

**Executive Summary of Minor Research Project
(UGC XI plan)**

entitled

**“Development of microwave methodologies for the synthesis of
biologically active compounds”**

(Wide Ref let no. 1. 47-775/09(WRO), Pune dated 13.8.2009)

The “Microwave chemistry “ is the current approach in Green Chemistry and used from kitchen to laboratory to date. It has come- up as a boon in disguise for the eco-friendly conscious chemistry. The microwave energy is utilized in rapid chemical transformations and often in the solid state without the use of the water. The microwave mediated organic reactions occur more fastly, safety and in environmentally friendly manner, with high yields. Such reactions reduce the amount of waste products and increase the pure required products.

The MW chemistry is now an integrated part of Green or Clean or Environmentally benign chemistry and thus, the future of Green chemistry is as broad as that of chemistry as whole.

we report herein a simple, rapid and environmentally friendly method for synthesis of different derivatives of Benzimidazole, Phthalimide, N-hydroxyphthalimide, Carbazolemonomers and dimers in better yields with higher purity under mild conditions. The present work includes solid state alkylation and acylation and dimerization of 2-Mercaptobenzimidazole using commercially available silica gel, alumina and fly ashes as a solid support. MBI was adsorbed on silica gel, alumina and fly ash using aqueous sodium hydroxide and irradiated with various alkyl halides, acid chlorides and α,ω -dibromoalkanes to give the desired products

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