Title:	Design, Synthesis and Characterization of Hydrazone-based Covalent Organic Framework
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Abstract:	Covalent Organic Frameworks (COFs) are a kind of new growing crystalline porous polymers that are building with the mixing up lighter elements (for example, B, C, N, O, and Si) via strong covalent bonds (e.g., B-O, C-N, C=N, and C=C-N double connections). Unlike other organic polymers, they show crystallinity and periodic pores. They have received much attention in the field of a porous material due to their attractive structural properties (e.g., adjustable porosity, total organic structure, large surface area, structural versatility, high chemical stability, and high modularity). It shows exciting applications like adsorption, gas storage, catalysis, sensing, optoelectric, separation, and drug delivery. The motive of the study is to synthesize a hydrazone-based covalent organic framework (COF). A crystalline hydrazone linked Bth-Tp-COF has been designed and synthesized successfully with the Schiff-based reaction joining the monomer of triformylphloroglucinol (Tp) and Benzene 1,3,5-tricarbohydrazide (Bth) under solvothermal condition. The designed COF has a functional chelating site that can be used as a host-guest sensing application or catalysis chemistry. The first chapter of the thesis deals with a brief introduction of COFs, design, and their applications. The second chapter contains the synthetic schemes and the experimental procedures, and basic characterizations of Bth-Tp-COF.
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