



CALIBRATION COTTON



DIFFERENTIAL SCANNING CALORIMETRY



INSTRON



COMPACT SPINNING

A Monthly Insight into the ICAR-CIRCOT

e - News Letter

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Director's Desk...

Annually 30 million tonnes of cotton stalks are produced in India. To educate the farmers and create awareness among the stakeholders on various industrial applications and related issues of cotton stalk a national seminar on "Value Addition of Cotton Stalks and Other Agro-Wastes for Rural Livelihood" will be organized at Ginning Training Centre on 6th June, 2015. Shri. Nitin Gadkari, Hon'ble Union Minister for Road Transport, Highways & Shipping has consented to be the Chief Guest of the inaugural session. The seminar will cover, logistics for harvesting and transportation of raw materials industry; machinery used for preparation of value-added products from cotton stalks and other agro-wastes; manufacturing, marketing and promotion of value-added products from cotton stalks and other agro-wastes; credit facilities and issues for establishment of plants for preparation of value-added products from cotton stalks & other agro-wastes.

The commercialization of ICAR-CIRCOT technologies gained momentum with the establishment of first Zonal Technology Management & Business Planning and Development Unit in 2008 in the institute. The initial success and experience gained under BPD needs to be further strengthened and expanded into a nation-wide network of agribusiness incubators. Agri-Business Incubators (ABIs) encourage, nurture and support technologists, scientists and innovative agribusiness ideas that turn agricultural innovations into successful commercial ventures. Such technology incubation centers help in initiating technology-led and knowledge-driven enterprises in agriculture. They also promote the growth of technology-based new enterprises and facilitate business among start-ups, entrepreneurs and technology developers and also improve their survival rate substantially.

P.G. Patil
Director



ICAR-CIRCOT, Mumbai



Technology Insight

Multi-Phase Electro-spinning setup for Production of Nano-fibre Mat

Multi-Phase electro-spinning machine was designed and fabricated to produce uniform nano fibre mat. The developed machine has multi-phase (4 Phase) arrangements with different nozzle geometry, angle change and automated linear motion stages and multiple parallel needles to increase the production by enhancing the electrical field distribution and even solution feeding to all the needles. Multi directional fibre feeding (N, E, S, and W) will give multilayer effect and it enhances the physical properties of the electro-spinning mat. Linear movement of the syringe can play role to produce uniform fibre mat upto dimension of 50 cm X 50 cm and angular movement will be helpful for vertical and horizontal nozzle geometry, fibre feeding and binding effect.



Fabricated electrospinning setup



Multi Axial arrangement

Meetings

(1) Participation in 43rd Joint AGRESCO 2015 at MPKV, Rahuri

The 43rd Joint AGRESCO 2015 of four State Agricultural Universities (SAUs) of Maharashtra was held at MPKV, Rahuri during 28-30th May, 2015 to discuss the achievements in research, education and extension activities. The AGRESCO was inaugurated by the Hon'ble Shri Ram Shinde, Minister of State for Agriculture and Guardian Minister, Ahmednagar District. New crop varieties, agricultural implements and crop production technology recommendations were released during the meeting.

Dr. N. Shanmugam, Senior Scientist & Head (In-charge) and V. G. Arude, Scientist participated in 43rd Joint AGRESCO 2015. V. G. Arude, Scientist made a presentation on achievements of institute in research and extension activities. He briefed about the technologies, processes and products developed and commercialised by ICAR-CIRCOT, Mumbai. He informed that CIRCOT is providing technology support to country's cotton breeding programme through AICRP of cotton and is acting as an interface between the cotton producers, breeders, textile processors and consumers. CIRCOT is working on complete value chain on cotton linking farmers to end users and markets. He highlighted the importance and significance of technologies developed by CIRCOT like CLOY gin, Lilliput gin, On farm pre-cleaner, Village level carding machine, Banana fibre extractor, Coconut defibreing and segregator machine and Flexi Check dam for watershed management. He informed that farmers can increase their income by proper utilisation of various cotton by products by making value added products like compost, briquettes, particle boards, biogas, surgical cotton etc.



Er. V. G. Arude, Presenting Research highlights at 43rd Joint AGRESO 2015

(2). Brainstorming Session Agri Business Incubator at ICAR-CIRCOT

A brainstorming session over the draft proposal prepared by the Business Planning Unit (BPD) was held on May 28 and 30, 2015 at Dr. Sundaram Committee Room. Dr. R.P. Kachru, former ADG (PE), ICAR was the Chairman. The meeting was attended by Dr. S. Sreenivasan and Dr. A.J. Shaikh, former Directors; Dr. K. M. Paralikar and Dr. S.G. Gayal, former Head, TTD and CBPD respectively; Dr. P.G. Patil, Director (Acting), Heads of Divisions and Scientists. The committee suggested modifications / recommendations especially on selecting technologies for focusing on commercialization, plan of work for the project period and the self sustainability of the unit for five years, etc. These were duly incorporated and the draft was finalized for sending to the Council in order to seek funds under the XIIth plan scheme of IP&TM unit, ICAR for establishing a Agri Business Incubator (ABI) at the institute during 2015-16 and 2016-17.



Dr. P.G. Patil, Director, CIRCOT welcoming Dr.R.P.Kachru



Dr. P.G. Patil, Director, CIRCOT welcoming Dr. S.G. Gayal



Dr.R.P.Kachru during Brainstorming Session on the Draft Proposal on Agri- Business Incubator at ICAR-CIRCOT

3. A meeting was held under the chairmanship of Dr. P. G. Patil, Director, CIRCOT on 6th May 2015 in Dr. V. Sundaram Committee Room to discuss topics for Advanced Agricultural Research & Training on “Skill Development of Engineers” primarily for producing employable PG students in specialized areas. There was also a discussion about the specialized training programme/Seminar for Handicapped & Less Privileged Section of our Society and training programme on fibre testing is recommended.

(4) Institute observed Anti-Terrorism Day on 21st May 2015

Dr. P. G. Patil, Director, CIRCOT administered “Anti-Terrorism Day” pledge to all the employee of ICAR-CIRCOT for promoting peace. The day is celebrated as 23rd Death Anniversary of former Prime Minister of India Rajiv Gandhi.

Dr. P.G. Patil, Director Chaired the meeting in the presence of Dr. V.S.Korikanthimath, former Director, ICAR Research Complex, Goa, and Dr. A.J. Shaikh, former Director, ICAR-CIRCOT. During the welcome address, Director highlighted the cleanliness work carried out in the recent past in the institute premises with the active participation of all the staff. Dr. Kundelia in his talk emphasized the need to keep the surroundings clean and pointed out that a clean environment brings the best out of one's creativity and asked all the staff to spend atleast a few minutes after reaching the office to clean their surroundings and their workplace. He also emphasized on the importance of proper nutrition and advantage of traditional diet over fast junk food.

Lectures

Cleanliness in Daily Life

Dr. H.K. Kundelia, visiting Physician at ICAR-CIRCOT, Mumbai gave a talk on Cleanliness in Daily Life on May 18, 2015 at the Jubilee Hall. As a part of Swachh Bharat Movement



Dr. Kundelia delivered the lecture on Cleanliness in Daily Life

Seminar/Conference/Workshop

Dr. (Smt.) Sujata Saxena, Principal Scientist, Dr. A. S. M. Raja, Senior Scientist, Shri R. S. Narkar, Chief Technical Officer, CBPD attended seminar on New Developments and Technology Trends in Lightfastness Testing, organized by M/s. Ametek Measurement & Calibration Technologies, Mumbai, on 8th May 2015.

assess the potential for ginning and spinning extra-long staple cotton grown in that area as a summer crop.

- (3) Dr. P. G. Patil, Director, CIRCOT visited Zenith Industrial Rubber Products Pvt. Ltd., Mumbai on 26th May 2015, to inspect the preparation of Rubber composites that are to be used in establishing ICAR-flexi check dam at 3 locations in pune region.

Intellectual Property

Patents

Process Patent for the invention "Zinc Chloride Pre-treatment of Microcrystalline for Preparation of Nanocellulose by Homogenization Process" was granted on 27th May 2015.

Patent Number: 266707

Patent Application Number: 1193/MUM/2010

Inventors: Dr. N. Vigneshwaran, Er. Ashok Kumar Bharimalla and Dr. Vilas Karande



Dr. P. G. Patil, Director, CIRCOT and Mr.M.F.Vohra, President, Zenith rubber, inspecting the rubber composites

Director's Visit

- (1) Dr. P. G. Patil, Director CIRCOT attended the ICAR Directors conference on 15th & 16th May 2015 held at NASC New Delhi. The function was inaugurated by Shri Mohanbhai Kundariya, Hon'ble Minister of State (Agriculture), Govt. of India
- (2) Dr. P. G. Patil, Director, CIRCOT visited National Research Centre (NRC) for Grapes, Pune on 22-24th May 2015 for work related to pension of retired ICAR staff (as CIRCOT is the Pension Authority for this region). He also visited the Babasaheb Deshmukh Co-operative Spinning Mill and Modern Ginning Plant at Aatpadi (M.S) and discussed with Mr. Pawar, Managing Director of the Mill to

Awards / Recognition

(1) ICAR-CIRCOT's representation in DST's Nano Mission

Director General, ICAR has nominated Dr. N. Vigneshwaran, Senior Scientist of this Institute as a member (ICAR representative) for the Inter-Ministerial Officials Working Group (IMOWG) of DST's National Mission on Nano Science and Technology (Nano Mission) till 31.03.2017. IMOWG is being constituted as an Expert Committee to support the Nano Mission Council (an apex level body) in carrying out the Nano Mission during this 12th five year plan period.

- (2) Er. Ashok Kumar Bharimalla, Senior Scientist, TTD, CIRCOT attended and delivered a talk on CIRCOT Technologies as a guest of honor for 'DestaTalk.com' website launching by Desta Global social enterprise, Mumbai on 23rd May 2015.



Er. A. K. Bharimalla, delivered the talk in the inaugural function of 'DestaTalk.com' website launching

Personnel

Promotion

- (1) Dr. (Smt.) Sujata Saxena, Sr. Scientist has been promoted to Principal Scientist w.e.f. 27-07-2011.
- (2) Shri R. K. Pallewad, Assistant promoted as Assistant Administrative Officer w.e.f. 30.05.2015
- (3) The following Technical Staff members probation was cleared

Technical Assistant	Shri A.R. Jadhav, Dr. Deepak Meena, Shri Krishna Bara, Shri D. J. Dhodia
Technician	Shri Umrao Meena, Shri Yogesh Nagpure, Shri Vijay Kumar Sutar

Retirement

Shri D.M. Chougule, Skilled Support Staff retired on 31-05-2015.

Transfer

- (i) Shri Parleswar, Assistant Administrative Officer, transferred to GTC, Nagpur from CIRCOT, Mumbai on 29th May, 2015.
- (ii) Shri Yogesh Pathare, Assistant Administrative Officer, joined CIRCOT, Mumbai from GTC, Nagpur on 30th May, 2015.

Accolades

Tereza T. D'Souza, Personal Assistant, Mechanical Processing Division, have participated in the First National Mercantile/Corporate Masters Track & Field Championship - 2015 held on 8-10th May, 2015 at University Stadium, Marine Lines, Mumbai. She won the following awards

- (i) Walking Race – Second Place
- (ii) 4 X 100 Relay – Second Place



Tereza T. D'souza received awards from Shri Arthur Fernandes, Executive Committee Member

Upcoming Events

ICAR short course on 'Fermentation Technology for value addition to cotton by-product and biomass' scheduled on 7-16th, September, 2015.



ICAR Short Course On

Fermentation Technology for value-addition to cotton by-products and biomass



September 07-16, 2015

Organized by
ICAR-Central Institute for Research on Cotton Technology (CIRCOT),
(Indian Council of Agricultural Research)
 Adenwala Road, Matunga,
 Mumbai – 400 019, Maharashtra, India

Sponsored by
Indian Council of Agricultural Research
 New Delhi 110 012 (INDIA)

Introduction

Fermentation is the term derived from latin word “fervere” which means “to boil”, describing the bubble like appearance produced during the anaerobic fermentation of sugars by yeast. Fermentation is an age old process which was primarily employed for preservation of fruits, vegetables, grains etc. and to improve its nutritional property. The fermentation process is also used for the production of enzymes, antibiotics and other bio-active compounds for medical and industrial applications. Now-a-days, the term fermentation is broadly used and defined as the production of food, chemical and fuel by micro-organisms for the welfare of human beings.

The annual production of agro-wastes in India is estimated to be 700 million tonnes. These wastes are other-wise called ligno-cellulosic wastes which mainly contains cellulose, hemicellulose and lignin in their chemical composition. These agro-wastes are viable substrate for fermentation process since they are renewable, produced annually and have application for bioconversion into useful products such as food, fuel and fine chemicals. In cotton, the cottonseed and cotton stalks are the two major by-products. In India, about 12 and 40 million tonnes of cottonseed and cotton stalks respectively are produced annually. The cottonseed produced in the country is mostly extracted for oil. The other products being produced during the processing are linters, hulls and meal. The value-addition to cottonseed by fermentation technology makes cottonseed processing more economical and viable. The applications of fermentation process in value-addition of cottonseed are efficient linter and oil recovery, degossypolization and nutritive quality improvement of cottonseed protein, industrial enzymes and peptone from cottonseed meal and bio-enrichment of cottonseed hulls. Except a small proportion has been used for domestic fuel, mostly the cotton stalks is burnt in the field itself.

Eligibility

Applicant should be a post-graduate in any discipline of agriculture or related basic science and working as Scientist in ICAR institutes or as Assistant Professor and above in any of SAUs/Central Agricultural University/Deemed University/General University with agriculture faculty. The total number of participants will be restricted to 25. Selection will be primarily based on the above said eligibility conditions and first-come-first-serve basis.

How to apply

Eligible and interested candidates can apply in the enclosed proforma or apply online. For online application, register at <http://www.lasri.res.in/cbp/> and fill up the form, submit and take a printout and send the same duly forwarded by the competent authority to the Course Director on or before August 10, 2015. A non-refundable registration fee of Rs. 50/- (Rupees fifty only) in the form of an Indian Postal Order/Demand Draft drawn in favour of "Director, CIRCOT" payable at Mumbai should be sent along with the application form.

Boarding & Lodging

Participants will be paid travel fare of to and fro journey by rail or bus as per their entitlement, restricted to the maximum of AC II tier. TA will be paid on production of valid tickets. Free boarding will be provided during this training programme. Free lodging shall be provided on first-come-first-serve basis. Since the accommodation is very limited at this Institute, participants are requested to arrange for their stay, if possible. Cash allowance in lieu of boarding & lodging are not permitted.

The application of fermentation process in cotton stalks utilization finds industrial application, restores soil health, and avoids burning of cotton stalks in the field. The industrial micro-organisms such as yeast and filamentous fungi employed in fermentation process produces complex of enzymes and other metabolites that aids in conversion of biomass into useful products. The possible applications in cotton stalks utilization are production of high value compost, bio-ethanol, mushroom etc.

Objectives

The major objectives of the short course are

- ❖ To acquaint participants with the basics of fermentation technology
- ❖ To impart training on role of fermentation technology in biomass utilization
- ❖ To demonstrate the application of fermentation technology for value-addition to cottonseed and cotton stalks

Curriculum

A series of lectures and practical demonstrations will cover the basics of fermentation technology, role of fermentation technology in biomass utilization and its application in value-addition to cottonseed and cotton stalks. The Institute is well equipped with instruments for cultivation of micro-organisms (Laminar Air flow chamber, Incubator shaker and fermenter) and characterization (Automatic Nitrogen Analyzer, Fibre Analyzer, UV-Vis spectrophotometer, Fluorescent Microscope and Scanning Electron Microscope).

Application form for participation

ICAR short course on "Fermentation technology for value-addition to cotton by-products and biomass"
(At Central Institute for Research on Cotton Technology, Mumbai)

September 7-16, 2015

1. Full name (in block letters) :
2. Designation :
3. Present employer and address :
4. Address to which reply should be sent (including email, mobile and fax) :
5. Permanent Address :
6. Date of Birth :
7. Sex (M/F) :
8. Teaching/research/professional experience (mention post held during last five years and number of publications in refereed journals) :
9. Marital status: (Married/Unmarried) :
10. Mention if you have participated in any research seminar, Summer/Winter school/Short course :
11. Whether accommodation is required: Yes/No
12. Academic record

Examination passed	Subject Main/ Subsidiary	Year of passing	Class/Ranks/ Distinctions etc.	University/ Institution	Other information
Bachelor's					
Master's					
Ph.D					
Others					

Date _____
Place _____ Signature of the applicant

13. Recommendations of forwarding Institute

Certificate

It is certified that the information furnished above has been verified and found to be correct.

Signature _____
Director/Head of the organization

Date _____

Institution seal _____

About Mumbai

Mumbai, Capital city of Maharashtra known as Bombay until 1995, is a great port city, situated on the west coast of the Indian peninsula. The seven islands, that constituted Mumbai were home to communities of fishing colonies. Mumbai is the financial, commercial & entertainment capital of India. Important tourists places are Gateway of India, Elephanta Caves, Queen's Necklace, Jehangir Art Gallery, CST railway station, Sea link bridge, Mount Mary Church, Hanging garden, Siddhivinayak temple, Haji Ali etc.

How to reach CIRCOT, Mumbai

Distance from Airport (Domestic) : 10-12 km
Railway station (Dadar) : 2 km
Land mark : Five Gardens

Weather

September coincides with the end of monsoon. The weather will be pleasant with mean daily temperature approximately 25° C.

Important dates to remember

Last date for receipt of nomination : Aug 10, 2015
Intimation to selected participants : Aug 14, 2015
Course commencement : Sept 07, 2015

Organizers

Director, CIRCOT : Dr. P.G. Patil
Course Director : Dr. V. Mageshwaran, Scientist
Course co-ordinators : Dr. S. Saxena, Pr. Scientist & I/C CBPD
: Dr. S. V. Ghadge, Sr. Scientist & I/C TTD
: Er. A.K. Bharimalla, Sr. Scientist

Address for correspondence

Er. A.K. Bharimalla
Sr. Scientist & Course co-ordinator, TTD
ICAR-Central Institute for Research on Cotton Technology
Adenwala Road, Matunga (E), Mumbai – 400 019
Email: bpd.circot@gmail.com
Ph: 022-24127273, Fax: 022-24130835, Cell: 9702878249

Updates are available at
www.circot.res.in





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