

A typical organic molecule contains an even number of electrons. These electrons are paired, which means that their magnetic moments cancel out. However, in some rare cases, the pairing of electrons may be incomplete, producing compounds known as diradicaloids. Molecules with unpaired electrons, also called “open-shell”, are of great scientific interest, because of their magnetic properties, deep colors, and unusual reactivity. Additionally, they may be used as materials for new electronic devices, or may produce color changes when heated or stimulated with electric current.

In this project we look for new open-shell compounds which will have superior stability towards ambient conditions, or will undergo reversible reactions producing adaptable materials with complex structures. We will design new structures and synthesize them, to investigate their properties and reactivity.

