

Course objectives

- To learn safety techniques while handling chemicals and glassware's.
- To get training on how to plan, execute single and multistep synthesis of organic small molecules.
- To purify and identify the products by physical and chromatographic methods.

Single and Two stage organic preparations, purification and characterization: Preparations of 1,2,3,4-tetrahydro carbazole, 7-hydroxy-4-methyl-coumarin, aspirin, adipic acid, Para red and Methyl red Preparations of p-bromo & p-nitroaniline from acetanilide, Ethyl resorcinol from Resorcinol, ϵ -Caprolactam from cyclohexanone, p-Aminobenzoic acid from p-nitrotoluidine, s-tribromo benzene from aniline, Benzylic acid from Benzoin, p- chlorotoluene from p-toluidine, 2,4-Dinitrophenylhydrazine from Chlorobenzene, m- Nitrobenzoic acid from methyl benzoate, 2,4-Dinitrophenol from Chlorobenzene, o-Aminobenzoic acid from Phthalic anhydride, hydantoin from benzyl, p-amino azobenzene from Aniline, thiazoles from acetophenones, pyrimidines from aldehydes/ketones and thiourea, eosin from resorcinol & phthalic anhydride, Indigo from anthranilic acid, methyl orange from aniline, 5-hydroxy-1,3-benzothiole from hydroquinone, Benzimidazole from urea, Benzocaine from p-nitrotoluene, Dibenzyl from benzil, Benzil from benzoin, Benzalacetophenone dibromide from acetophenone. Any other interesting experiments.

Course Outcome:

- Students gain the knowledge in single and two stage organic preparations, reaction monitoring using TLC, purification and its analytical characterisation.

References:

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4. Organic analytical chemistry, Theory and Practice-Jag Mohan, Narosa, 2003.
5. Practical organic chemistry by F.G. Mann & B.C. Saunders, 4th Edition, Longman, 1970.
6. Laboratory Manual of Organic Chemistry - Raj K Bansal, 2nd Edition, Wiley, 1990.
7. Systematic Lab Experiments in organic chemistry-Arun Sethi, New Age International, 2006.
8. Advanced Practical organic chemistry-Jag Mohan, Himalaya Publishing House, 1992.