**Proposed topic of the PhD thesis**: Computer modeling of drug carriers with the structure of dendrimers with a carbon core and branches of telomeric DNA fragments.

**Keywords**: drug carriers , molecular dynamics, carbon nanotubes, fullerenes, telomeres, DNA, i-motif, G-quadruplex, free energy

Aim of the project: Drug carriers with a dendrimer structure are an important part of this technology. Typical representatives of this type of syst ems are PAMAM dendrimers, the operating principle of which is based on the phenomenon of swelling and structure shrinkage depending on the pH of the environment. The aim of the research will be analyzing, at the molecular level, of system s with a similar structure but using a core made of short fragment s of carbon nanotube s or fullerenes and telomeric fragments of DNA as a dendrimer branches. The expected result of using such a structure will be an increase in the carrier capacity, an increase in mechanical strength and an increase in sensitivity to the triggering factor, i.e. the pH of solution . Various types of anti-cancer drugs will be tested, mainly in terms of changes in the free energy of binding with the carrier.