

## *Proceedings of 57th Joint Technological Conference*

Four leading textile research institutes in India viz. BTRA, Mumbai, ATIRA, Ahmedabad, SITRA, Coimbatore and NITRA, Ghaziabad have been organising Joint Technological Conferences over the years. In this annual event, latest finding of the research programs with reference to the latest technological developments are disseminated. In this context, 57th Joint Technological Conference was held at BTRA, Mumbai on 17th and 18th February, 2017. Nearly, 300 delegates from industry, trade and academics participated in this conference. The highlight of this conference was one full day on 'Geosynthetics', under the sponsorship of Textile Commissioner's Office, Ministry of Textiles, GoI and the other day was devoted to R&D in Emerging Areas, Protective Textiles, Product Development, Eco-friendly process, etc. related to traditional textiles.



*Chief Guest Dr. Kavita Gupta, Textile Commissioner, Ministry of Textiles, GoI. lighting the lamp*

Moreover, ability to translate research output in to commercialisation is the need of the hour. She stressed the importance of the link between academia and the industry.



*Dr. Anjan K. Mukhopadhyay, Director, BTRA welcomed the dignitaries and the delegates.*

Mr. Narendra Dalmia, Deputy Chairman, Governing Council, BTRA presided over the inaugural session. In his presidential speech, he talked about the research projects of all four TRAs currently in progress and their findings as well as the operational performance. He said that innovation is the key word and this is where the Research Associations play an important role and appreciated excellent work done by all the four TRAs to help the industry in its goal to have better operational efficiency.

Mr. Rajesh Nath, the Managing Director for VDMA in India made the Key note address introducing VDMA, Textile Machinery and the solutions and competence of VDMA members also in the area of machinery, plants and components for geotextiles applications. This year, VDMA completes 125 years with its presence in Germany.

With the theme of the event being Geotextiles, he spoke about Geotextiles being ambitious textile products that are tailor-made according to the intended application. Depending on application, the soil quality has also to be considered when choosing geotextile material. Nonwovens, woven and warp-knitted geotextiles, geogrids, of all geotextiles used around the world, nonwovens were estimated to make up over 65 % in terms of area.

The event was inaugurated by Dr. Kavita Gupta, Textile Commissioner, Ministry of Textiles, GoI. Dr. Kavita Gupta, in her inaugural address, said that in India only 10% of textile products belong to technical textiles as compared to developed nations such as Germany where 50% of textile products belong to technical textile category.

Current market size of technical textiles in India is Rs. 1 lakh crore and the market is growing at 20% CAGR. In order to grow in high value technical textiles segment, we should focus on research that is demand based and market driven.

Dr. Anjan K. Mukhopadhyay, Director, BTRA welcomed the dignitaries and the delegates. He briefed the audience about this conference profile and said that one full day was devoted to 'Geosynthetics' that could open up an avenue for the conventional textile manufacturers to interact with Geosynthetics manufacturers/users to know the opportunities available in terms of machinery, processes, etc. to make the technical textile products, especially geosynthetics. He also said German Textile Machinery Manufacturing Companies have also taken part in this conference by way of presentations on needle-felt nonwoven and latest machine innovations on treatment of Geotextiles.

In order to produce tailor-made geotextiles, appropriate machinery is needed and VDMA can guide the industry to the right manufacturers as per the requirement.

Dr. C.R. Prayag, Officiating Director, ATIRA proposed vote of thanks.

### **First day proceedings**

In this two-day conference, first day was allotted exclusively for 'Geosynthetics' and personnel from geosynthetics manufacturers, users of geosynthetics and TRAs presented their papers. There were 5 technical sessions in the first day.

In the first session, chaired by Mr. S. Bagli, Chief Technology Officer, Strata Geosystems, Mumbai, two papers were presented. One is on 'Geosynthetics: Challenges in using in Navi Mumbai projects' by Prof. Anand.R. Katti, Professor, Datta Meghe College of Engineering, Navi Mumbai & Managing Director, Nagar Yuwak Shikshan Sanstha, Airoli and another on 'Application of Geosynthetics in Canals' by Mr. Vivek P. Kapadia, Chief Engineer & Addl. Secretary, Water Resource, Gandhinagar, Gujarat. The papers were well received by the audience and good interaction was seen during question and answer session.

In the second session, two papers were presented. This session was chaired by Mr. Vivek P. Kapadia, Chief Engineer & Addl. Secretary, Water Resource, Gandhinagar, Gujarat. The first paper was on 'Metal net covered sand fill bags for erosion and flood control' by Ms. Sonal Kulkarni, Maccaferri Environmental Solutions Pvt. Ltd., Gurgaon and second one was on 'Geosynthetic systems for coastal erosion control with case reference of Alleppay Kerala' by Mr. Rohit Chaturvedi, Vice President Business Development, Flexituff International Ltd., Madhya Pradesh.

The third session was chaired by Mr. Guru Vittal, Chief Scientist, CRRI, New Delhi. The following three papers were presented.

- Strengthening of road subgrade and slope stabilization using Jute Geosynthetics - Mr. Pradip Kr. Choudhury, Principal Technologist, National Jute Board, Kolkata.
- Geogrids for retaining walls – Mr. Satish Naik, Chief Executive Officer, Best Geotechnics Pvt. Ltd, Mumbai.
- Geostap for RE walls – Mr. Mangesh Shinde, Divisional Head (South & West Region), Reinforced Earth India Pvt. Ltd., Navi Mumbai.

Prof. A. R. Katti, Professor, Datta Meghe College of Engineering, Navi Mumbai & Managing Director, Nagar Yuwak Shikshan Sanstha, Airoli, chaired the fourth session. Two papers viz., (i) Rehabilitation for existing landfills – Mr. Aditya Agarwal, CEO, Jeevan Products, Navi Mumbai and (ii) Hydraulic properties of geo-textiles: An experimental study - M/s. Seema Patel, R.V. Chikhani, Rajesh Patel and Jignesh Patel, ATIRA, were presented.

In the fifth session, Prof. S.G. Vinzenekar, Ex. Principal, VJTI, Mumbai chaired the proceedings. The following three papers were presented in this session.

- Challenges and potentials of using Geosynthetics in Road and Bridges by Mr. P.L. Bongirwar, Retired Principal Secretary, PWD.
- Vacuum PVD for fast soil stabilization by Mr. V.V. Vaishampayan, Managing Director, Soham Foundations, Navi Mumbai.
- Geotechnical expertise at BTRA by Mr. Sri Ramchandran, BTRA.

### **Second day proceedings**

In the second day, there were 7 technical sessions. Papers from all four TRAs were presented in the areas of protective textiles, emerging areas, spinning, product development, eco-friendly products, etc. In the end, there was a special session by German Textile Machinery (VDMA), in which two papers were presented.

The focus of the First session was 'Emerging Areas' chaired by Dr. M.K. Talukdar, Kusumgar Corporates Pvt. Ltd., Mumbai. There were three papers in this session and all were from BTRA. Titles were as follows.

- Use of electron beam irradiation for solution of biodegradation enhancement in textile industry by M/s. Smita Deogaonkar, Megha Patel, BTRA and Kaushlesh P. Rawat, BARC.
- Development of silver coated electro-conductive cotton fabric using electron beam radiation technology by M/s. Kumar Krishnanand and Amol G. Thite, BTRA.

- Adhesion improvement of coated textiles by atmospheric plasma treatment by M/s. Pratik Joshi and Shital Palaskar, BTRA.

In the second session, following two papers related to 'Protective Textiles' were presented. Dr. A.K. Rakshit, Executive Director, ITTA, Mumbai chaired the proceedings.

- Protective textiles to protect against electromagnetic radiation - M/s. Pawan Sharma, Seema Patel and C.S. Vora, ATIRA.
- Development of work wear for workers working in cement industry - M/s. M.S. Parmar, Shweta Saxena, Vasundhara Verma and Satypriya Dash (M/s Arvind Ltd.) [NITRA].

Prof. S.G. Vinzenekar, Ex. Principal, VJTI, Mumbai chaired the third session on 'Spinning'. The following three papers were presented.

- A new approach on study of twist contraction levels in modern ring spinning process by M/s. D. Jayaraman and V. Vijayajothi, SITRA.
- Influence of combing of polyester/cotton blended material on yarn quality compared to the traditional processes by M/s. D. Jayaraman and N. Vittopa, SITRA
- Achievable levels of UKG in modern spinning mills (Present and Future scenario) by M/s. N. Vasanth Kumar and S. Chandirasoodan, SITRA

Chairman of the fourth session was Dr. Anirban Guha, Associate Professor, IIT Bombay and the session topic was 'Product Development'. The following three papers were presented.

- Concept paper on development of nano-fibre based water filtration device for human beings by Mr. Chetan Mahajan, ATIRA.
- Electronic drape tester based on image analysis technique by M/s. Arindam Basu, Sanjeev Shukla, Krishan Dewan and Paurush Godhar, NITRA.
- Development of smoothness testers for finished fabrics by M/s. M.S. Parmar, Nidhi Sisodia, Maheshwar Singh and Vasundhara Verma, NITRA.

In the fifth 'General' session, the following three papers, dealing with spinning productivity, garment work practices and water conservation in textile wet processing, were covered. Prof. S.G. Vinzenekar, Ex. Principal, VJTI, Mumbai chaired this session.

- Productivity in spinning mills-2016 (based on SITRA's 33rd Productivity Survey) by M/s. J. Sreenivasan and P. Subash, SITRA.
- A study of work practices in Indian garment factories by M/s. Vivek Agarwal, M.M. Tiwari, Shweta Saxena, Kushagra Prakash and M.K. Bansal, NITRA.
- Practical approaches for water conservation in textile wet processing by M/s. Tanaji Kadam and M.S. Kulkarni, BTRA.

Prof. D.P. Chattopadhyay, Professor, M.S. University, Vadodara chaired the sixth session on the topic of 'Eco-friendly Products'. There were two papers and the same are given as follows.

- Eco-friendly jute reinforced composite based toilet with bio-digester by M/s. Kiran Dev, T. Gangopadhyay, Ashok Kumar, M. Karthigeyan, Pravin Patel, K.K. Misra, C.S. Vora and S.S. Rathod, AITRA.
- Development of infant baby clothings using ecomordant and natural dyes on cotton fabric with antibacterial activity by M/s. K. H. Prabhu, S. Sivakumar and E. Prakash, SITRA.

In the last session, personnel from German Textile Machinery (VDMA) presented the following two papers.

- Mr. Hjalmar Schwab, Sales Manager, DILO Systems on "Latest technique and technology for the production of needle felted nonwovens and their applications".
- Mr. Juergen Hanel, Business Development Manager-Technical Textiles, A. Monforts Textilmaschinen on "Latest machine innovations for treatment of Geotextiles".

In the end, Dr. Anjan K. Mukhopadhyay, Director, BTRA thanked all those who have contributed for the success of this event.