

пользовать новые разработки физики и такого направления как «Живые машины». Наноробот делает возможным пациенту поддерживать связь со своим врачом, пользуясь повседневными мобильными устройствам. Врачи, получая данные пациента смогут своевременно изменять лечение. Осталось только преодолеть профессионализм консервативных врачей и запустить инновации в системе здравоохранения.

1. <http://vsehorosho.org/russian/eoc/eoc.html>
2. <http://e-drexler.com/d/06/00/Nanosystems/toc.html>

DESIGN OF LABORATORY STAND FOR STUDYING PRINCIPLES OF COMPUTER TOMOGRAPHY

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Computerized tomography is a progressive trend in medical diagnostics. The method was developed by two scientists, Hounsfield and McCormack, who designed the first CT scan in 1979, for which they subsequently won the Nobel Prize [1]. Since that time, the method proved to be very popular, as it allows one to explore the organs and their functions and receive unique diagnostic data, in comparison with classical tomography, ultrasound scan and X-ray radiography. The use of CT allows us to reach a new level of biological objects research [2]. Modern CT scanner is a complex system consisting of many components, the maintenance of which requires specialist who is knowledgeable in the technical component of the device and the biological effects of this method. The training of specialists with these skills requires special teaching courses and laboratory equipment, giving an idea of operation principle of such sophisticated diagnostic devices.

We made a detailed analysis of X-ray CT, the prototype for the development of the laboratory stand. There was created a block diagram of the laboratory stand, a 3D model in a specialized software package and systems of sample rotation and recording the emission of radiation. Finally, we produced the prototype of laboratory stand (Fig.1).

The system of radiation and system of emitter and receiver rotation have undergone considerable change. There were applied a semiconductor laser as a system of scanning radiation. This was done, firstly, for safety reasons, secondly, the laser is not required the high voltage power supply circuit, unlike X-ray tube, and thirdly, the cost of the laser is many times smaller than the one of the X-ray tube.

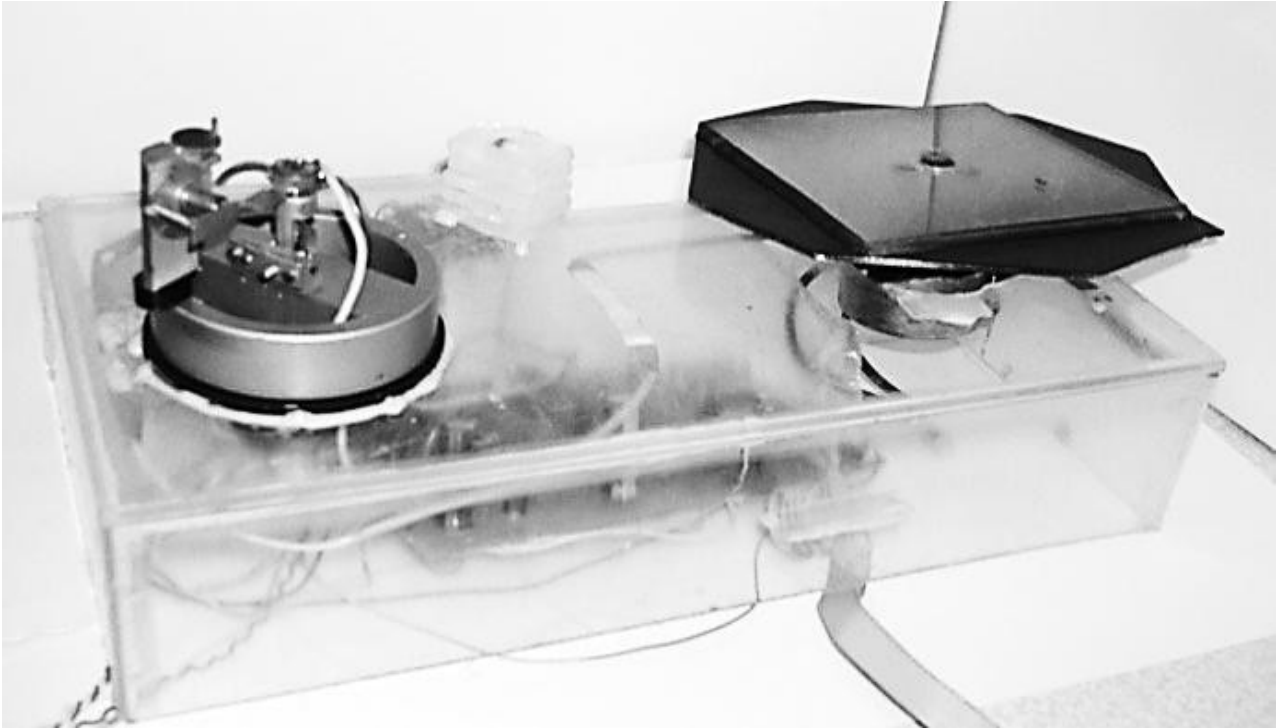


Fig.1. Exterior view of laboratory stand

1. Rozenstrauh L.S., Invisible became visible (successes and challenges of beam diagnostics), Znaniya (1987).
2. Uebb S., Physics of imaging in medicine: In 2 volumes. Vol.1, Mir (1991).