

List of Tables

Table 3.1 FT-IR spectra of organic ammonium chlorides salts at room temperature. All frequencies are given in cm^{-1}	43-45
Table 3.2 ^1H NMR spectra of OACSS	47
Table 3.3 Paths of thermal decomposition in OACSS	53
Table 3.4 DSC studies on OACSS	56
Table 4.1 Crystal parameters for layered OIHCs	69
Table 4.2 DSC chart of OIHCs	76
Table 4.3 Crystallographic data and structure refinements for compounds 2 and 3	82
Table 4.4 Crystallographic data and structure refinements for compounds 8 and 10	83
Table 4.5 Hydrogen bonds and angles for OIHCs [\AA and $^\circ$]	91
Table 5A.1 DSC chart of OIHCs	115
Table 5A.2 Crystallographic data and structure refinements for compounds 11 , 12 , 13 and 14 at RT	116
Table 5A.3 Crystallographic data and structure refinements for compounds 15 and 16 at RT and at LT	117
Table 5A.4 Crystallographic data and structure refinements for compound 17 at RT	118
Table 5A.5 Crystal parameter for compounds 11 , 12 , 13 , 14 , 15 , 16 , 15' , 16' and 17	121-122
Table 5A.6 Torsion angles [$^\circ$] for compounds 15 , 16 , 15' and 16'	124
Table 5B.1 Crystallographic data and structure refinement parameters for compounds 18 , 19 , 18' and 19'	133
Table 5B.2 Hydrogen bonds and angles for OIHCs [\AA and $^\circ$]	138
Table 6.1 Crystallographic data and structure refinements for compounds 21 and 22	154
Table 6.2 Crystal parameter for compounds 21 and 22	157
Table 6.3 Crystal data and structure index parameters for compound 20	159
Table 7.1 Enthalpy of compound 23-RE , 23-RM , 23-RW and 23-RWE	173

Table 7.2 Crystal data and structure index parameters for compounds 23 , 23-D , 23-RE , 23-RM and 23-RW	175
Table 7.3 Crystallographic data and structure refinements for compound 24	177
Table 7.4 Bond distances, angles and metal-metal distances for compound 24 [Å and °]	178
Table 8.1 FT-IR spectra of organic ammonium nitrate-I, all frequencies are given in cm^{-1}	190-191
Table 8.2 FT-IR spectra of organic ammonium nitrate-II, all frequencies are given in cm^{-1}	192-193
Table 8.3 ^1H NMR spectra of OANSs	195-196
Table 8.4 TG/DTA of OANSs, showing thermal decomposition pathway	198-199
Table 8.5 DSC transition of OANSs	203
Table 8.6 Crystallographic data and structure refinements for anilinium nitrate-II, 4-methyl anilinium nitrate-II and benzilinium nitrate-II salts	206
Table 8.7 Hydrogen bonds distances and angles [Å and °] for anilinium nitrate-II, benzilinium nitrate-II, 4-methyl anilinium nitrate-II, ammonium nitrate and methyl ammonium nitrate at different phase	212-213