Robert Holyst (research group http://soft.ichf.edu.pl/Dep3.html) seeks candidates for the following positions:

- **Ph.D. students** net salary ~ 800 Euro (3000 PLN) + social and health insurance.

for research within the following NCN Symfonia project (2014-2017):

**Towards quantitative biology via novel method of mobility measurement in the intracellular compartment: interactions of proteins with intracellular structures of glycogen and mitochondria**

How different is aqueous environment from the intracellular fluids? In the living cell thousands of different biomolecules are concentrated in the volume of several picoliters and even though proteins are often present at low concentration, they occupy large volume and form a crowded environment. One of the properties of such crowded environment is that diffusion is governed by different rules and should be described with the help of viscosity which depends on the size of the diffusing object. Important biochemical parameters characterizing cellular processes are usually determined *in vitro*, whereas reports about quantitative analysis of *in vivo* interactions are rare. We plan to develop a new method for detection and quantification of molecular interactions *in vivo* based on the method of fluorescence correlation spectroscopy coupled with the detailed knowledge on the scale-dependent nanoviscosity in living cells. (see e.g. T.Kalwarczyk et al Nano Letters (2011); T.Kalwarczyk et al Bioinformatics (2012); M.Tabaka et al Soft Matter (2013). See also [http://www.sciencedaily.com/releases/2013/01/130131095222.htm](http://www.sciencedaily.com/releases/2013/01/130131095222.htm)

**Requirements**

- Ph.D. Students: Masters degree in Science (preferably in biophysics, biochemistry or molecular biology) obtained in 2013 or (in spe in 2014).
- The most important requirement for the position is **outstanding motivation and open mind for interdisciplinary research at the border of biology-chemistry-physics.**
- Working knowledge of fluorescence correlation spectroscopy (FCS), FRAP, molecular biology assays, cultivation of mammalian cells is an asset.

**Questions and Applications** (including a motivation statement, name and e-mail of recommending person and CV with list of publications) should be addressed to Robert Holyst, and sent by email to: robert.holyst@gmail.com before 30th October 2013.