List of Table:

Table 1.1: Types of colloids----------------------------------------------- 3
Table 1.2: Comparative inter-band transition of some metal-------------- 8
Table 3.1: Comparative values of moisture content for different AAILs.....63
Table 3.2: Comparative values of viscosity for different AAILs----------- 63
Table 3.3: Comparative values of conductance of AAILs------------------- 65
Table 3.4: Comparative values of thermal degradation of AA, TBPOH and their corresponding ILs-------------------------------------------- 69
Table 4.1: Changes in the reaction mixture (IL+ Au salt) with respect to colour and absorption--------------------------------------------- 82
Table 4.2 Comparative TGA of IL and Au nanoparticle+IL matrix--------- 83
Table 4.3: Comparative particle size of Au nanoparticle in different IL----- 87
Table 4.4: Changes in the reaction mixture (glycine IL+Ag metal salt) with respect to colour and absorption---------------------------------- 88
Table 4.5: Comparative TGA of IL and Ag nanoparticle+IL matrix--------- 90
Table 4.6: Comparative particle size of Ag nanoparticle in different IL------ 92
Table 4.7: Changes in the reaction mixture (glycine IL+Pt salt) with respect to colour and absorption---------------------------------------- 94
Table 4.8: Comparative TGA of IL and Pt nanoparticle+IL matrix--------- 95
Table 4.9: Comparative particle size of Pt nanoparticle in different IL------ 97
Table 4.10: Changes in the reaction mixture (glycine IL+metal salt) with respect to colour and absorption-------------------------------- 99
Table 4.11: Comparative TGA of IL and Pd nanoparticle+IL matrix--------- 100
Table 4.12: Comparative particle size of Pd nanoparticle in different IL----- 102
Table 4.13: Changes in the reaction mixture (TBPOH+metal salt) with respect to colour and absorption-------------------------------------- 106
Table 4.14: Comparative UV-vis and colour change for metal salt reduction in different IL----------------------------------------------- 113
Table 5.1: Comparative electrochemical parameter related to methanol oxidation using CNT and SiO$_2$ with Pt-------------------------------------------- 141