

**Bio-waste corn-cob cellulose supported poly(hydroxamic acid) copper complex for Huisgen reaction:
Waste to wealth approach**

Abstract

Corn-cob cellulose supported poly(hydroxamic acid) Cu(II) complex was prepared by the surface modification of waste corn-cob cellulose through graft copolymerization and subsequent hydroximation. The complex was characterized by IR, UV, FESEM, TEM, XPS, EDX and ICP-AES analyses. The complex has been found to be an efficient catalyst for 1,3-dipolar Huisgen cycloaddition (CuAAC) of aryl/alkyl azides with a variety of alkynes as well as one-pot three-components reaction in the presence of sodium ascorbate to give the corresponding cycloaddition products in up to 96% yield and high turn over number (TON 18,600) and turn over frequency (TOF 930 h⁻¹) were achieved. The complex was easy to recover from the reaction mixture and reused six times without significant loss of its catalytic activity.