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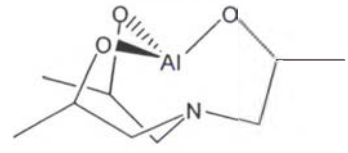
APPENDICES

Appendix A Alumatrane Synthesis

$$Al(OH)_3 + TIS + EG \xrightarrow{200^{o}C/\ 10\ h}$$



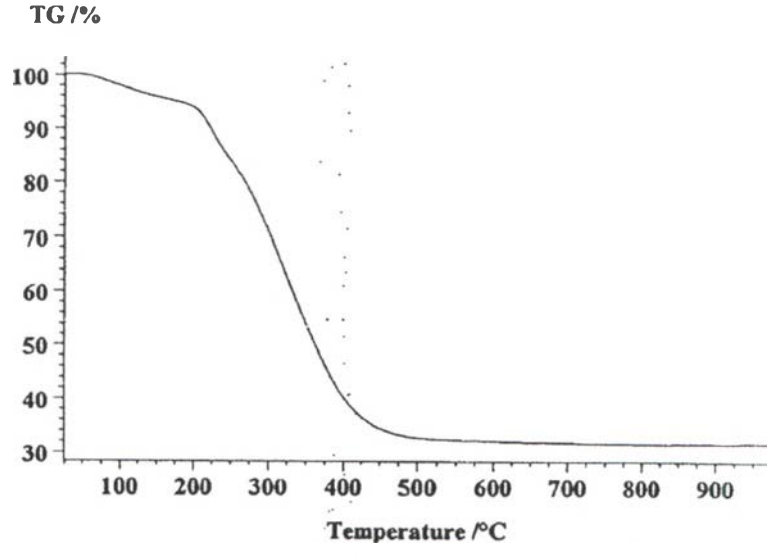


Figure A1 TGA of Alumatrane

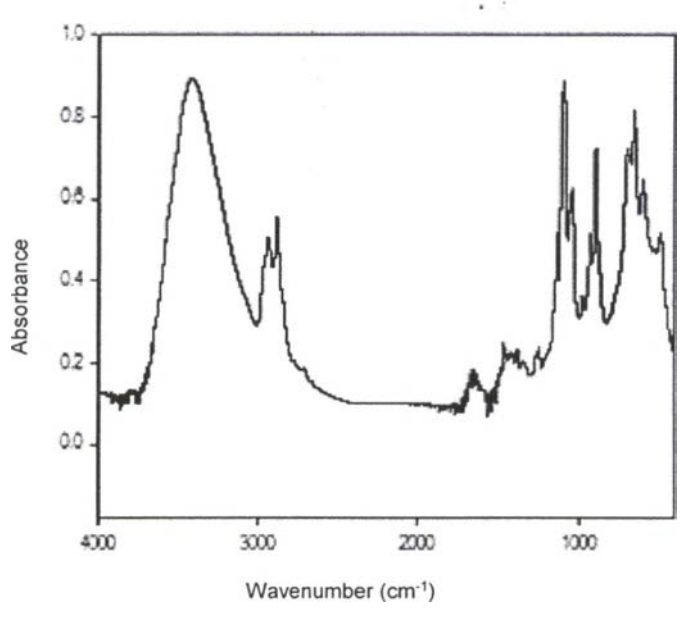
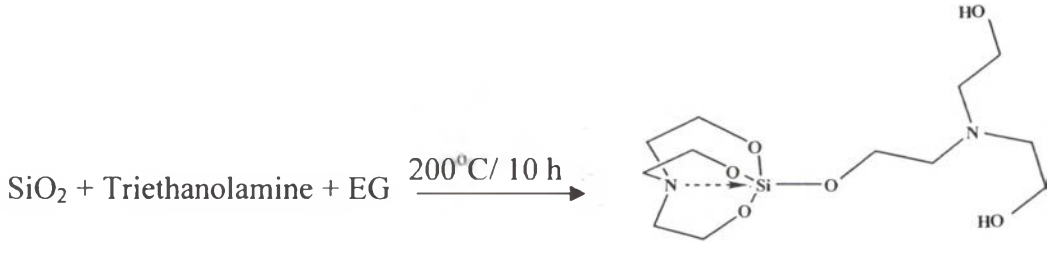


Figure A2 FTIR of Alumatrane

Table A1 FTIR spectrum of Alumatrane

Peak Positions (cm^{-1})	Assignments
3000-3700	b, ν O-H
2860–2986	m, νC–H
1649	w, O–H overtone
1244–1275	w, νC–N
1130	m, νC–O
1102	s, νAl–O–C
1037	m, νC–O
649	s, δAl–O

Appendix B Silatrane Synthesis



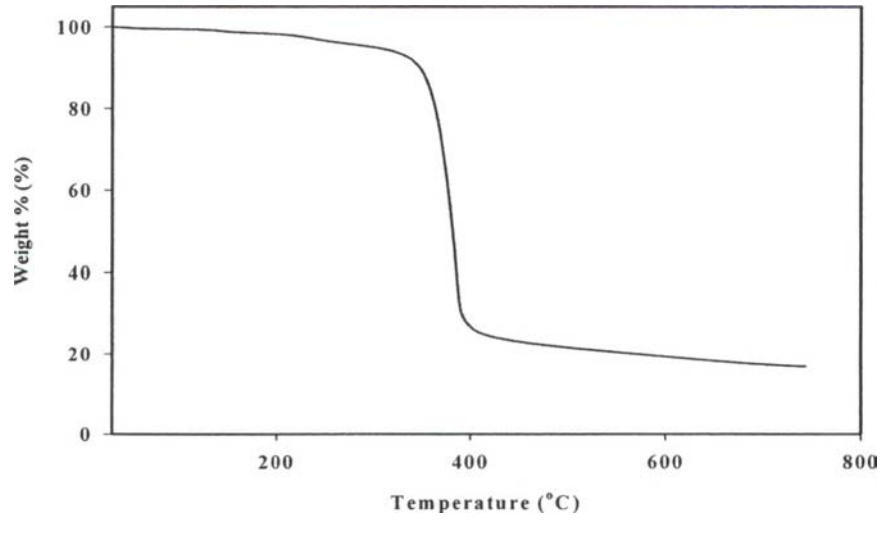


Figure B1 TGA of Silatrane

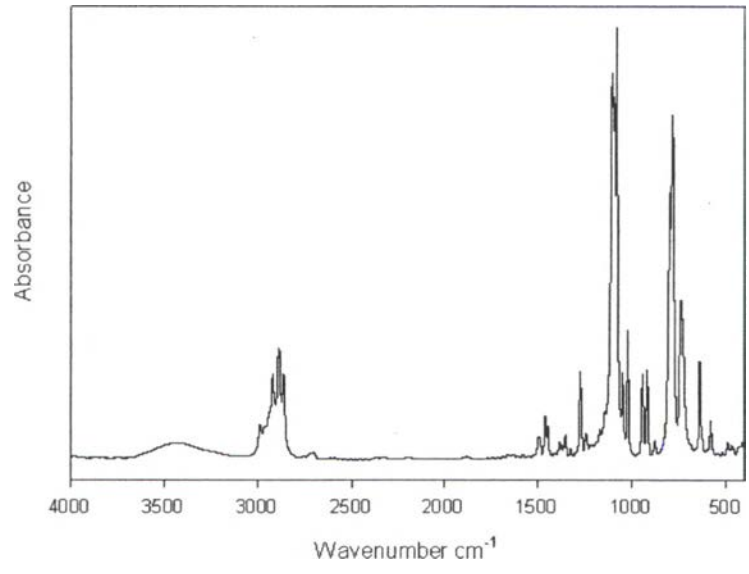


Figure B2 FTIR of Silatrane

Table B1 FTIR spectrum of Silatrane

Peak Positions (cm^{-1})	Assignments
3100-3700	b, ν O-H
2800-3000	s, ν C-H
2750-2670	w, Si<--N)
1445, 1459, 1493	m, δ C-H
1351	w, ν C-N
1276	m, ν C-O
1040-1180	b & vs, ν Si-O
786	vs, δ Si-O-C
735	s, δ Si-O-C
576	w, Si<--N

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Publications:

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2. Utchariyajit, K. and Wongkasemjit, S. (2008) Structural aspects of mesoporous $AlPO_4$-5 (AFI) zeotype using microwave radiation and alumatrane precursor, Microporous and Mesoporous Materials, 114, 175–184.
3. Utchariyajit, K. and Wongkasemjit, S. Effect of synthesis parameters on mesoporous SAPO-5 with AFI-type formation via microwave radiation using alumatrane and silatrane precursors, Microporous and Mesoporous Materials, accepted manuscript.
4. Utchariyajit, K. and Wongkasemjit, S. Microwave heating synthesis of Flower-like SAPO using atrane precursors and its activity for the preferential oxidation of CO over Pt/Flower-like SAPO, Powder Technology, submitted.
5. Utchariyajit, K. and Wongkasemjit, S. The Synthesis and Utilization of Pt/Mesoporous $AlPO_4$-5 and SAPO-5 Prepared Using Atrane Precursors Via Microwave Heating on The Preferential Oxidation (PROX) of CO inH_2-rich Gas, to be submitted.

Presentations:

1. Utchariyajit, K., Gulari, E. and Wongkasemjit, S. (2004) Effect of Conditions on Nickel Loaded Alumina via Sol-gel Process. Presented at The International Conference on Smart/Intelligent Materials and Nanotechnology, Chiang Mai, Thailand. (Oral)
2. Utchariyajit, K. and Wongkasemjit, S. (2008) The Use of Alumatrane for the Synthesis of Mesoporous $AlPO_4$-5 (AFI) Zeotype via Microwave. Presented at the 2nd International Meeting on Developments in Materials, Processes and Applications of Nanotechnology (MPA-2008), Cambridge University, United Kingdom. (Poster)