

**Proceedings of the 29th Meeting of the
RESEARCH ADVISORY COMMITTEE (RAC) of
ICAR-CIRCOT, Mumbai**

Held in Hybrid mode on 19th & 20th April 2023

Chairman and Members of RAC (2023-2026)

Dr. S. M. Ilyas, Chairman

Dr. Pitam Chandra, Member

Dr. S. Sreenivasan, Member

Prof. (Dr.) Gopal P. Agarwal, Member

Dr. R. V. Adivarekar, Member

Dr. S. P. Borkar, Member

Dr. K. Narsaiah, Member

Dr. S. K. Shukla, Member

Dr. V. G. Arude, Member Secretary



**ICAR-Central Institute for Research on Cotton Technology Adenwala
Road, Matunga, Mumbai-400019, M.S., India**

April 2023

CONTENTS

29th RAC Meeting of CIRCOT (19th & 20th April 2023)

1. Visit of RAC to Research Laboratories/Divisions	3
2. Welcome to Chairman and Members RAC	4
3. Presentation of Major Research Achievements of the Institute	4
4. Release of Publication	4
5. Opening Remarks by Chairman and Members	4
6. Presentation and Discussion on ATR on Proceedings of 28th RAC	6
7. Presentation of Progress of Research Work	7
8. Discussion on Progress of Work and Recommendations by RAC	7
9. Concluding Remarks by Chairman	10
10. Lecture on the occasion of RAC	10
11. Vote of Thanks	10
Annexure-1 (List of Participants)	11
Annexure-2 (Agenda)	15
Annexure-3 (Photo Gallery of RAC Meeting)	16

Proceedings of the 29th Research Advisory Committee (RAC) Meeting held in Hybrid mode on 19th & 20th April 2023

The 29th (Twenty Ninth) meeting of the Research Advisory Committee (RAC) of ICAR-CIRCOT, Mumbai was held in Hybrid mode on 19th & 20th April 2023. **Dr. S. M. Ilyas**, Former Vice Chancellor, Narendra Dev University of Agriculture & Technology, Faizabad & Former Director, ICAR-NAARM, Hyderabad and Chairman, RAC presided over the meeting and following members were present.

Dr. Pitam Chandra, Former Director, ICAR-CIAE, Bhopal (Member)

Dr. S. Sreenivasan, Former Director, ICAR-CIRCOT, Mumbai (Member)

Prof (Dr.) Gopal P. Agarwal, Former Prof., IIT, Delhi (Member)

Dr. R. V. Adivarekar, Prof., ICT, Mumbai (Member)

Dr. S. P. Borkar, Prof., VJTI, Mumbai (Member)

Dr. K. Narsaiah, ADG (PE), Agril. Engg. Division, ICAR, New Delhi (Member)

Dr. S. K. Shukla, Director, ICAR-IRCOT, Mumbai (Member)

Dr. V. G. Arude, Sr. Scientist, ICAR-CIRCOT, Mumbai (Member Secretary)

Dr. V. G. Arude, RAC Member Secretary greeted the Chairman and all the Hon'ble Members of Committee and other participants.

All the RAC Members attended the Meeting physically except Chairman, who participated virtually. Dr. Pitam Chandra could not attend on second day due to other prior engagements. All Head of Divisions and scientists of the Institute attended it physically. Scientists at GTC, Nagpur attended it virtually.

The List of Participants is given in Annexure-1

The Meeting proceeded as per the agenda items (Annexure-2)

The Photo Gallery of RAC Meeting (Annexure -3)

1. Visit of RAC Members to various Research Labs/Divisions

Members of the RAC visited various research laboratories and research divisions and were briefed about the research facilities available at the Institute. They also interacted with the scientists during the laboratory visits. Visit was arranged to different labs viz. Fibre Testing Lab, Yarn Testing Lab, Trash & Contamination Lab, Mechanical Processing Division (MPD), Nanocellulose Pilot Plant, Advanced National Laboratory for Material Characterization, ICP Lab, Kawabata Lab, AFM/SEM Lab, Microbiology Lab and Chemical Processing Lab.

2. Welcome to Chairman and Members of RAC

At the outset, **Dr. S. K. Shukla**, Director, ICAR-CIRCOT welcomed with a bouquet of flowers; Chairman and Members of newly constituted RAC for the 29th Meeting; the first meeting of the Committee with the tenure of three years (2023-26).

3. Presentation of Major Research Achievements of the Institute

Dr. S. K. Shukla, Director, highlighted technologies developed, commercialized, skill development and commercial services undertaken and revenue generated by the Institute. He mentioned about the impact of the technologies developed by the institute. He briefed about the future challenges in the research on post-harvest processing of cotton and priorities of Institute in the coming years. He mentioned about the depleting scientific, technical and administrative manpower of the Institute. He also informed RAC that CIRCOT will be celebrating Centenary in 2024. He, thereafter requested Members for their valuable comments and suggestions on the progress of research work and guidance for formulating future research projects and Institute activities to be taken up based on the national and international current scenario and future prospects in cotton post-harvest processing sector.

4. Release of Publication

A number of leaflets on technologies developed and training programmes organized by CIRCOT were also released on this occasion. The details are as follows;

Technologies (Products/Process):

- High Performance Cotton based wound dressing material
- Engineered cotton fabric face mask
- Nano fibre cartridge for filtration application
- Augmented process for production bio-enriched compost from Cotton micro-dust
- Utilization of Cotton Stalk and other crop residue for Energy Generation

Annual Report:

- Annual Report of CRP on Natural Fibres

Training Leaflets:

- Training Programme on 'Post-harvest processing and value addition to its by-produce'
- Skill development programme on 'Double Roller Ginning Technology and Basics of Cotton Grading'

E-News Letter:

- UDDAN: R-ABI E-Newsletter (July-December 2022)

5. Opening Remarks by Chairman and Members

Dr. Pitam Chandra, in his opening remarks stated that lot of acceleration in research and other extension activities was going on at the institute. He stressed that research in the area of nanotechnology should explore beyond the present work addressing the emerging issues. He pointed out that good work was being done in cotton biomass utilization but focus should be on to improve the value addition to make high value end products. Efforts should be made to utilize 100 % of the harvested cotton crop including its by-products, thus, there will be no environmental load. He suggested to develop engineered products/material from cotton crop residues in line with the circular economy. He further emphasized the need to address the environmental concerns, multiply farmer's income and create employment opportunities through research activities.

Dr. S. Sreenivasan congratulated Institute Staff for upcoming Centenary Year and for achieving level of excellence in research. He expressed that lot of opportunities existed for research especially in the area of biomass utilization, secondary agriculture and in cotton value chain as a whole. He emphasized that apart from utilization of biomass in thermal power plant, there is need to explore use of agro residues to convert it into fuel cells and bio-hydrogen. He opined that the scientists should take up more research projects related to mandated core areas related to cotton.

Prof. Gopal P. Agarwal expressed his happiness about this opportunity to be a part of RAC. He stated that Institute was doing very well in improving the cotton quality. He suggested to involve young minds in cotton technology research and further suggested to integrate some academic programme fitting to the Institute Mandate. He stressed on need to quantify the things instead of qualitative representations. He pointed out that the Institute should utilize high end equipment available to the maximum possible extent.

Dr. R. V. Adivarkar, in his opening remarks made a mention of the state-of-the-art equipment and research facilities available at the Institute. He suggested to focus on development of standardization techniques. He emphasized to explore the areas of recycling of textile products and applications in technical textiles. He pointed out that environmental concerns due to textile wet processing need considerable attention.

Dr. S. P. Borkar stated that few other organizations are working in more or less similar area of research work carried out at CIRCOT except in core area of pre-ginning and ginning which is a challenging area for research. He emphasized the need for integration of artificial intelligence in research and technology development.

Dr. K. Narsaiah appreciated the Institute for their excellent work and also suggested to reorient its research activities to meet the needs of the stakeholders. He suggested to focus on development of high value products out of cotton and its by-products and develop handheld instruments for quality testing of cotton. Calibration cotton developed by the institute should be exported and earn foreign exchange. More revenue generation should come from technology licensing and high value products developed by the Institute. Regional Units should be made vibrant by increasing research activities instead of just acting as service provider. Initially, research activities in the regional unit's viz. Coimbatore, Sirsa and Surat should be increased. More number of cotton samples for testing should come from Industry. He pointed out the need for third party impact assessment of research achievements.

Dr. S. M. Ilyas, Chairman, in his opening remarks expressed his happiness on the progress made by the Institute and congratulated all the staff for upcoming Centenary Year. He mentioned that CIRCOT is a unique Institute in ICAR; which is catering to the needs of the farmers, traders and industry. He suggested to strengthen the CIRCOT Regional Units and decentralize some of the research activities to these units. The number

of research projects should be limited with more focus on in-depth study. He emphasized that more than 60% research should be basic and strategic. He stressed on apportioning of time and resources for research according to their importance and priorities.

6. Presentation of Action Taken Report (ATR) on Proceedings of 28th RAC

Dr. V. G. Arude, Member Secretary RAC; presented the Action Taken Report (ATR) on the Proceedings of 28th RAC which was held on 9th & 10th May 2022. The ATR was accepted by the RAC with suggestions on some of the recommendations.

7. Presentation of the Progress of Research Work for the year 2022-23

The progress of research activities carried out in the institute under different core areas of research during the period 2022-23 was presented by the respective Heads/ /Coordinator, as per details given below:

Core Area-I: Pre-ginning and Ginning:

Dr. V. G. Arude, Senior Scientist, Mechanical Processing Division (MPD)

Core Area- II: Mechanical Processing, Technical Textiles and Composites:

Dr. N. Shnamugam, Principal Scientist & Head (In-charge), Mechanical Processing Division (MPD)

Core Area –III: Characterization-Cotton and other Natural Fibres, Yarns and Textiles:

Dr. A. S. M. Raja, Principal Scientist, & Head (In-charge), Quality Evaluation and Improvement Division (QEID)

Core Area –IV Chemical and Biochemical Processing & Biomass and By-product Utilization:

Dr. Sujata Saxena, Principal Scientist & Head (In-charge), Chemical and Biochemical Processing Division (CBPD)

Core Area –V: Entrepreneurship and Human Resource Development:

Dr. D. M. Kadam, Principal Scientist & Head (In-charge), Transfer of Technology Division (TTD)

Consortia Research Project (CRP) on Natural Fibres:

Dr. A.S.M. Raja, Principal Scientist & Coordinator, CRP on Natural Fibres

Externally Funded projects: Presentation by respective project PI's/Co-PI's

1. Agri-Business Incubation (ABI) Centre at ICAR-CIRCOT, Mumbai (NAIF):

Dr. C. Sundarmoorthy, Principal Scientist

2. Remunerative Approaches for Agriculture and Allied Sectors Rejuvenation (RAFTAAR) Agri Business Incubation Centre (R-ABI) (DAC&FW):

Dr. C. Sundarmoorthy, Principal Scientist

3. Development of Indigenous Grinding system for Production of Ultra Fine Sized Fertilizers (DST):

Dr. Manoj Mahawar, Scientist

4. Design and Development of Pilot Plant for Extraction of Protein from Deoiled Cotton Cake and Value Addition (By-Products Utilization) (DST/TDP):

Dr. D. M. Kadam, Principal Scientist

5. Characterization and utilization of paddy straw and other agro residues for conversion into pellets for co-firing in thermal power plants (TPP) (National Biomass Mission) National Biomass Mission
Dr. Sujata Saxena, Principal Scientist
6. Development of Smart Foods, Bio-Composites, Green Packaging & Bio Energy from Agri. residues (NASF) NASF
Dr. A. S. M. Raja, Principal Scientist
7. Consultancy Project: Providing Professional Services for Development of Cotton Value Chain in Maharashtra for Project Implementation Unit (PIU) - Agriculture under the project entitled 'Hon. Balasaheb Thackeray Agribusiness and Rural Transformation (SMART Cotton Project):
Dr. V. G. Arude, Senior Scientist

8. Discussion on Progress of Research Recommendations by RAC

Committee discussed thoroughly and deliberated on the work being done and provided valuable inputs and directions for future course of research and institute developmental activities. The committee suggested that Institute Research Committee Meeting (IRC) should precede RAC Meeting. Further the approved RPP-III of the completed projects during the previous year shall be presented first in the RAC Meeting followed by the progress of the ongoing projects.

The comments of RAC specific to certain projects are summarised below:

Core Area I:

1. Project MP-93: Device for seed cotton ginning percentage measurement

Cotton cultivars with very low and very high ginning percentage should be taken to understand the differences in insertion losses in wavelengths with seed cotton and lint. The effect of different microwave parameters other than microwave frequency should also be taken into account. RAC observed that none of the objectives are completed even after three years of project period.

2. Project MP-98: Development of a seed cotton trash content analyser based on pneumatic fractionation methodology

Evaluate the developed trash analyser with cotton harvested using different methods of harvesting and with different levels and nature of trash

3. Project MP-100: Optimization trial of the ICAR-CIRCOT Kawadi Opener at Factory Level

Popularize the developed technology of Kawdi Opener

Core Area-II:

4. Project MP-95: Evaluation of spinnability and formulation of guidelines for spinning of recycled fibre from fabric waste and develop value added products Value added products to be developed using recovered/recycled fibres

5. Project MP-96: Development of cellulosic nanofibre based micronutrient delivery system for urban farming

Developed electro-spun mat may be tried for multiple fertilisers and crops other than cotton in protected cultivation mode

6. Project II-04: Development of eco-friendly fruit protection bags for quality enhancement

Consult packaging institutes for development of fruit protection bags. Developed bags may be tried for multiple fruits in which fungal attack is a major problem.

7. Project II-05: Development of bio nanocomposite films using extrusion process

Bio-nanocomposite films developed using optimized formulation are good. Studies on application part may be conducted with current properties of the film.

Core Area –III:

8. Project A1: All India Coordinated Research Project on Cotton (Quality Research)

While screening varieties for release, ginning percentage (GP) should also be considered along with yield and other parameters.

9. Project QE-111: Development of Electrically conductive cotton materials

Developed conductive fabric should be tested for radio frequency shielding application. Patent should be applied.

10. Project QE-113: Development of AI based prediction model for yarn quality characteristics

More emphasis should be given to RKM value than HSC, as RKM is more important for industry.

Core Area-IV:

11. Project CH-99: Development of a healthier cottonseed-based cooking oil by blending with other vegetable oils

Specify criterion for selection of oils in the study. Include Soybean and Rice bran oil in the present study. Consult and take inputs from Dr. Manju Bala, Principal Scientist from ICAR-CIPHET, Ludhiana.

12. Project QE-102: Isolation of Gossypol from cottonseed and its evaluation as a botanical fungicide

Binders may also be tried before doing encapsulation.

13. Project II-03: Development and evaluation of non-steroidal anti-inflammatory drugs (NSAIDs) loaded nanocellulosic hydrogels

Conduct in-vitro release behavioural study of developed nanocellulose based drug. RPP-III should clearly mention the benefits, release behaviour and health benefits offered by developed hydrogel in comparison with similar kind of product already existing in the market. The project output may also be considered from IPR angle.

14. Project II-06: Efficacy evaluation of ICAR-CIRCOT Nano-Sulphur as fertilizer formulation for different field crops

Isolate the effect of nano-sulphur application by properly designing the field experiment

Core Area-IV:

15. Project TT-12: Impact Assessment of CIRCOT technologies

Find out the reasons behind reduced sale of CIRCOT Calibration Cotton over the years and come up with corrective actions to increase the sale of calibration cotton.

16. Project TT-13: Study on Utilization of Green Cotton Biomass for Production of Silage as Livestock Feed

Compare protein content of green cotton biomass silage with maize silage

Externally Funded Projects:

17. Project 40413160009 (NASF): Agri-Business Incubation Centre at ICAR-CIRCOT, Mumbai

Outcome and the present status of the graduated incubates should be specified and presented in RAC. Explore the possibility of revenue generation in the form of royalty from the graduated incubates and develop terms of reference in this regard.

18. Project R-ABI (1011105) (DAC&FW): Remunerative Approaches for Agriculture and Allied Sectors Rejuvenation (RAFTAAR) Agri Business Incubation Centre

Specify the percentage of cotton related start-ups funded under R-ABI. Indicate sector wise start-ups funded under R-ABI in form of Pie-diagram.

19. Project 40413210004 (DST/TDP): Design and Development of Pilot Plant for Extraction of Protein from Deoiled Cotton Cake and Value Addition (By-Products Utilization)

Determine percentage of gossypol present in the final product (cookies)

Recommendations:

1. Ginning percentage (GP) should also be considered along with yield and other parameters during cotton variety identification for release. This has to be highlighted by ADG at ICAR level and Director at Cotton Variety Identification Committee level.
2. Initiate research to develop hand-held equipment for measurement of cotton quality by non-destructive methods at field/mandi level.
3. CIRCOT to produce Extra-long Staple (ELS) Calibration cotton for calibration of HVI machine
4. Explore use of cotton stalk biomass to convert it into fuel cells and bio-hydrogen.
5. Prepare status paper on cotton stalk biomass highlighting quantitatively production, fractions of biomass being fully value added indicating the utilization pattern. The status paper should clearly bring out the cotton by-products that still remain inefficiently utilized or totally unutilized.
6. Formulate policy for using high end equipment for outside users.
7. CIRCOT is mandated to work on post-harvest technology on cotton hence more focused research should be done on mandated areas.

9. Concluding Remarks:

Chairman expressed his happiness over the high quality research being conducted by the Institute. He thanked the Members for their active participation in the deliberations. The Institute, being unique in its Mandate and has given valuable technologies and equipment during last few decades and, therefore, should continue

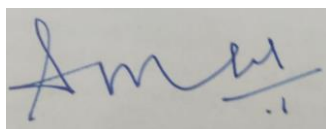
with added vigour. In this, the collaboration with other Institutes, especially ICAR-NINFET and other Institutes needed special attention. He further said that closer liaison and collaboration with stakeholders, especially industry be pursued with more vigour. He expressed hope that the recommendation of RAC will be implemented so as to give impetus to the activities with added vision. He thanked the Director and Staff for conducting research and extension activities with sustained efforts.

10. Lecture on the occasion of RAC

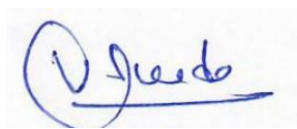
On the occasion of 29th RAC, a lecture was organized on the topic ‘Lignocellulosic Biomass Conversion to Ethanol - the Current Status’ by Prof (Dr.). Gopal P. Agarwal, Former Professor, Indian Institute of Technology (IIT), New Delhi All RAC Members, scientists and technical officers attended the lecture.

11. Vote of Thanks

The Meeting ended with a formal vote of thanks by Dr. V. G. Arude, Senior Scientist and Member Secretary, RAC.



(Dr. S. M. Ilyas)
Chairman, RAC



(Dr. V. G. Arude)
Member Secretary, RAC

Annexure – 1

List of Participants in RAC Meeting

ICAR-CENTRAL INSTITUTE FOR RESEARCH ON COTTON TECHNOLOGY

Adenwala Road, Matunga, Mumbai 400 019


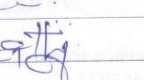

29th RESEARCH ADVISORY COMMITTEE MEETING

Venue: Conference Room

Date: 19th April 2023

Attendance Sheet

Sr. No.	Name	Signature
1.	Dr. S. M. Ilyas	ONLINE
2.	Prof Gopal P. Agarwal	
3.	Dr. S. P. Borkar	
4.	Dr. S. Sreenivasan	
5.	Dr. Pitam Chandra	
6.	Dr. Ravindra V. Adivarekar	
7.	Dr. K. Narsaiah	
8.	Dr. S. K. Shukla	
9.	Dr. V G. Arude	
10.	Dr. Sujata Saxena	
11.	Dr. V. Shanmugam	
12.	Dr. G. Krishna Prasad	
13.	Dr. P. Jagayanantha	
14.	Dr. T. Senthilkumar	
15.	डॉ. शेषराव काडवकर	
16.	डॉ. अश्विनी उकरे	
17.	डॉ. मनोज कुमार जेठार	
18.	Dr. Manoj Kumar	
19.	Dr. Kanika Sharma	
20.	Dr. Sharmila Patil	

21.	Dr. Kirsi Salgaonkar	<u>Salgaonkar</u> 
22.	Dr. Jyoti Dhakane-Lad	
23.	Dr. N. Vigneshwaran	Dr. N. Vigneshwaran
24.	Dr. Sundaramoorthy, C	
25.	Dr. D. M. Kadam	
ONLINE ATTENDEES		
26.	Dr. A. Aspatharaj	ONLINE
27.	Dr. G. T. V. Prabhu	ONLINE
28.	Dr. K. Pandeyan	ONLINE
29.	Dr. S. V. Ghadge	ONLINE
30.	Dr. Varsha Satankar	ONLINE

ICAR-CENTRAL INSTITUTE FOR RESEARCH ON COTTON TECHNOLOGY
Adenwala Road, Matunga, Mumbai 400 019

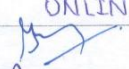
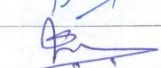

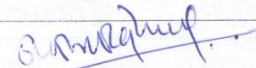
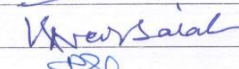
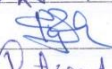
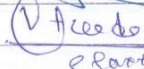
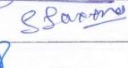

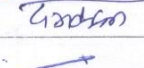

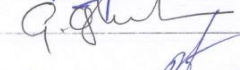
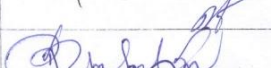

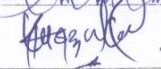
29th RESEARCH ADVISORY COMMITTEE MEETING

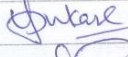
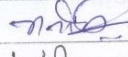
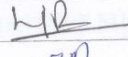
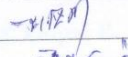
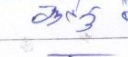
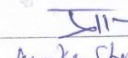
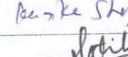


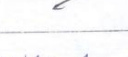

Lecture on the occasion of RAC meeting by Prof. Gopal P. Agarwal, RAC Member

Venue: Conference Room

Date: 20th April 2023

Attendance Sheet

Sr. No.	Name	Signature
1	Dr. S. M. Ilyas	ONLINE
2	Prof Gopal P. Agarwal	
3	Dr. S. P. Borkar	
4	Dr. S. Sreenivasan	
5	Dr. Pitam Chandra	-
6	Dr. Ravindra V. Adivarekar	
7	Dr. K. Narsaiah	
8	Dr. S. K. Shukla	
9	Dr. V G. Arude	
10	Dr. S. Saxena	
11	Dr. Shamugan	
12	Dr. D M Kadam	
13	Dr. A. S. m. Raja	
14	Dr. G. Krishna Prasad	
15	Dr. P. Jagajnantha	
16	Dr. T. Senthilkumar	
17	डा. श्यामराज काडवकर	

18	Dr. Ajinath Lukase	
19.	डा. रमेश कुमार चव्हाण	
20.	डा. मनोज कुमारे	
21	भारती चव्हाण	
22	अनंत बेजरी	
23	जायती शेट्टी	
24	Kamika Sharma	
25.	Dr. Sharmila Patil	
26.	Dr. Kirti Jalgaonkar	
27.	Dr. Jyoti Dhakane-Lad	
28	Dr. N. Vigneshwara	Dr. Vigneshwara
29	Dr. Sridaramoorthy, C	
30.	Dr. K. Pandiyar	ONLINE
31	Dr. Varsha Satankar	ONLINE
32	Dr. S.V. Ghadge	ONLINE
33	Dr. G.T.V. Prabhu	ONLINE

Annexure-2

ICAR-CENTRAL INSTITUTE FOR RESEARCH ON COTTON TECHNOLOGY

Adenwala Road, Matunga, Mumbai 400 019

TWENTY NINETH (29th) RESEARCH ADVISORY COMMITTEE MEETING 19 & 20th April 2023 PROGRAMME SCHEDULE

<u>Day 1: 19th April 2023</u>	
Time	Agenda item
9.30 am	<ul style="list-style-type: none">• Visit of RAC members to Various Research labs/Divisions
11.30 am	<ul style="list-style-type: none">• ICAR Song
11.35 am	<ul style="list-style-type: none">• Welcome address and briefing of major achievements and activities of the institute Dr. S. K. Shukla, Director
11.45 am	<ul style="list-style-type: none">• Release of Publications
11.50 am	<ul style="list-style-type: none">• Opening Remarks by RAC Members and Chairman
12.05 pm	<ul style="list-style-type: none">• Action Taken Report on Proceeding of 28th RAC meeting held on June 9- 10th May, 2022 Dr. V. G. Arude, Member Secretary, RAC
Presentation of Research Achievements	
12.30 pm	<ul style="list-style-type: none">• Core Area- I: Pre-ginning and Ginning: Dr. V. G. Arude, Senior Scientist, Mechanical Processing Division (MPD)
	<ul style="list-style-type: none">• Core Area-II: Mechanical Processing, Technical Textiles and Composites: Dr. N. Shanmugum, Principal Scientist & Head (I/c), Mechanical Processing Division (MPD).
1.30 pm	Lunch Break
2.15 pm	<ul style="list-style-type: none">• Core Area- III: Characterisation of Cotton and other Natural Fibres, Yarns and Textiles: Dr. A. S. M. Raja, Principal Scientist & Head (I/c), Quality Evaluation and Improvement Division (QEID)
	<ul style="list-style-type: none">• Core Area- IV: Chemical and Biochemical Processing Biomass & By-product Utilisation: Dr. Sujata Saxena, Principal Scientist & Head (I/c), Chemical and Biochemical Processing Division (CBPD)
	<ul style="list-style-type: none">• Core Area- V: Entrepreneurship and Human Resource Development: Dr. D. M. Kadam, Principal Scientist & Head (I/c), Technology Transfer Division (TTD)
3.45 pm	Tea break
4.00 pm	<ul style="list-style-type: none">• Consortia Research Platform on Natural Fibre: Dr. A. S. M. Raja, Principal Scientist & Co-ordinator, CRP on Natural Fibres
4.20 pm	<ul style="list-style-type: none">• Externally Funded projects: Presentation by Respective project PI's and Co-PIs: ABI (40413160009) : Dr. A. K Bharimalla, Senior Scientist RABI (1011105) : Dr. A. K Bharimalla, Senior Scientist DST (TPN 77501) : Dr. A. K Bharimalla, Senior Scientist DST/TDP Project (40413210004) : Dr. D. M. Kadam, Principal Scientist National Biomass Mission: Dr. Sujata Saxena, Principal Scientist NASF: Dr. A. Arputharaj, Senior Scientist SMART Project: Dr. V. G. Arude, Senior Scientist
<u>Day 2: 20th April 2023</u>	
10.00 am	<ul style="list-style-type: none">• Discussion and remarks of RAC Members and Chairman on ICAR-CIRCOT's progress of work and guidance on the future course of research work and institute activities to be taken up by the institute
11.30 am	<ul style="list-style-type: none">• Finalising Recommendations and Concluding Remarks by RAC Members & Chairman
12.10 pm	<ul style="list-style-type: none">• Lecture on the occasion of RAC on the topic "Lignocellulosic Biomass Conversion to Ethanol - the Current Status' by Prof (Dr). Gopal P. Agarwal, Former Professor, Indian Institute of Technology (IIT), New Delhi
1.00 pm	<ul style="list-style-type: none">• Vote of Thanks: Dr. V. G. Arude, Member Secretary RAC.
1.15 pm	<ul style="list-style-type: none">• Lunch: End of the RAC meeting

Dr. V. G. Arude, Member Secretary, RAC

Annexure – 3
PHOTO-GALLERY
(29th RAC Meeting)



Visit of RAC to Reseach Laboratories (First day: 19th April 2023)



View of RAC Meeting (First day: 19th April 2023)



Presentation by Dr. S. K. Shukla, Director (First day: 19th April 2023)



Release of publication by RAC (First day: 19th April 2023)



View of RAC Meeting (Second day: 20th April 2023)



**Lecture by Prof. (Dr.) Gopal P. Agarwal, RAC Member
(Second day: 20th April 2023)**