Bioorganic Chemistry of Rigid-Rod Molecules

Stefan Matile
University of Geneva, Department of Organic Chemistry, Geneva, Switzerland

Recent studies on the usefulness of rigid-rod molecules in bioorganic chemistry will be summarized. Emphasis will be on *p*-oligophenyl β-barrels, synthetic barrel-stave supramolecules conceived to exploit the functional plasticity of their biological counterparts in organic chemistry and beyond. Highlights may include chemical processes (molecular recognition, translocation, and transformation) that take place within the confined, oriented space of synthetic multifunctional pores, the recognition of polarized membranes involved in antibiotic resistance, electrostatic steering in catalysis, as well as more practical applications like non-invasive enzyme sensing with pores.