[Special Issue] “Retrospect of Textile Machinery in the 3rd OTEMAS ’85”

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General Review

Akira Horikawa
Tezukayama Gakuin Junior College

The 3rd OTEMAS (Osaka International Textile Machinery Show which is held once every four years) was originated in Osaka, where textiles have long been a part of their traditions. OTEMAS has become one of the world’s leading textile exhibitions along with ITMA of Europe and ATME of the United States. The number of participants and exhibitors this time to all seven halls of INTEX OSAKA exceeded the records of the two previous shows. 380 exhibitors with 2,385 stands are from 18 countries including four newly-joined countries.

In the field of spinning, carding and spinning machines, speeding-up and automation are realized by many makers. The machines exhibited and their auxiliaries attracted a great attention, because they have made possible the small lot production of

a variety of high quality products after eager introduction of electronic technology. Some machines were still at their improvement stage, but most others had been brought to perfection for practical use.

Among the innovative spinning methods, only those by rotor, air-jet and friction have attracted attention.

In the field of looms, up-graded air- and water-jet looms are the main features at this show. If we hope higher loom speed, the conversion of picking method to new mechanisms is required because of the speed-limit and the reed vibration at high speed. The improvement of subsidiary equipments is required also to speed-up looms, for example, the development of slashing and warping equipments.

In dyeing and finishing processes, the main feature is the computerized controlling systems using many kinds of sensors efficiently. The combination of monitoring systems having graphic displays with controlling systems drew much attention. Such construction as blowers, heat exchangers, ducts and driving gears are set outside of the box through which fabrics pass through, has been increasing in number since the 2nd OTEMAS, and this tendency is also seen in this show.

The Highlight Seminar was held at 1:30 p.m. on September 13 and 14 at the International Conference Hall sponsored by the Osaka International Trade Fair Commission with the close support by the Textile Machinery Society of Japan. About 200 participants filled the conference room and earnestly listened to the lectures in accordance with the following program.
Chairman: Akira Horikawa, Chairman of Planning Committee of TMSJ.

- (1) Technological Development of High Efficient Fiber Manufacturing Process: Prof. Dr. Jiro Shimizu, Tokyo Institute of Technology
- (2) Development of Innovative Spinning Method and Systematizing Technology: Junzo Hasegawa, Toyota Central Research and Development Laboratories
- (3) Technological Innovations of Up-to-date Knitting Machinery and Further View: Satoru Ito, Knit Engineering
Chairman: Akira Shiomi, Vice-chairman of Planning Committee of TMSJ
- (4) Improvement of Productivity and Quality of Innovative Looms, and Corresponding Preparatory Machinery: Teruo Ishida, Technical Research Institute of Ishikawa Prefecture
- (5) Automation of Dyeing and Finishing Processes: Itaru Abe, Vice-chairman of Dyeing Research Committee of TMSJ
- (6) Application of New Materials Used for Aircrafts to Textile Machinery: Kenji Fukuda, Research Institute of Polymer and Textiles

The 3rd STEMAS attracted a larger number of buyers and users than expected both from Japan and foreign countries. The machines exhibited and their auxiliaries attracted a great attention because they have made possible the small lot production of a variety of high quality products.

I hope that on the basis of this success of OTEMAS the textile technology will progress forwards.

Fiber Manufacturing Machinery

Osamu Yaida
Faculty of Science of Living, Osaka City University

1. Introduction

The exhibits of Fiber Manufacturing Machinery were limited in number this time compared with ITMA'83 and ATME'85, because many machine makers abroad (such as Barmag, Rieter, ARCT, Giudici, Neumag, Savio, Alucolor etc.) did not participate. In such a situation, Murata Machinery, Teijin Seiki, Ishikawa Seisakusho and Rieter-Scragg put on display their DTY machines with 1,200 m/min of processing speed and attracted much attention.

The processing speed of High Speed Winders remained 6,000 m/min, and the interest had switched to larger packages. Development of automatic changers has not yet been complete, and its success in the near future is in eager expectation. It may be said the higher the winder speed, the greater the need of auto-changers.

In addition to the above machines, parts for fiber manufacturing machinery and measuring instruments were exhibited.

2. Draw Texturing Machine (DTY Machine)

The speeding up of Draw Texturing Machines seems to have

Table 1 Specifications of DTY machine at the 3rd OTEMAS

<div> <div> <div>Maker</div> <div>Murata Machinery</div> <div>Teijin Seiki</div> <div>Ishikawa Seisakusho</div> <div>Rieter-Scragg</div> </div> <div> <div>Machine model</div> <div>Mach-crimper 333-II</div> <div>SDS-1200</div> <div>IVF-1210</div> <div>DCS-1200</div> </div> <div> <div>Unit</div> <div></div> <div></div> <div></div> <div></div> </div> </div>							
Item							
No. of spindles				216	216	216	216
Max. speed		m/min		1,200	1,200	1,200	1,200
Demonstration speed		m/min		900	900	900	900
Yarn kind				PET 75/36 POY	PET 75/36 POY	PET 50/36 POY	Ny. 6 13°/5 F
Twister type				Nip-twist	Belt-twist Friction	Friction	Friction
Structure				Belt cross	Belt cross		
Material					Particular Polyurethane Rubberthane	Ceramic	Polyurethane
Heater part	1st heater	Length	mm	2,500	2,500	2,000	2,000
		Structure		Contact with heat plate	Contact with heat plate	Contact with heat plate	Contact with heat plate
2nd heater	Length	mm		1,600	1,460	—	—
	Structure			Non-contact with heat tube	Non-contact with heat tube	—	—
Cooling part		Length	mm	2,650	1,650–3,095	1,200	900
		Structure		Air-cooled plate	Air-cooled plate	Air-cooled plate	Air-cooled plate
Take-up part	Traverse speed	DS/min		580	600	540	600
	Length	mm		250	250	250	250
	Dia. of winding	mm		320	300	300	300
	Max. of yarn quantity	kg		11	12	12	10
Dimensions	Height	mm		4,300	4,850–5,405	6,000	4,050
	Length	mm		17,435	17,580	19,620	17,080
	Width	mm		6,760	6,020	3,900	6,390
Power consumption		kW		218	167	124	74