

Report of the work done

i. Brief objective of the project

- To synthesize acidic ILs by one pot synthesis route.
- Characterization of a synthesized ILs using spectroscopic method.
- To synthesize Ionic Liquid functionalized Mesoporous materials.
- 3D structure of acidic ILs by single crystal X-ray diffraction method.
- Single crystals of optimum size are grown by different solution methods.
- In parallel the ab-initio MO energy calculations carried out using Gaussian 09 software to correlate theoretical and experimental results.
- To study the biological response of the said molecules.

ii. Work done so far and results achieved

a) Definition of the problem handled:

The present proposal mainly deals with the synthesis and 3D-structural characterization of acidic ILs by using single crystal X-ray diffractometer. All the acidic ILs will be also characterized by spectroscopic methods especially FTIR, NMR techniques and Mass spectrometry. These ILs shall be tested as a catalyst for various organic reactions. In order to check other possible applications of ILs, the full structural characterization is mandatory.

Non bonded intermolecular interactions like π - π , C- H... π , C- H...O in addition to nonconventional forces will be investigated to understand the role of these interactions in molecular structure and its function.

