

LIST OF PLATES

Plate No.	Title	Page No.
1.1	Pyramid of noise effects by World Health Organization (WHO)	04
1.2	Noise level chart showing kind of sound at various dB levels	05
2.1	Sisal plant to product process steps	19
2.2	Ramie plant to product process steps	23-24
3.1	Fabricated Beating Machine	65
3.2	Fabricated Combing Tool	65
3.3	Scouring treatment	66
3.4	Softening process	68
3.5	Infracolor sample dyeing machine and its control panel	71
3.6	Polypropylene Net	71
3.7	Launder-O-meter	71
3.8	Bundle of fibers arranged on the rotor panel of launder-O-meter	72
3.9	Llyod Instron Tensile Testing Instrument	73
3.10	Scanning Electronic Microscopy instrument (SEM)	75
3.11	Fourier Transform Infrared instrument (FTIR)	75
3.12	Energy-dispersive X-ray Spectroscopy instrument (EDS)	76
3.13	X-ray diffraction instrument (XRD)	76
3.14	Traditional Drop Spinning Technique	77
3.15	Hand Spinning Technique	78
3.16	Handspun Sisal yarns	78
3.17	Stepwise carding of the fiber, sliver and ramie rove yarn preparation	79
3.18	Alfred Suter Twist tester	81
3.19	Weaving using Fiber Strands	84
3.20	Exploration of weaves on table loom	84
3.21	Yarn winding and fabric preparation on handloom	85
3.22	Construction of Double cloth fabric	85
3.23	Fiber to nonwoven fabric preparation of various GSM	86
3.24	Antimicrobial testing instrument	89

3.25	45°Flammability tester	89
3.26	Laser cutting machine and process	90
3.27	Fabricated Sound Absorbing testing instrument	93
3.28	Resin application using padding mangle	94
4.1	Microscopic view of the fibers	97
4.2	Longitudinal and Cross-sectional SEM images of untreated fibres	104
4.3	Longitudinal and Cross-section SEM images of enzyme treated fibers	105
4.4	Longitudinal and Cross-section SEM images of enzyme treated fibers with variation in process	106
4.5	SEM images of un-finished and resin finished fabric samples	149
4.6	Microbial activity on the fabric samples	152-153
4.7	Collection of constructed fabrics	154
4.8	Schematic presentation of final product	154
4.9	Acoustic panel of R FUP fabric	155