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Preparation of cellulose modified with metallophthalocyanines as a new biocompatible catalytic system

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Heterogenized catalysts containing biocompatible supports green aspect of the procedure. Using cellulose as a support in the different catalytic reactions showed high activity of cellulose supported catalysts. Nowadays, many efforts have been accomplished on the improvement of efficient catalytic methods using Metallophthalocyanines (MPcs) as attractive oxidation catalysts. MPcs shows high activity, rather facile preparation in a large scale and chemical and thermal stability. In the present work, MPcs was immobilized on Microcrystalline Cellulose (MCC). The prepared nanocomposite revealed good catalytic activity for the oxidation of alcohols, ethylbenzene and styrene with high conversions. Furthermore, good selectivities have been observed during oxidation of alcohols to the corresponding aldehydes or ketones and also oxidation of ethylbenzene and styrene to acetophenone.

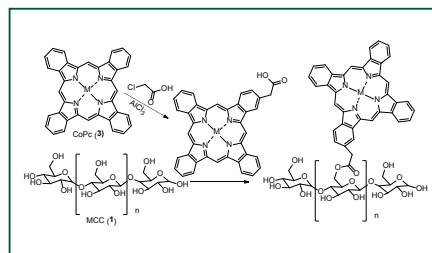


Figure-1: Preparation of catalyst.

References

1. Keshipour S and Adak K (2017) Magnetic d-penicillamine-functionalized cellulose as a new heterogeneous support for cobalt(II) in green oxidation of ethylbenzene to acetophenone. *Applied Organometallic Chemistry*; DOI: 10.1002/aoc.3774.
2. Keshipour S and Khezerloo M (2017) Gold nanoparticles supported on cellulose aerogel as a new efficient catalyst for epoxidation of styrene. *Journal of the Iranian Chemical Society*; 14:1107-1112.

Biography

Mozhdeh Seyyedhamzeh has obtained her PhD and focused on the synthesis of organic molecules and exploring fundamental chemical principles to aid the development of efficient synthetic methods. During her Postdoctoral research, she was interested in nano-catalysts and nano-technologies for green organic synthesis by using nanomaterials such as carbon nanotubes and grapheme. She is also interested in synthesis of nano-biocompatible catalysts which is based on cellulose.

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