

Project 2.6 Design of organic memristors

Supervisor: Cina Foroutan-Nejad

Institute: of Organic Chemistry

Unit: Xc

www: <https://www.icho.edu.pl/en/zespol/daniel-gryko-research/cina-foroutan-nejad-research/>

Background:

Chemistry, Physics, Material Sciences

Aim:

The goal of this project is to fine-tune the structures of several families of organic molecules that have potential application as molecular memristors. Memristors are circuit elements whose conductivity at a time is a function of the history of current passed through them in the past. The spirit of this work is close to this work (<https://pubs.acs.org/doi/abs/10.1021/jacs.9b07215>) but the target molecules are simple and can be synthesized in an organic lab. The candidate will work closely with the experimental organic chemists and solid-state physicists in a dynamic environment.

Requirements:

- I am seeking for a motivated, independent thinking student with strong background in organic chemistry and basic knowledge in computational chemistry,
- the candidate must be familiar with commercial software packages and able to work in UNIX environment,
- any programming skill is a plus.