

LIST OF TABLES

Table No	Description	Page No
Table 1.1	Common ceramic raw materials and their sources.	5
Table 2.1	Fly ash derived ceramics.	18
Table 3.1	Chemical composition of waste ingredients.	31
Table 3.2	Chemical composition of tabular alumina, CAC, BFS, quartz, ball clay, feldspar and OPC.	37
Table 4.1	Sample's nomenclature, variation of compaction and foaming temperatures for silica foams.	48
Table 4.2	The chemical composition of RHA derived silica.	50
Table 4.3	Cost estimation of nano silica synthesis per kg using RHA as source.	53
Table 4.4	Cost estimation of silica sol (~ 7.5 % solid) synthesis per litre using RHA as source.	54
Table 4.5	Apparent porosity, bulk density and compressive strength of the foam specimens.	56
Table 4.6	Comparison of porosity and strength values of silica foam in several studies.	59
Table 4.7	Apparent porosity, closed porosity, bulk density and volume shrinkage of mullite foam specimens.	64
Table 4.8	Comparison of the properties between 1300°C fired mullite foam sample with other studies.	67
Table 5.1	Sample's nomenclature and composition for castable refractory.	72
Table 5.2	Cost estimation of silica sol (~ 30 % solid) synthesis per litre using RHA as source.	73
Table 5.3	Apparent porosity and bulk density of sintered castable samples.	76
Table 5.4	Physico-mechanical properties of waste RHA derived sol bonded castable against other source of silica sol bonded castables.	83
Table 6.1	Apparent porosity, bulk density, grain size and flexural strength of sintered wollastonite samples.	91
Table 6.2	Dielectric constant, tangent of loss and resistivity of sintered	93

samples.

Table 7.1	Sample's nomenclature and composition for tile samples.	97
Table 7.2	Apparent porosity and bulk density of sintered tile samples.	103
Table 7.3	Linear shrinkage and loss on ignition of fired tile samples.	105
Table 8.1	Sample's nomenclature and composition for ceramic boards.	111
Table 8.2	Water absorption, expansion in water and thermal conductivity of cured CB samples.	120
Table 8.3	Cold compressive strength, bending strength and humidity effect on CCS of cured CB samples.	123
Table 8.4	Comparison of properties between s-9 sample and obtained data from the literature using other wastes.	125
Table 8.5	Comparison of properties between s-9 sample and industry data.	125
Table 9.1	Identification and batch composition of insulation refractory samples	128
Table 9.2	Bending strength and CCS of fired sample at different temperatures.	134