

Laboratory of Research and Modeling of Quantum Phenomena

Based on scientific-thematic groups in the Chair of General Physics and Astrophysics at Faculty of Physics of Yerevan State University, in 2010 a Laboratory of Research and Modeling of Quantum Phenomena was created, which until 2016 was headed by academician, professor David Sedrakyan.

The current head of the laboratory is professor, Atom Muradyan.

Scientific groups have been formed in the laboratory, which do research in the following areas:

•Research Group of Neutron Stars and Pulsars:

Scientific Supervisor, Academician of NAS RA, Professor David Sedrakyan, Chief Researcher,

Senior Researcher Mekhak Hayrapetyan,

Junior Researcher Arus Harutunyan.

•Research Group of Quantum Optics and Quantum Tunneling:

Scientific Supervisor, Leading Researcher, Professor Atom Muradyan,

Senior Researcher David Badalyan,

Senior Researcher Gevorg Muradyan.

•Experimental Physics Group of Membranes Enriched with Nano-crystals,

Scientific Leader, Associate Professor Petik Petrosyan,

Researcher Lyova Grigoryan.

The main research areas are as follows: *superconductive and ultraviolet models of Neutron Stars; magnetic fields and Gravitation Wave generation mechanisms; *light pulse atomic interferometer; *quantum optical resonators; *quantum tunneling of structural particles and multidimensional potentials; *optical properties of Silicate glass containing semiconductor nanocrystals; *controlled absorbent optical filters, sensors for the spatial distribution of the temperature field.

The Members of Laboratory collaborate with the researchers of following Scientific Centers and Universities:

- Byurakan Observatory (Armenia)
- Institute of Physical Researches of NAS RA (Armenia)
- Krasnoyarsk Institute of Physics of Siberian Branch of Russian Academy of Sciences (Russia)
- Heidelberg University's Quantum Optics Group (Germany)

- Stanford University Atomic Interferometers Group (USA)