Magnetic behavior and phase stability in discotic benzo[*e*][1,2,4]triazinyl derivatives

Paramagnetic liquid crystalline (LC) materials are of fundamental scientific interest and also in the context of modern molecular electronic and magnetic devices (e.g. spintronics) and energy harvesting (photovoltaics). A particularly desired aspect of organic radicals is molecular organization in fluid phases and control spin-spin interactions in such liquid crystalline materials. The proposed Project deals with a novel class of liquid crystalline discotic materials based on stable benzo[*e*][1,2,4]triazinyl radical **I**. The main goal of the Project is the synthesis and detailed physico-chemical characterization, particularly in-depth analysis of structure–property (liquid crystalline, magnetic, photoconductivity) relationships. The expected results will significantly expand general knowledge in organic chemistry and material science, and will result in materials of general scientific interest and potential implication in modern technologies.

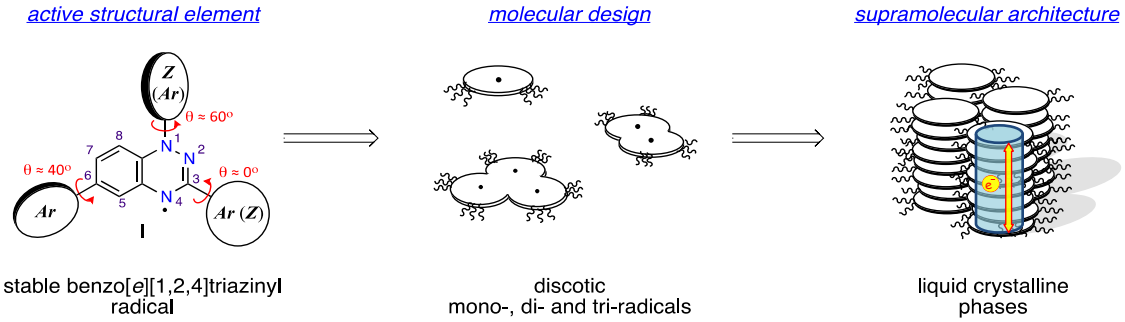

Figure 1. Designed self-organized semiconductive materials and proposed electron transport in discotic liquid crystalline phases derived from benzo[*e*][1,2,4]triazinyl **I**.