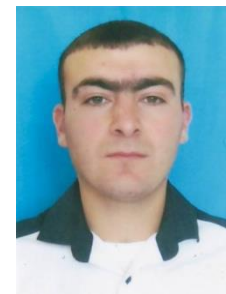
2016



Ph.D student Sahil Valiyev



Ph.D student Elçin Abdullayev



Ph.D student Ramin Mammadov

*Thank you for your attention*

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