
Novelty of the work

- Microwave technique was introduced for the first time to synthesize copper substituted phosphotungstates, the scope for which can be extended to other POM based materials
- Designing of different Cu-POM based materials was successfully accomplished and further modifications of different types, viz., supporting as well as functionalization was also achieved.
- The entire catalytic evaluation study was carried out under solvent-free conditions, using TBHP alone, as a green oxidant. Further, we were able to develop a flexible oxidation system, in which the major product could be selected based on the choice of the chemist.
- We were successful in inducing chirality in POM, which can open doors for the synthesis of hybrid, chiral 4th generation catalysts, especially for asymmetric oxidation.

