Multidisciplinary research on the National Institute of Science and Technology on Complex Fluids: human LDL and HDL

Antonio Martins Figueiredo Neto
Instituto de Física, Universidade de São Paulo

The National Institute of Science and Technology Complex Fluids (INCT-FCX) has the mission of bringing together professionals from the fields of physics (including biophysics), chemistry (including biochemistry), biology, immunology, medicine, dentistry and math around problems that require a multidisciplinary approach. The FCX has INCT-research, teaching and extension. The research activities are aimed at generating knowledge in frontier areas of the project, maintaining the characteristic multidisciplinary approach. In the education sector, the Institute conducts regular schools and foster the development of undergraduate courses and postgraduate teaching and research institutions. In extension, the Institute works with the Brazilian school, teaching courses for teachers in the area of the structure of matter, new materials (liquid crystals, ferrofluids), water and biological fluids. We chose three major families of complex fluids as object of study due to its fundamental characteristics that allow integration of different specialties in their approach: liquid crystals, magnetic colloids, and biological fluids of interest (in particular lipoproteins). In this particular family, we focus on lipids and proteins, including their interactions, structures and functions. In this talk we will present the INCT and one of the main subjects of research developed, the study of human lipoproteins. Aspects concerning the activities of the INCT with high school teachers and exhibitions in public places will also be addressed.