APPENDIX-II

IR, $^1$H NMR, $^{13}$C NMR and Mass Spectra of few selected compounds.

Figure A 2.1: FTIR spectrum of 2-[1-(Phenylhydrazono)ethyl]phenol (13)

Figure A 2.2: $^1$H NMR spectrum of 2-[1-(Phenylhydrazono)ethyl]phenol (13)
Figure A 2.3: FTIR spectrum of 2-[1-(2,4-Dinitrophenylhydrazono)ethyl]phenol (14)

Figure A 2.4: $^1$H NMR spectrum of 2-[1-(2,4-Dinitrophenylhydrazono)ethyl]phenol (14)
Figure A 2.5: FTIR spectrum of N-(sec-Butylidene)-N’-(2,4-dinitrophenyl)hydrazine (15)

Figure A 2.6: $^1$H NMR spectrum of N-(sec-Butylidene)-N’-(2,4-dinitrophenyl)hydrazine (15)
Figure A 2.7: FTIR spectrum of N-(2-Bromo-1-methylethylidene)-N'-(2,4-dinitrophenyl)hydrazine (16)

Figure A 2.8: $^1$H NMR spectrum of N-(2-Bromo-1-methylethylidene)-N'-(2,4-dinitrophenyl)hydrazine (16)
Figure A 2.9: FTIR spectrum of 2,3,4,9-Tetrahydro-1H-carbazole (20)

Figure A 2.10: $^1$H NMR spectrum of 2,3,4,9-Tetrahydro-1H-carbazole (20)
Figure A 2.11: FTIR spectrum of 2-(1H-Indol-2-yl)-phenol (21)

Figure A 2.12: $^1$H NMR spectrum of 2-(1H-Indol-2-yl)-phenol (21)
Figure A 2.13: FTIR spectrum of 2-Ethyl-1H-indole (22)

Figure A 2.14: $^1$H NMR spectrum of 2-Ethyl-1H-indole (22)
Figure A 2.15: FTIR spectrum of 2-(5,7-Dinitro-1H-indol-2-yl)-phenol (23)

Figure A 2.16: $^1$H NMR spectrum of 2-(5,7-Dinitro-1H-indol-2-yl)-phenol (23)
Figure A 2.17: FTIR spectrum of 2-Ethyl-5,7-dinitro-1H-indole (24)

Figure A 2.18: $^1$H NMR spectrum of 2-Ethyl-5,7-dinitro-1H-indole (24)
Figure A 2.19: FTIR spectrum of 2-Bromomethyl-5,7-dinitro-1H-indole (25)

Figure A 2.20: $^1$H NMR spectrum of 2-Bromomethyl-5,7-dinitro-1H-indole (25)
Figure A 2.21: FTIR spectrum of 5,7-Dinitro-1H-indole-2-carbaldehyde (28)

Figure A 2.22: $^1$H NMR spectrum of 5,7-Dinitro-1H-indole-2-carbaldehyde (28)
Figure A 2.23: FTIR spectrum of 3,3'-Bis(indolyl)phenylmethane (31)

Figure A 2.24: $^1$H NMR spectrum of 3,3'-Bis(indolyl)phenylmethane (31)
Figure A 2.25: FTIR spectrum of 3,3’-Bis(indolyl)-4-hydroxyphenylmethane (36)

Figure A 2.26: $^1$H NMR spectrum of 3,3’-Bis(indolyl)-4-hydroxyphenylmethane (36)
Figure A 2.27: FTIR spectrum of 3,3’-Bis(indolyl)-4-chlorophenylmethane (37)

Figure A 2.28: $^1$H NMR spectrum of 3,3’-Bis(indolyl)-4-chlorophenylmethane (37)
Figure A 2.29: FTIR spectrum of 3,3’-Bis(indoly)-2-furanylmethane (38)

Figure A 2.30: $^1$H NMR spectrum of 3,3’-Bis(indoly)-2-furanylmethane (38)
Figure A 2.31: FTIR spectrum of 2-(2-Nitrophenyl)-4,5-diphenyl-1H-imidazole (44)

Figure A 2.32: $^1$H NMR spectrum of 2-(2-Nitrophenyl)-4,5-diphenyl-1H-imidazole (44)
Figure A 2.33: FTIR spectrum of 2,4,5-Triphenyl-1H-imidazole (50)

Figure A 2.34: $^1$H NMR spectrum of 2,4,5-Triphenyl-1H-imidazole (50)
Figure A 2.35: FTIR spectrum of 2-(4-Chloro-phenyl)-4,5-diphenyl-1H-imidazole (51)

Figure A 2.36: $^1$H NMR spectrum of 2-(4-Chloro-phenyl)-4,5-diphenyl-1H-imidazole (51)
Figure A 2.37: FTIR spectrum of 4-(4,5-Diphenyl-1H-imidazol-2-yl)phenol (52)

Figure A 2.38: $^1$H NMR spectrum of 4-(4,5-Diphenyl-1H-imidazol-2-yl)phenol (52)
Figure A 2.39: FTIR spectrum of 2-Methyl-4, 5-diphenyl-1H-pyrrole-3-carboxylic acid ethyl ester (63)

Figure a 2.40: $^1$H NMR spectrum of 2-Methyl-4, 5-diphenyl-1H-pyrrole-3-carboxylic acid ethyl ester (63)
Figure A 2.41: FTIR spectrum of 1-(2,4,5-Triphenyl-1H-pyrrol-3-yl)ethanone

Figure A 2.42: $^1$H NMR spectrum of 1-(2,4,5-Triphenyl-1H-pyrrol-3-yl)ethanone
Figure A 2.43: FTIR spectrum of Phenyl-(2,4,5-triphenyl-1H-pyrrol-3-yl)methanone (65)

Figure A 2.44: $^1$H NMR spectrum of Phenyl-(2,4,5-triphenyl-1H-pyrrol-3-yl)methanone (65)
Figure A 2.45: FTIR spectrum of 1-(2-Methyl-4,5-diphenyl-1H-pyrrol-3-yl)ethanone (66)

Figure A 2.46: $^1$H NMR spectrum of 1-(2-Methyl-4,5-diphenyl-1H-pyrrol-3-yl)ethanone (66)
Figure A 2.47: FTIR spectrum of 2,5-Dimethyl-1-propyl-1H-pyrrole (77)

Figure A 2.48: $^1$H NMR spectrum of 2,5-Dimethyl-1-propyl-1H-pyrrole (77)
Figure A 2.49: FTIR spectrum of 1-Butyl-2,5-dimethyl-1H-pyrrole (78)

Figure A 2.50: $^1$H NMR spectrum of 1-Butyl-2,5-dimethyl-1H-pyrrole (78)
Figure A 2.51: FTIR spectrum of 2,5-Dimethyl-1-p-tolyl-1H-pyrrole (79)

Figure A 2.52: $^1$H NMR spectrum of 2,5-Dimethyl-1-p-tolyl-1H-pyrrole (79)
Figure A 2.53: FTIR spectrum of 2,5-Dimethyl-1-(4-nitro-phenyl)-1H-pyrrole (80)

Figure A 2.54: $^1$H NMR spectrum of 2,5-Dimethyl-1-(4-nitro-phenyl)-1H-pyrrole (80)
Figure A 2.55: FTIR spectrum of 1-(4-Chloro-phenyl)-2,5-dimethyl-1H-pyrrole (81)

Figure A 2.56: $^1$H NMR spectrum of 1-(4-Chloro-phenyl)-2,5-dimethyl-1H-pyrrole (81)
Figure A 2.57: FTIR spectrum of pyridine (1)

Figure A 2.58: $^1$HNMR spectrum of pyridine (1)
Figure A 2.59: FTIR spectrum of ethyl iodide (2)

Figure A 2.60: $^1$H NMR spectrum of ethyl iodide (2)