# Multifunctional Porous Organic Polymers

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**Abstract**:
A material possessing varied properties and pertinent for different kind of applications captures the attention of scientific community for technological as well as fundamental research point of view. The exquisite control over the assembly of the building blocks and thorough understanding of the structure-property relationship hold the key to the realization of a multifunctional material. In this regard, porous materials have been investigated for decades for their widespread technological applications in gas storage, gas separation and in heterogeneous catalysis. Porous materials with inorganic scaffolds, like zeolites and especially metal organic frameworks (MOFs) with very high surface areas have been investigated extensively for quite some time. On the other hand, porous organic materials like porous organic polymers (POPs) have emerged as an important theme in current research.[1] The thrust on purely organic based porous materials is due to their superior chemical, thermal and hydrothermal stabilities arising due to the covalent bonds. Additionally, synthetic flexibility and light weight (comprised of light elements, e.g., C, H, O, N, B, etc.) are added advantages of POPs. Recently, the combination of π-electron conjugation as well as microporosity leads to the developments of conjugated porous organic polymers (CPOPs) as a new class of materials. CPOPs exhibit diverse applications ranging from selective gas adsorption, catalysis, water purification to optoelectronic applications like sensing, light harvesting and energy storage (Fig. 1). A brief appraisal of challenges involved in the field of CPOPs and promising applications of recently developed tetraphenylcyclopentadiene and BODIPY based CPOPs will be presented.[2-5]

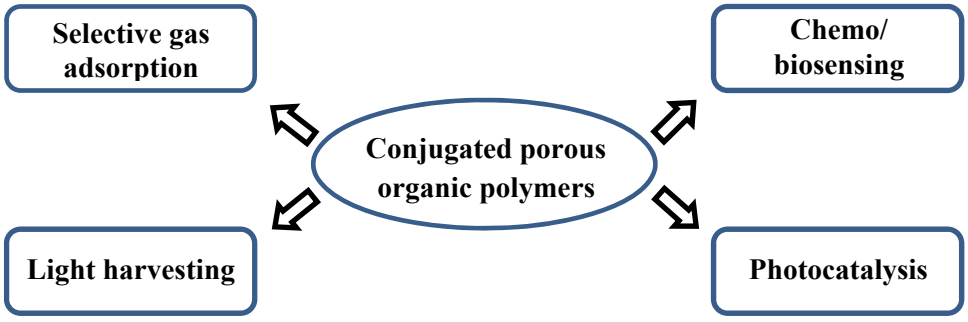


**Figure 1:** Schematic illustration of multifunctional applications of CPOPs.

**References and Notes:**

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