

ITMA

2011 REVIEW



THE WOOLMARK COMPANY

Introduction

During September 2011 the International Textile Machinery Association held its four-year exhibition of textile machinery in Barcelona, Spain.

The exhibition featured 1350 exhibitors from 45 countries and attracted over 100,000 visitors from 135 countries. Exhibitors presented textile machines, chemicals and textiles ranging over the entire textile pipeline from raw fibre to final garments.

The Woolmark Company participated with a stand devoted to presenting the latest innovations in Merino wool.

The Woolmark Company's stand attracted over 160 visitors, from 48 countries, of which more than one third were decision-



makers. Most were manufacturers and the main enquiries were about the innovations and about sourcing: - "where can I find Merino wool yarns?" There were also 10 enquiries about becoming Woolmark licensees.

Presented on the stand were our latest Merino wool knitwear and woven wear innovation kits along with 25 garments to illustrate the range of innovations possible with Merino wool. Merino wool innovations are driven by consumer trends towards casualisation, environmental awareness, concerns for personal health and, since the global financial crisis, a desire for value without compromising luxury. Innovations presented included, Sculptured Merino, Vintage Merino, Merino Retract, Easy Iron Merino and Mercerised Merino.

During the exhibition, The Woolmark Company's staff visited key exhibitors to try and identify new trends and equipment that might have relevance to wool. Presented below is a summary of the findings, this is not an exhaustive review, just some of the highlights relevant to wool.

WEBSITES:

ITMA www.ITMA.com
Woolmark www.wool.com

YARN FORMATION (EARLY STAGE SPINNING AND TWISTING)

Overall the impression was that few manufacturers were presenting any new innovation or relevant update on spinning of long staple fibres or wool in particular. Companies such as Suessen, Rieter, and Savio appeared to have little or no interest in the wool spinning market. In fact Rieter confirmed they will no longer manufacture wool spinning machines. The big emphasis for yarn formation is reducing energy consumption and improving efficiency rather than launching ground-breaking new spinning systems. For example NSC claims 20% reduction in energy consumption for their ERA combing machines. Oerlikon Schlafhorst claimed, with their Eco concept and Eco spindle, up to 40% reduction in energy costs even for fine yarn; they also presented a minor update on their compact ring spinning machines, basically a better suction nozzle and a new type of "perforated" belt with anti-plug and auto-clean function will offer benefits for the spinning of wool yarns prone to leaving deposits on rollers.

WEBSITES:

Savio	www.saviospa.it
Suessen	www.suessen.com
Rieter	www.rieter.com
NSC	www.nsc-groupe.com
Oerlikon Schlafhorst	www.oerlikontextile.com

FABRIC FORMATION (NON-WOVENS, CIRCULAR KNITTING AND WEAVING)

Trutzschler presented a new non-woven "fabric" made of 100% wool by hydroentangling very short fibre (20mm) into a relatively stable non-woven fabric 5mm thick that might have potential as filling material for apparel or bedding.

The new spin & knit circular knitting technology launched by Mayer & Cie, Pailung & Terrot all claim to reduce the space required by a circular knitting plant but all three systems

are based on air-jet spinning which is not unfortunately suitable for wool.

Groz Beckert introduced 'litespeed' circular knitting needles which claim to reduce energy costs by 20% because they are lighter and take lubricating oil more efficiently.

Santoni displayed the SM6 RIB2 seamless machine and demonstrated the machine capability by knitting a wool sweater in 5 minutes with little making up required. The Mec-Mor circular knitting machine is really a competitor to the flat knitting machine because it can knit exactly the same complex patterns as flat knitting machines, eg cable and pointel but with much higher efficiency. There appears to be a trend towards knitting the body seamless and attaching sleeves knitted on flatbed to improve productivity.

For the weaving sector, speed and efficiency were the key; of course the 2100 picks per minute shown by Picanol are not relevant to wool but most airjet looms can now be expected to enable up to 700 picks per minute for well-prepared wool warps. Both Picanol and SMIT were offering much shorter design change times for their looms, a potential benefit for wool weaving given the relatively short runs of the wool industry.

Karl Mayer has also on offer a sample warping machine that is capable of creating warps of up-to 700 metres and with leasing programmes suitable for both wool and cotton.

CCI Tech from Taiwan showed their range of sample warping, sizing and weaving machines designed for the studio; and able to make fabrics up to 0.5m wide from one end of yarn.

WEBSITES:

Trutzschler	www.truetzschler.eu
Mayer & Cie	www.mayercie.de
Pailung	www.pailung.com.tw
Terrot	www.terrot.de
Gros Beckert	www.groz-beckert.com
Santoni	www.santoni.com
Mec-Mor	www.mec-mor.com
Picanol	www.picanol.be
SMIT	www.smit-textile.com
Karl Mayer	www.karlmayer.com
CCI Tech	www.ccitk.com

DYEING AND FINISHING (TOPS, YARNS AND FABRIC)

Again energy and water consumption were the key areas for innovation. The use of liquor ratios down to 3:1 are not relevant to wool but some of the latest beam dyeing machines from Noseda and Fongs should be able to dye wool at a ratio of 7:1. Precision beam-winding devices from the same two companies permit single jersey fabrics to be rolled open-width without the need for selvedge glueing.

Horizontally aligned spindles in package dyeing machines that permit quicker loading and unloading were shown by Noseda, Fongs, Thies, Xorella, Cubotex and Hisaka. Furthermore, these machines do not need to be completely filled with liquor so cutting down liquor ratios to the minimum.

In Jet dyeing, overflow nozzles and low-pressure nozzles (Fongs and Sclavos) have been optimised to minimise abrasion and reduce tension in the fabric thus making machines designed for towels potentially suited to wool jersey fabrics. Sclavos also claim their jet-dyeing machines accommodate a wide range of fabric weights even at low liquor ratios.

Stalam's TCRF drying machines for yarns and tops claim to improve efficiency by forcing warm air over the load to lower internal temperatures and help remove water vapour; the heat is recovered for re-use and reduces energy costs by up to 25%.

Flainox showed a double-paddle side-paddle claiming to increase liquor circulation for a given speed and thus productivity by 20%. Their new rotary dyeing machine is suitable for wool, having Y pockets and a two-fan spray nozzle permitting lower liquor ratios in dyeing of both flat-bed and seamless wool knitwear.

Osthoff-senge showed a versatile singeing machine with water cooled roller capable of singeing a wide range of fabric weights and with a new double-jet burner that can reduce gas consumption by up to 10%.

Unitech claims a reduction in energy of 10% by improving airflow within their Red series stenter. Bruckner presented their EcoHeat/Eco Air system which can recover heat from both water and air and can be retrofitted to dyeing machines or driers. In Lafer's new Ecodry ev3 system, fabric is dried at lower temperatures in an autoclave where the pressure is maintained below 100 mbar by means of a vacuum pump. Continuous

drying is achievable thanks to an innovative airlock seal that isolates the autoclave inlet and outlet thus maintaining the vacuum. It is ideal for drying pale shades at lower temperatures.

Some manufacturers were even dispensing with water completely; the Softswell system from Etema in Turkey is designed to finish and soften woven or knitted fabrics by beating and blowing the fabric. The fabric can be damp or dry fabric can be humidified by a steaming section. Relaxation shrinkage is controlled and a casual finish can be imparted.

WEBSITES:

Noseda	www.nosedal893.it
Fongs	www.fongs.com
Thies	www.thiestextilmaschinen.com
Xorella	www.xorella.ch
Cubotex	www.cubotex.it
Hisaka	www.hisaka.co.jp
Stalam	www.stalam.it
Sclavos	www.sclavos.gr
Flainox	www.flainox.com
Unitech	www.unitechgroup.it
Bruckner	www.brueckner-textil.de
Osthoff-senge	www.osthoff-senge.com
Etema	www.entema.com.tr

GARMENT MAKING (FLATBED-KNITTING AND CUT-&-SEW MANUFACTURE AND GARMENT FINISHING)

Flat-bed electronic machines are becoming finer, Stoll showed 20gg and Shima Seiki showed a 21gg machine knitting able to knit between 18 and 26gg by permitting the machine to knit out of gauge more efficiently. Surprisingly, given their strength in CAD patterning on knitwear Shima Seiki launched a new digital printing machine linked to their CAD system which is able to make jersey fabric. It looks like a woven fabric.

Fine gauge flat-bed knitting of shaped panels does however present a challenge for linking and thus the new system offered by ERBE looks interesting. Capable of stitch-for-stitch linking from 1 to 20gg, this machine uses a camera to follow a special optically active thread which passes through each stitch and

thus automatically guides the needle through each stitch.

Continuing the theme of automation, Dong Sung showed its latest fully automatic glove knitting machine which knits complete gloves in one machine, available in four sizes from 7gg to 15gg.

Cutting systems based on CO2 lasers were common, the latest systems also being able to etch digital images into fabrics that have dyed with sublimatable dyestuffs such as indigo. These will ultimately replace the need for mechanical distressing techniques for jeans, benefitting the health of thousands of workers in the industry. These lasers are also capable of etching patterns into heavily milled wool fabrics.

Silc presented its highly automated garment pressing equipment designed especially for lightweight woven apparel.

WEBSITES:

Stoll	www.stoll.com
Shima Seiki	www.shimaseiki.com
Erbe	www.erbe.fr
Dong Sung	www.dong-sung.co.kr
VAV Technology	www.vavtechnology.com
Silc	www.silcspa.com

DYES AND CHEMICALS

Huntsman were showing their alternative to chrome dyes – The Lanazol CE range which can dye to the same depth as Chrome Black PV yet damage fibre less and thus improve spinning and fabric formation efficiencies. Clariant has enhanced their acid dyes range to include Lanasyn® Flavine which gives dark shades with good fastness. Digital printing machines were plentiful but just as important is the ink; Huntsman's Lanset XKS ranges appear to offer a dye specially for wool. Nano-pigment dye systems, where the pigment

particle is encapsulated by a water-soluble coating, and which are faster and easier to remove from processing machinery were suggested by Eksoy.

Beyond Surface Technologies were promoting its multi-purpose Matrix OSD finish which claims to bind pigments more securely whilst maintaining soft handle. Most chemical companies were offering C6 or even C4 alternatives to traditional fluorocarbon finishes, with Laundry Air Drying as a bonus, for example the Nuva N series from Clariant or the Barrier system from Beyond Surface Technologies.

WEBSITES:

Huntsman	www.huntsman.com
Clariant	www.clariant.com
Beyond Surface Technologies	www.beyondst.com
Dystar	www.dystar.com
Tanatex	www.tanatex.com
Eksoy	www.eksoy.com

TESTING

The benefits of more sophisticated computer control and analysis are the main innovations in the field of testing. For example SDL Atlas showed their QuickView-plus device which automatically measures dimensional change after tests such as AATCC TM135 or indeed the Woolmark TM31, on both fabrics and garments.

Also bigger is quicker, in that 9-head Martindale testing is now possible from James Heals and SDL Atlas.

WEBSITES:

SDL Atlas	www.sdlatlas.com
James Heal	www.james-heal.co.uk

SUMMARY

Although very few manufacturers are focussed on specifically wool there were many innovations which can be utilised by the wool processing industry, especially in the fields of chemicals, energy and water consumption.



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