



A Monthly Insight into the ICAR-CIRCOT

E - NEWS LETTER

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Director's Desk...

ICAR-CIRCOT has been serving the textile industry since its inception in 1924. In the textile finishing area, institute is actively doing research and has developed several technologies like eco-friendly finishing using

natural materials, antimicrobial finishing using nanoparticles, water repellent finishing using plasma, enzyme based softening, formaldehyde free durable press finishing etc. The textile finishing imparts value, comfort and functionality to the textile materials with the use of natural and synthetic based chemical substances. It also requires huge amount of water and energy for processing. There are several challenges and opportunities associated in this sector. Recently, Government of India has introduced stringent effluent control norm with zero liquid discharge (ZLD) concept. There is a good opportunity to introduce innovative finishing technologies using nano materials, bio-molecules and natural substances to improve comfort and functionality of textile materials. With this backdrop, the institute is organizing one day National Seminar on "Recent Advances in Textile Finishing" in collaboration with Indian Fibre Society (IFS) on December 17, 2016.

Further based on the expertise gained in the field of cotton technology, ICAR-CIRCOT has organized numerous skill development programmes for the benefit of various stakeholders. In continuation of our efforts, a programme on "Fibre & Yarn Quality Management in Spinning" was organized in this month with the objective of acquainting the participants with basic and advanced knowledge on cotton quality and yarn spinning.

P. G. Patil

ICAR-CIRCOT, Mumbai

Visit of Shri Parshottam Rupala, Hon'ble Minister of State for Agriculture & Farmers Welfare and Panchayati Raj, Govt. of India

Shri Parshottam Rupala, Hon'ble Minister of State for Agriculture & Farmers Welfare and Panchayati Raj, Govt of India visited the institute on 24th October, 2016. Dr. P. G. Patil, Director, ICAR-CIRCOT welcomed the Hon'ble minister and briefed about the research activities and achievements of the institute. He also visited research laboratories, nano cellulose pilot plant and exhibition-cum-visitors room and inspected the activities of the institute. Hon'ble minister also addressed all staff members of the Institute. He appreciated the work done by the institute in the field of post-harvest processing of cotton, by-products utilization and value addition. He lauded the establishment of India's first Nano cellulose Pilot Plant and emphasized the need to exploit its potential through product development and commercial high end applications. He stressed upon the importance of technology transfer from lab to land for the benefit of farmers & other stakeholders and the need to promote the use of cottonseed oil as an edible oil in lieu of the current dependence on imported edible oil. Hon'ble minister felt the need for modernization of the institute's infrastructure and strengthening its manpower, as CIRCOT is the only institute in the country working in the areas of utilization of cotton, its by-products and biomass. Shri Suresh Kotak, Chairman of the Indian Society for Cotton Improvement emphasized the importance of research & development to promote cotton based textiles to tackle the threat posed by man-made fibres.



**Hon'ble Minister of State for Agriculture & Farmers Welfare and Panchayati Raj
Shri Parshottam Rupala at the CIRCOT exhibition room**



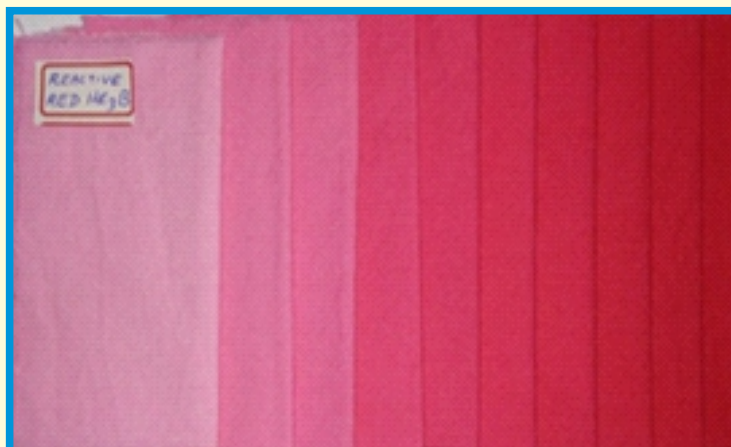
**Hon'ble Minister of State for Agriculture & Farmers Welfare and Panchayati Raj
Shri Parshottam Rupala at the Scanning Electron Microscopy Lab**



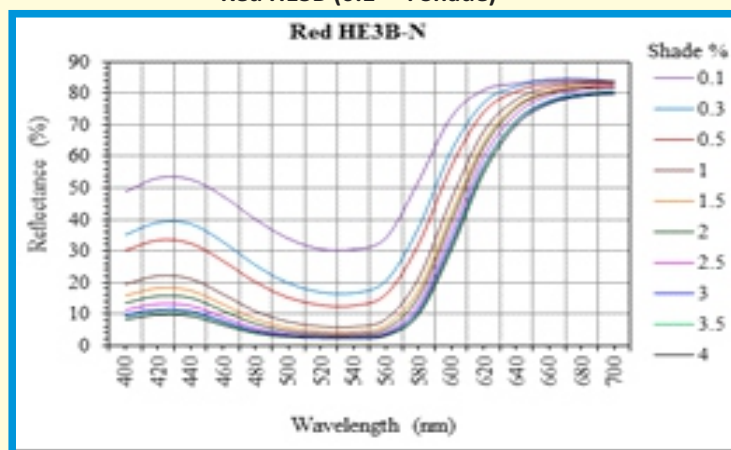
**Shri Parshottam Rupala, Hon'ble Minister of State for Agriculture & Farmers Welfare and
Panchayati Raj addressing ICAR-CIRCOT staff**

Non-Metameric Colour Matching of Cotton Textiles

Colour matching in the textile industry is a complicated process. Presently CIE method is used in colour matching, but the issue of metamerism exists. Metamerism persists when two coloured samples match at one set of condition (light source/viewing angle/observer) but do not match if the conditions change. To address this issue a non-metameric colour matching system is required. A database has been prepared by dyeing cotton fabrics with various concentrations of reactive dyes through which dye recipe can be calculated to match any shade. To prepare this database, reactive HE dyes (15 different colours) were used on cotton fabric samples with 10 different concentrations (0.1 to 4 %). The total of 150 samples at different range of shades were obtained for each reactive dye. These dyed samples reflectance values were measured using the spectrophotometer and their alpha values were calculated to use them as input for a software program which can predict the dye recipe for non-metameric colour matching.



Cotton Fabric Samples Dyed with Reactive Red HE3B (0.1 – 4 Shade)



Reflection Curve of Cotton Fabrics Dyed with Reactive Red HE3B-N

Trainings

Fibre and Yarn Quality Management in Spinning

A three day training programme on “Fibre & Yarn Quality Management in Spinning” was organised during October 5-7, 2016. It was attended by cotton breeders from agricultural universities, students from academic institutions and industry personnel. The training focused on fibre quality aspects, relation between fibre and yarn quality, modern spinning systems, post spinning operations and yarn quality analysis. The participants were taken to the nearby spinning industry for exposure to a commercial setup. Dr. R. Guruprasad, Dr. T. Senthilkumar and Er. G. T. V. Prabu, Scientists coordinated the training programme which concluded with the certificate distribution by Dr. P. G. Patil, Director, CIRCOT during the valedictory session on 7th October, 2016.



Group Photo of Training Programme on “Fibre & Yarn Quality Management in Spinning”

ISO Training

Bureau of Indian Standards (BIS), National Institute of Training and Standardization (NITS, Delhi) conducted a training for CIRCOT staff members on “Transition and Internal Audit Training Programme on Quality Management Systems as per IS/ISO 9001:2015” during 13 – 14, October 2016 at CIRCOT, Mumbai. Twenty staff members including scientist, technical and administrative staff attended this training. Dr. P. G Patil, Director, ICAR-CIRCOT inaugurated the training programme. Mr. Chilakwad Director, National Institute of Training and Standardisation (NITS, Delhi) has delivered lectures about various aspects of Quality Management System, risk management and methodology of carrying out internal auditing. Dr.A.S M. Raja Senior Scientist & Management Representative and Mr. A.Arputharaj, Scientist co-ordinated this training programme.



Mr. Chilakwad Director, National Institute of Training and Standardisation (NITS, Delhi) giving lecture during ISO training



Events

Mera Gaon Mera Gaurav Activities

Awareness Programme

Two field visits to Anji and Morchapur villages in Wardha district were conducted on 22nd October, 2016 for raising awareness among farmers. Dr. M. S. Kairon, former Director, ICAR-CICR, Nagpur accompanied the team of scientists as a resource person. The team interacted with the farmers, identified their problems and suggested remedial measures to address their concerns. During field visits, occurrence of grey mildew (*Dahiya*) and leaf reddening diseases were noticed in the cotton fields, for which suitable remedial measures were suggested. CIRCOT technologies on value addition of cotton by-product were explained to farmers. Cotton samples from different fields were also collected for providing information on the quality of cotton produced by the farmers.



Awareness programme organized in Morchapur village on October 22, 2016



On-field interaction with farmers of Anji village on October 26, 2016

Swachha Bharat Abhiyaan

Swachhata Pakhwada was celebrated in the Institute during October 16-31, 2016 organizing series of events for generating awareness about the programme. Dr. P.G. Patil, Director administered the Oath, on 17th October, to all the staff to maintain cleanliness of their working places and residential premises. A cleanliness programme was conducted at the institute by forming human chain. In the series of cleanliness programmes, premises of staff quarters at Mahim was cleaned on 19th and Technology Transfer Division removed old files, unused cartridges, waste paper on Oct. 22, 2016. As a part of Swachh Bharat Abhiyan, yoga programme was organized on Oct. 25, 2016 in collaboration with “Ambika Kutir Yoga Kendra, Thane”, where all the staff members participated enthusiastically and practiced yoga. A special lecture on “Happy Thoughts” by Shri Manohar Gupta, Gyan Foundation, Mumbai was arranged on 29th October, 2016 and more than 125 staff members benefited.

The Swachhata Pakhwada was also observed at CIRCOT regional stations Coimbatore, Sirsa and GTC, Nagpur during 16 - 31 October by conducting cleanliness drives at respective centres. In total 14 cleanliness drives, 2 workshops were arranged and three villages were covered.



Director CIRCOT administering cleanliness oath on 17th October, 2016 during Swachhata Pakhwara.



Staff removing old discarded items during cleanliness programme (Oct. 17, 2016)



ICAR-CIRCOT staff practicing Yoga during Yoga Workshop (Oct. 29, 2016)



Shri Manohar Gupta, Gyan Foundation, Mumbai delivering “Happy Thoughts” lecture (Oct. 29, 2016)



Vigilance Awareness Week

With a focus on public participation on promoting integrity & eradicating corruption the Vigilance Awareness Week was observed in the Institute during Oct. 31 to Nov. 5, 2016. Vigilance pledge administered to all the staff members by the Dr. P.G. Patil, Director, CIRCOT on October 31. The awareness week was concluded with a speech by Shri Jai Kumar, Superintendent of Police, Central Bureau of Investigation, Mumbai on the topic “Public Participation on Promoting Integrity & Eradicating Corruption” on 5th November, 2016.



Director Dr. P. G. Patil administering the vigilance pledge to CIRCOT staff on October 31, 2016



A special lecture on “Public Participation on Promoting Integrity & Eradicating Corruption” by Shri Jai Kumar, Superintendent of Police, CBI, Mumbai on November 5, 2016

Visit

Visit of Dr. Trilochan Mohapatra, Secretary, DARE and DG, ICAR to GTC, Nagpur

Dr. Trilochan Mohapatra, Secretary, DARE and DG, ICAR, New Delhi visited the Ginning Training Centre, Nagpur on October 27, 2016. Dr. P.G. Patil, Director, CIRCOT appraised him about the training, research, extension activities and various technologies developed by the centre in the field of ginning and value addition to cotton stalks. Dr. S. K. Shukla, Officer-in-charge, GTC demonstrated the ginning, particle board manufacturing, fibre testing and pelleting facilities. DG, ICAR appreciated the role of GTC in upgradation and modernization of Indian ginning and pressing industries. He urged for transfer of the technologies from lab to field so that the benefit of technology can reach the common man.



Dr. Trilochan Mohapatra, Secretary, DARE and DG, ICAR in the Ginning Hall of GTC, Nagpur being briefed by Dr. P. G. Patil, Director



Dr. Trilochan Mohapatra, Secretary, DARE and DG, ICAR, keenly observing calibration cotton



Dr. Trilochan Mohapatra, Secretary, DARE and DG, ICAR inspecting the particle boards prepared from cotton stalks at GTC, Nagpur



Demonstration of cotton stalk briquettes and pellets to the DG, ICAR at GTC, Nagpur

Director's Visit

Director, ICAR-CIRCOT Dr. P. G. Patil visited GTC Nagpur on 27th October, 2016. He addressed the GTC staff and assured them that hard work and sincerity would be acknowledged and rewarded by institute & ICAR and he told that all possible administrative, technical and financial assistance would be provided to GTC for research and training activities. The Director also emphasized the need for substantial improvement in training, testing and research work and more devoted work is required to achieve the revenue generation targets set by ICAR.

Farmers Visit

A group of 10 farmers from different villages of Betul district in Madhya Pradesh visited GTC, Nagpur on 14th October, 2016 under Farmers' Tirth Kshetra Programme of Govt. of MP. Dr. S. K. Shukla demonstrated farmer friendly CIRCOT technologies and briefed about various training programmes conducted by CIRCOT for farmers. He also elucidated about the proper method for harvesting, collection and supply of cotton stalks and its utilization for preparation of value added products for improving the farm income.



A group of 10 farmers from Betul District in Madhya Pradesh visited GTC, Nagpur

Audit

The Audit Team from the Office of the Principal Director of Audit (Central), Mumbai conducted the **Local Audit** of the Institute for the financial year 2015-16 from October 3 – 14, 2016. Further, the **Internal Audit** of the Institute for the financial year 2015-16 was taken up from **October 20-29, 2016** by the audit team deputed by ICAR Headquarters, New Delhi.



IRC Meeting

The half yearly IRC meeting was held on October 17-18 to review the on-going institute projects and external funded projects. The meeting was chaired by Dr. P. G. Patil Director, CIRCOT. Progress of Fourteen Institute funded projects and ten externally funded projects were discussed and reviewed during the meeting. Three newly joined scientists namely Dr. Sharmila Suresh Patil (Agril. Process Engg.), Er. Archana Mahapatra (Agril. Process Engg.) and Mr. Manoj Kumar (Plant Biochemistry) were welcomed during the meeting. The meeting was attended by all the HOD's, Scientists and Assistant Chief Technical Officers.



Director Dr. P. G. Patil, reviewing the ongoing projects during half-yearly IRC meeting

Exhibitions

Participation in Exhibitions

1. Dr. Virendra Prasad attended a National Seminar organized under Swachh Bharat Mission on *"From Waste to Wealth: Key ICAR Technologies"* at KVK Shikohpur, Gurgaon, Haryana and exhibited the CIRCOT Technologies in the exhibition on October 27, 2016.
2. Er. P.S. Deshmukh attended an "All India meet on Cotton Trade" organised by Khandesh Gin & Press Association at Jalgaon, Maharashtra under the aegis of Maharashtra Cotton Ginners Association, Aurangabad on October 15, 2016 and participated in the exhibition arranged during the meet. He also delivered a talk on cotton by-products and potential industrial application during the meet.
3. GTC, Nagpur participated in an exhibition organised jointly by Department of Agriculture, Govt of Maharashtra and Dr. Punjabrao Deshmukh Krishi Vidyapeeth, Nagpur during October 10-12, 2016 at Nagpur on the occasion of Dhamma Chakra Parvaritan Divas. Farmer friendly CIRCOT technologies and products were displayed at the CIRCOT stall. A large number of farmers and delegates visited the stall and learned about various technologies, processes and value added products.



Shri Sudarshan Bhagat, Hon'ble Minister of State for Agriculture and Farmers Welfare being briefed about the products made by CIRCOT from cotton waste



Workshop Attended

1. Smt. M. P. Kamble, Senior Technical Assistant attended training cum awareness workshop on J-Gate@Cera organised by ICAR-DKMA at Navsari Agricultural University on 8th October 2016.
2. Dr. G. Krishna Prasad, Scientist, MPD and Dr. P. Jagajantha, Scientist, CBPD gave a presentation on 4th October 2016 about the training programme attended by them on "Developing Winning Proposals in Agricultural Research" organized by NAARM, Hyderabad.
3. Dr. C. Sundaramoorthy, Senior Scientist, TTD and Shri A. Arputharaj, Scientist, CBPD gave a presentation on 7th October 2016 about the of training programme attended on "Technology Valuation" organized by Venture Centre, CSIR-NCL, Pune



Personal

Appointment

Three new Scientists from 104th FOCARS batch of NAARM, Hyderabad joined ICAR-CIRCOT on 15th October, 2016

1. Dr. Sharmila Suresh Patil, Scientist (Agril. Process Engg.)
2. Er. Archana Mahapatra, Scientist (Agril. Process Engg.)
3. Mr. Manoj Kumar, Scientist (Plant Biochemistry)

Obituary

Shri John Robert, Skilled Support Staff (Retired), GTC, Nagpur passed away on 11th October, 2016



Publications

"Nanocellulose Based Polymer Composites for Applications in Food Packaging: Future Prospects and Challenges" by A. K. Bharimalla, S. P. Deshmukh, N. Vigneshwaran, P. G. Patil & V. Prasad. **Published online; Polymer-Plastics Technology and Engineering; 20 Oct 2016 (Impact Factor 1.511)**



Proposed activities for the year 2016-2017

Seminar/Conference/Industry Academia meet etc.

| Sl. No. | Name of the programme | Date |
|---------|--------------------------------------|-------------------|
| 1 | One day seminar on Textile finishing | December 17, 2016 |
| 2 | Technology Mela | February 10, 2017 |

Upcoming Events

Calendar of training cum-skill development programmes for the year 2016-17

| S.No. | Title of Training | Period | Fees (Rs) (excluding Service tax) |
|-------|--|---|--------------------------------------|
| 1 | Training on Absorbent Cotton Technology | Nov 21-23, 2016 | 10,000 |
| 2 | Characterization of Materials Using X-Ray Diffractometer (XRD) | Dec 19-21, 2016 | 30,000 |
| 3 | Advances in Microscopy | Jan 16-18, 2017 | 15,000 |
| 4 | Advances in Applications of Nanotechnology | Feb 6-10, 2017 | 25,000 |
| 5 | Spectroscopic and Chromatographic Techniques for Material Characterization | Feb 21-24, 2017 | 15,000 |
| 6 | Instrumental Evaluation of Clothing Comfort | Mar 6-10, 2017 | 50,000 |
| 7 | Quality Evaluation of Cotton | Nov 7-11, 2016 Jan 9-13, 2017 Feb 20-24, 2017 | 10,000 |
| 8 | Double Roller Ginning Technology & Basics of Cotton Grading, GTC, Nagpur | Oct 17-22, 2016 Nov 21-26, 2016 Dec 19-24, 2016 Jan 16-21, 2017 Feb 20-25, 2017 | 10,000 |

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