



वस्त्र मंत्रालय
MINISTRY OF
TEXTILES

75
Azadi Ka
Amrit Mahotsav

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NTTM Newsletter

Capturing Technical Textiles' developments & updates

National Technical Textiles Mission
MINISTRY OF TEXTILES

Capturing in the Newsletter

1

NTTM in the news

2

NTTM – Meetings & Interactions

3

NTTM R&D Updates

4

Global News Update

5

India News Updates

6

Technological Advancements

7

Articles of Technical Textiles

8

Case Study

9

Forthcoming Events

10

Annexure

NTTM in the News

▪ **Textiles Ministry releases 02 Quality Control Orders for 20 items of Agro Textiles and 06 items of Medical Textiles to be effective from 1.04.2024 in 2nd phase of QCOs on technical textiles**

Ministry of Textiles announced the launch of 02 Quality Control Orders (QCOs) for 06 items of Medical textiles and 20 items of Agro-textiles and in the Phase-II, following the due process for notification of Technical Regulations including stakeholder consultation, legal vetting, amongst others.

Medical textiles QCO encompass a range of products vital to healthcare and hygiene. The products covered under this QCO include Sanitary Napkins, Medical textiles -Shoe covers, Medical textiles -Dental bib/Napkins, Disposable baby diaper, Reusable sanitary pad/sanitary napkin/ period panties and Medical textiles -Bed sheet and pillow cover.

Notably, Ministry of Textiles has exempted Self-Help Groups (SHGs) from the Meditech QCOs, fostering small-scale production for the essential products namely Sanitary Napkins, Baby Diapers, and Reusable Sanitary Pad/Sanitary Napkin/Period Panties.

Also, for the Micro and Small (SME) industry manufacturing Sanitary Napkins, Baby Diapers, and Reusable Sanitary Pad/Sanitary Napkin/Period Panties, the Medical textiles QCO shall come into force on the 01st of October 2024 providing them sufficient time to comply with QCO conformity. For the other Medical textiles items and the general industry, this Medical textiles QCO shall come into force on the 01st April 2024.

The conformity assessment requirements specified in these QCOs are equally applicable to domestic manufacturers as well as foreign manufacturers who intend to export their products to India. The Indian Government is of the opinion that it is necessary so to do in the public interest to increase the standard and quality of Agrotextiles and Medical textiles.

Agrotextiles QCO shall come into force on the 01st of April 2024. This QCO is of paramount importance to the agricultural community and aims to enhance the quality and performance of the Agro textiles products, ensuring that farmers have access to reliable & durable solutions for their agricultural needs. It encompasses a wide range of products designed to enhance agricultural and horticultural practices including the following:

S. No.	Product Title	S. No.	Product Title
1	Textiles— Polypropylene Spun Bonded Non— Woven Crop Cover and Fruit Skirting Bags for Agriculture and Horticulture Applications	11	Agro Textiles— Windshield nets for agriculture and horticulture purpose
2	Agro Textiles—Insect nets for Agriculture and Horticulture purpose	12	Agro Textiles— Harvest nets for Agriculture and horticulture purposes
3	Agro Textiles— Woven Ground covers for Horticulture Application	13	Agro textiles —Fencing nets for Agriculture and horticulture purposes — Specification Part 1 Fencing nets made from extruded polymer mesh
4	Jute Agro textiles for Growth of Plants and Suppression of Weeds	14	Agro textiles —Fencing netsfor agriculture and horticulture purposes —

S. No.	Product Title	S. No.	Product Title
			Specification Part 2 Fencing nets made from mono filament yarns and combination of tape and mono filament yarns
5	Agro Textiles — High Density Polyethylene (HDPE) woven beds for vermiculture	15	Agro Textiles —Plant Support Nets for Agriculture and Horticulture Purposes
6	Jute Agro—textile— Sapling bags for growth of seedling /sapling	16	Agro Textiles —High Density Polyethylene (HDPE) Laminated Woven Lay Flat Tube and Fittings for use in Rain Irrigation System
7	Agro Textile—High Density Polyethylene (HDPE) laminated woven lay flat tube for irrigation purpose	17	Agro— Textiles Flexible Water Storage Tank for Agriculture and Horticulture Purposes
8	Agro Textiles—Nylon Knitted seamless gloves for tobacco harvesters	18	Agro— Textiles Hail Protection Nets for Agriculture and Horticulture

S. No.	Product Title	S. No.	Product Title
			Purposes Specification Part1 Warp Knitted Hail Protection Nets
9	Agro Textiles High density polyethylene (HDPE) laminated woven lay flat tube for use in mains and submains of drip irrigation system	19	Agro— Textiles Hail Protection Nets for Agriculture and Horticulture Purposes Specification Part 2 Woven Hail Protection Nets
10	Agro Textiles — Propylene Spun bonded non—woven mulch mat for agriculture and horticulture applications	20	Agro— Textiles Laminated Woven Orchard Protection Covers

QCOs are essential for safeguarding the interests of consumers and supporting the growth of the Technical Textiles sector. This will strive to provide best value to the users and end consumers, thereby fostering Indian product quality that is comparable to global standards.

QCOs issued in 1st phase for 12 items of Protective textiles have come into effect from 7th October 2023 and enforcement of 19 items of Geotextiles is extended to 1st January 2024.

In Phase-III, around 30 more Technical Textiles items in the areas of building textiles, industrial textiles, ropes & cordages among others, may be considered for QCO issuance.

▪ **7th Mission Steering Group (MSG):** Ministry of Textiles approved 18 R&D projects valuing INR 46.74 Crores across different areas of Technical Textiles under National Technical Textiles Mission

While chairing the 7th Mission Steering Group (MSG) meeting of the National Technical Textiles Mission on 28th September 2023, Union Minister of Textiles, Commerce and Industry and Consumer Affairs, Food and Public Distribution, Shri Piyush Goyal said that Industry and Institute's pro-active and robust engagement is essential for the indigenous development of technical textiles in India.

Ministry of Textiles approved 18 R&D projects worth INR 46.74 crores across key strategic areas of Geotech, Protech, Indutech, Sustainable Textiles, Sportech, Smart E-Textiles, Meditech segments during the 7th MSG meeting.

Among these 18 R&D projects, 14 are high value Projects, 3 are Prototype Grant projects and 1 is Ideation Grant project. The projects cover different application areas of technical textiles including 1 Projects from Geotech, 2 of Protech, 2 Indutech, 2 Sportech, 5 Sustainable Textiles, 3 Meditech, 3 Smart & E Textiles and 1 Geotextiles were approved. The approved projects were led by institutes and research bodies including BTRA, ATIRA, IIT Delhi, IIT Jammu, NIT Jalandhar, IIT Kharagpur, CSIR New Delhi, IIT Madras, among others.

While addressing the meeting, Shri Piyush Goyal said that emphasis should be on R&D for globally highly imported technical textiles items, apart from import-dependent technical textiles items and specialty fibres in India.

Shri Goyal also reviewed the progress on Training & Skill Development besides Education, wherein 26 applications from 15 Public and 11 Private institutes valuing INR 151.02 Crores were approved for introducing papers, procuring laboratory infrastructure and training of trainers across different application areas of technical textiles.

Senior officials from NITI Aayog, Ministry of Commerce and Industry, Ministry of Road Transport and Highways, Ministry of Heavy Industries, Ministry of Railways, Ministry of Jal Shakti, Department of Expenditure, Department of Higher Education, Department for Promotion of Industry and Internal Trade and members from other Ministries, and eminent members

from the industry attended the meeting. [Read More](#)

▪ **Centre approves Startup Guidelines dedicated to Technical Textiles**

The Ministry of Textiles has approved the Startup Guidelines for Technical Textiles - Grant for Research and Entrepreneurship across Aspiring Innovators in Technical Textiles (GREAT) providing grant-in-aid upto INR 50 Lakhs for upto a period of 18 months.

With a strong emphasis on developing the Startup Ecosystem in Technical Textiles, the guidelines focus on supporting individuals and companies to translate prototype to technologies & products including commercialization. The GREAT Guidelines provides thrust in Technical Textiles' application areas including Agro-textiles, Building-textiles, Geo-textiles, Home-textiles, Medical-textiles, Mobile-textiles, Packaging- textiles, Protective-textiles, Sports-textiles; Development of High-performance fibres and composites; Sustainable and Recyclable Textile materials; Smart Textiles using Artificial Intelligence, Internet of Things, 3D/4D Printing, and Rapid Prototyping; and Development of indigenous Machinery/Equipment/Instruments, among others.

To incentivize the incubators, Ministry to additionally provide 10% of total grant-in-aid to incubators. To strengthen authenticity and commitment towards the project, a minimum investment of 10% of the funding from the incubatee in two equal installments is mandated. The Startup Guidelines (GREAT) to provide much needed impetus for the development of technical textiles startup ecosystem in India, especially in niche sub-segments such as Bio-degradable and Sustainable textiles, High-performance & Specialty fibres, Smart textiles, among others.

Ministry also gave the nod to 26 institutes for upgrading their laboratory infrastructure and training of trainers in the application areas of technical textiles. Ministry has approved the applications of 26 institutions for development and introduction of technical textile courses/

papers in the key departments/specializations as well as introducing new degree programme in technical textiles.

Total value of INR 151.02 Crores was approved wherein 15 applications valuing INR 105.55 Crores are from Public Institutes and 11 applications valuing INR 45.47 Crores are from Private Institutes.

Some of the premier institutes to be funded under the scheme include IIT Delhi, NIT Jalandhar, NIT Durgapur, NIT Karnataka, NIFT Mumbai, ICT Mumbai, Anna University, PSG College of Technology, Amity University, among others.

Notably, majority of the funding to be provided for upgradation of existing courses including Departments related to Textile Technology & Fibre Sciences to upgrade courses in all application areas of technical textiles including specialty fibres; Departments related to Design/Civil Engineering to upgrade courses in Geotextiles & Building textiles; Departments related to Fashion Technology/Design to upgrade courses in Smart Textiles, Protective Textiles, Sports Textiles, Home Textiles, Cloth Textiles; Department of Mechanical Engineering to upgrade courses in Mobile Textile, Industrial Textiles; and a New Degree Programme in Technical Textiles with predominant emphasis on all application areas of Technical Textiles. [Read More](#)

▪ Ministry of Textiles organizes 6th National Conclave on Standards & Regulations for Technical Textiles

Ministry of Textiles, under its flagship scheme National Technical Textiles Mission (NTTM), organized the 6th National Conclave on Standards & Regulations in association with FICCI and BIS, emphasizing on importance of Standards, Quality regulations & Rationalization of HSN codes for Technical Textiles in India.

The event encompassed 5 technical sessions focusing on Standards and Regulations under specialized areas of Technical Textiles like Protective textiles, Geotextiles, Build tech,

Oekotech, Medical textiles and in other emerging areas of Technical Textiles. There was a Special Session also discussing rationalization of HSN codes & standards and implementation of QCOs.



Smt Rachna Shah, Secretary, Ministry of Textiles, Government of India, highlighted that there has been a considerable progress made on standards in Technical Textiles. Quality standards are critical for technical textile products, as these products are highly specialized and technical in nature. Continuous formulation and revision of the standards for each product category and segment significantly impacts the consumption of technical textile products in India.

She opined that to amplify the production of Technical Textiles products, it is imperative to map them with the relevant HSN codes which will facilitate the streamlining of trade tracking and alignment with the HSN mapping requirements. These steps will also support effective implementation of flagship schemes of Ministry of Textiles like, PM MITRA, Production Linked Incentive (PLI) Scheme.

Shri. Rajeev Saxena, Joint Secretary, Ministry of Textiles, Government of India, emphasized on the importance of effective implementation of QCOs and introduction of new standards for technical textiles, especially in consonance with global standards, while setting the context for the conclave. Further, 32 new technical textiles' HSN codes has been notified in April 2023, beyond the list of already notified 207 HSN Codes, he further added. He also highlighted that a Technical Committee for Rationalization of HSN Codes for Technical Textiles has already been formed. Regarding releasing of new QCOs, he mentioned that 2 QCOs for 31 technical textile items under Geotextiles and

Protective textiles were notified and will come in-effect from 7th October 2023. In addition, Ministry has also undertaken the task to notify QCOs for 56 technical textile items including 22 Agro textiles, 6 Medical textiles, among others.

Shri H J S Pasricha, Scientist- F & Deputy Director General- Certification & CSMD, BIS stated the Textiles Division of BIS has published more than 1500 standards for textiles, out of which about 600 standards are on the technical textiles and its test methods.

Shri Manmohan Singh, Co-Chair FICCI-Textiles and Technical Textiles Committee highlighted that there is huge potential in the country for Technical Textiles both for investments and consumption. It is vital to understand and establish robust standards and regulations that foster growth, ensure quality and safety. He also mentioned National technical Textiles Mission (NTTM), a flagship mission under Ministry of Textiles is supporting the sector in significant ways.



More than 150 participants attended the conclave including officials and representatives from Central Ministries, user Departments of Central and State Governments, Institutes, industry leaders, scientific experts, researchers, and professionals related to technical textiles across various categories. [Read More](#)

▪ **Ministry of Textiles organized 'Meditex 2023' International Conference on Scope and Opportunities in Medical Textiles**
The Ministry of Textiles in partnership with The South India Textile Research Association (SITRA) organized 'Meditex 2023: International Conference on Scope and Opportunities in Medical Textiles under National Technical

Textiles Mission (NTTM), on 13th September in Mumbai.

There were multiple technical sessions in the conference including Recent Advantages and Prospects of Medical Textiles; Import Substitute: Scope and Demand of Indigenous Medical Textile Products; Entrepreneurial Pathways in medical textiles – from concept to market; Future Direction of Medical Textiles; and Standards, Certification and Regulatory Requirements. A book on 15 years of Research in Medical Textiles: A Crystal Jubilee Publication (2008 – 2023) was also released during the conference.

Chief Guest, Smt Darshana Vikram Jardosh, Hon'ble Minister of State for Textiles & Railways, Government of India, emphasized on focusing on innovation, increasing the commercialization of new products and enhancing the access to advancement in new technology in the area of medical textiles. Further, she stated that high level of collaboration must be fostered among research organizations, academia, and industries towards better utilisation of advanced technology. She reiterated about India's transformation as the global leader of PPE Kits and masks. From being a non-producer of COVID Grade Personal Protective Equipment (PPE), India rose to become world's second largest producer and exporter of PPEs and N-95 Masks in a period of just six months during covid times, she highlighted further.

She highlighted that young minds and startups should be supported and strengthened in India, especially in the medical textiles segment, promoting the Atma Nirbhar Bharat and Vocal for Local vision of the Hon'ble Prime Minister.

Shri. Rajeev Saxena, Joint Secretary, Ministry of Textiles, Government of India, highlighted on the vitality of medical textiles due to its direct correlation with quality of life, despite low share compared to Packtech and Mobiltech in India. He emphasized that wider innovation and research is required in the medical textiles, especially focusing on novel technologies, and indigenizing the highly imported medical textile

items such as sanitary pads, diapers and other surgical sutures, among others.

He also stated that Ministry of Textiles is also working with CDSCO on regulatory aspects of different medical textiles. Ministry of Textiles will soon be notifying Quality Control Orders (QCOs) for 6 medical textile items including sanitary pads and diapers, among others. He also encouraged the industry and institutes to utilize the different guidelines under National Technical Textiles Mission (NTTM) including R&D in Technical Textiles products and Equipment thereof; Startup Guidelines (GREAT); and Education Guidelines 2.0, among others.

Dr. Sailesh Pawar, Scientist-F, ICMR-NIV highlighted on the tremendous scope of indigenous development of medical equipments in India. Moreover, he stated that innovation in terms of biodegradability is the need of the hours for strengthening sustainability and recyclability in the textiles industry, especially in the medical textiles landscape.

Shri S K Sundararaman, Member, Council of Administration, SITRA appreciated the initiatives taken by Ministry of textiles to promote the technical textile sector.

Officials and Representatives from Central Ministries, User Departments (Health & Medical) of Central and State Governments, Institutes, industry leaders, scientific experts, researchers, and professionals related to Medical Textiles participated in the conference.

[Read More](#)

▪ Participation in Tectextil India hosted by Messe Frankfurt India

Messe Frankfurt India hosted the ninth edition of Tectextil India held from September 12-14, 2023, at JIO World Convention Centre (JWCC), Mumbai, attended by officials from Ministry of Textiles. The event provided a platform for bringing together 160+ industry players to display 200+ brands and specialized products and technological solutions from the industry with a line-up of live demonstrations.

▪ Participation in Sonipat Start-up Summit 2.0 hosted by AIC IIT Delhi

AIC, IIT Delhi hosted the second edition of the Largest Innovation festival of Haryana, “Sonipat Startup Summit”, on the 21st and 22nd of September 2023 attended by officials from Ministry of Textiles. The summit provided a platform for start-ups, investors, experts, SMEs and Govt. officials to network and explore collaborative opportunities.



The event witnessed a footfall of 600+ people. Some of the brightest minds from the innovation Ecosystem, Policy Makers, investors and academicians gathered under one roof to create a positive synergy of innovation.

The Summit hosted multiple events like Startup Bootcamp, Pitch Your Idea, Investor Speed Dating, The Startup Expo, Round Table Discussion, and a lot more.

NTTM – Meetings & Interactions

▪ 3rd Meeting of the Empowered Programme Committee (EPC)

3rd Meeting of the Empowered Programme Committee (EPC) under National Technical Textiles Mission (NTTM) under the Chairpersonship of Ms. Rachna Shah, Secretary, Ministry of Textiles, held on 7th July 2023 in Udyog Bhawan, New Delhi. Under Research and Development, the Committee approved the statutory variation power in the sanctioned R&D projects under NTTM to Mission Coordinator within the limits of EPC. The Committee approved the removal of MoU for executing sanctioned R&D projects and replacement of the same with ‘Terms & Conditions/sanction letter’ followed by an

acceptance letter from PI and Host Institute. In addition, for involvement of multiple institutes/industry partners, MOU between industry partner(s) and institute(s) may be asked from Principal Investigator(s). For Internship support, the Committee approved the eligibility of National and State Industry Associations & Chambers with a minimum average turnover of INR 50 lakhs during 2019-20, 20-21 & 2021-22 to get empaneled under the GIST Guidelines.

▪ **4th Meeting of the Empowered Programme Committee (EPC)**

4th Meeting of the Empowered Programme Committee (EPC) under National Technical Textiles Mission (NTTM) under the Chairpersonship of Ms. Rachna Shah, Secretary, Ministry of Textiles, held on 22nd August 2023 in Udyog Bhawan, New Delhi. The Committee approved the Startup Guidelines for Technical Textiles - Grant for Research and Entrepreneurship across Aspiring Innovators in Technical Textiles (GREAT) providing grant-in-aid up to INR 50 Lakhs for up to a period of 18 months. Out of 29 recommended Education applications/proposals setup for approval of the EPC, the committee approved 26 Education Applications/Proposals valuing INR ~151.02 Crores and decided to consider in only one category per institute. The Committee also approved the General Guidelines for Enabling of Academic Institutions in Technical Textiles – For Private and Public Institutes (Round-2.0)

▪ **Meeting on Deliberation on constitution of mini mission under National technical Textile Mission (NTTM)**

An interaction with different stakeholders from various Industries and Government bodies under the chairmanship of Shri Rajeev Saxena, Joint Secretary, Ministry of Textiles was held on 8th August 2023 on virtual mode to deliberate on constitution of mini mission under National technical Textile Mission (NTTM) of Ministry of Textiles for development of high-performance fibres.

▪ **Stakeholder consultation for Quality Control Order (QCO)**

Stakeholder consultation for 28 technical textiles items to be brought under Quality Control Order (QCO) as well as the QCOs for Agrotech and Meditech items before their issuance in the Gazette of India, under the Chairmanship of Joint Secretary, Ministry of Textiles on 06th September 2023 in Udyog Bhawan, New Delhi.



The primary objective of the meeting was to solicit feedback and opinions from various stakeholders concerning the 28 new technical textiles items across Geotech, Meditech, Buildtech, Ropes & Cordages, Floor Coverings and Indutech, as well as for 28 items of Agrotech and Meditech before their issuance in the Gazette of India.

▪ **Meeting on Deliberation on submission of proposals for development of Machinery for Technical textiles**

An interaction with different stakeholders from various Industries and Government bodies under the chairmanship of Shri Rajeev Saxena, Joint Secretary, Ministry of Textiles was held on 15th September 2023.



The meeting was to deliberate on submission of proposals for development of Machinery for Technical textiles for Making India Atmanirbhar in the development of

machinery & Equipment for Technical Textile under the National Technical Textiles Mission (NTTM) of Ministry of Textiles.

▪ **Meeting of Officials of Ministry of Textiles with Official of Ministry of Railways**

Meeting with the Officials of the Ministry of Railways under the Chairpersonship of Shri Arun Saxena, Advisor to MR, Ministry to Railways regarding Usage of Technical Textiles in Indian Railways on 21st September 2023 at Rail Bhawan, New Delhi.



The interaction commenced with a presentation by the Shri Rajeev Saxena, Joint Secretary, Ministry of Textiles & Mission Coordinator, NTTM on Technical Textiles and their prospective usage in the railways sector; followed by a comprehensive interaction with the officials from different departments of the Ministry of Railways.

▪ **Ministry of Textiles Representative Visit to TRAs: TRA restructuring & skill development**

Shri. Prashant Kumar Meena, Deputy Secretary, Ministry of Textiles & Joint Mission Director, NTTM visited TRA's as part of the Textile Research Association (TRA) restructuring and skill development related initiatives. The primary objectives of the visit were to assess NITRA, BTRA, WRA and SASMIRA infrastructure facility including its research and development activities, review of presence of sufficient scientific staff, availability of testing facilities related to protective textiles

quality control orders (QCOs) issued by Ministry of Textiles, and its efforts in the skill development training for the textiles and technical textiles industry.



NITRA



WRA



SASMIRA



BTRA

▪ **Ministry of Textiles Representative Visit to MATEXIL: Export Promotion Council of India**

Shri. Prashant Kumar Meena, Deputy Secretary, Ministry of Textiles & Joint Mission Director, NTTM visited MATEXIL, the export promotion council of India to deliberate on promotion of exports of technical textiles, developing more contacts with embassies of leading markets of technical textiles, research and studies of potential global markets for exports, the need of rationalization of HSN codes for technical textile items etc.



▪ **Meetings on Evaluation of R&D projects submitted under NTTM**

Four sub-committee meetings and two RD&I meetings were held between July to September'2023 for in-depth evaluation of research and development projects in different sectors of technical textiles submitted under NTTM. After successful evaluation, the

recommended projects were taken to MSG meeting for final approval of projects.

NTTM R&D Update

Under Component I – Research, Development and Innovation of NTTM, 126 R&D Projects* valuing INR 371 Crores have been approved as of 30th September 2023.

Summary of Approved Projects

High Performance and Specialty Fiber Recommended by Cabinet Committee Note

	Focused Area of Research	Number of Projects
1	Meta Aramid and Para Aramid Fiber/ Fabric	2
2	Carbon Fiber / Fabrics and Applications	9
3	Glass Fiber and Application	2
4	Specialty/Functional Fiber	4
5	Ultrafine Nano Fiber and Non-woven webs	8
6	Ultra-High Molecular Weight Polyethylene (UHMWPE)	5
7	Nylon 66	1
8	High Tenacity / Super High Tenacity Polypropylene	0
9	Ceramic Fiber and Applications	1
10	Polybenzoxazoles (PBO) Zylon	0
11	High Tenacity / Super High Tenacity Nylon	0
12	High Tenacity / Super High Tenacity Polyester	0
13	High Tenacity / Super High Tenacity Viscose	0
TOTAL		32

Application Sectors

#	Segment	Number of Projects
1	Geotech	15
2	Protech	19
3	Agrotech	11
4	Meditech	9
5	Indutech	10
6	Mobiltech	5
7	Sustainable Textiles	10
8	Sportech	6

9	Smart & E-Textiles	5
10	Packtech	1
11	Buildtech	3
TOTAL		94

Summary of Institute wise Approved Projects

#	Name of Institute	Number of Projects
1	IIT-Delhi	20
2	IIT-Hyderabad	7
3	IIT-Kharagpur	8
4	IIT-Bombay	3
5	IIT-Roorkee	4
6	IIT-Indore	3
7	IIT-Kanpur	6
8	IIT-Madras	5
10	IIT-Guwahati	1
11	IIT-Ropar	1
12	IIT-Bhubneshwar	1
13	IIT-Mandi	2
14	IIT-Jammu	3
15	IIT Jodhpur	1
16	IIT Bhilai	1
16	IISc-Bangalore	1
17	MNIT-Jaipur	2
18	NIFT-Telangana	1
19	NIT-Warangal	1
20	NIT-Puduchery	2
21	NIT-Trichy	1
22	NIT-Jalandhar	5
23	NIT-Durgapur	2
24	NIT- Karnataka	1
25	NITRA	5
26	BTRA	8
27	SASMIRA	3
28	SITRA	2
29	WRA	1
30	ATIRA	1
31	ADRDE, DRDO-Agra	2
32	DRDE, DRDO-Gwalior	1
33	DRL, DRDO-Assam	1
34	IRMRA-Mumbai	2
35	IISER, Kolkata	1
36	ICAR, Kolkata	2
37	ICAR- CIRCOT	1
38	CSIR, AMPRI-Bhopal	1
39	CSIR, NCL-Pune	1
40	CSIR- NPL, New Delhi	1
41	CSIR- New Delhi	1
42	CSIR- CECRI	1
43	INST-Mohali	1
44	Bidhan Chandra Krishi Viswa vidyalaya, West Bengal	1

45	C S K Himachal Pradesh Agricultural University, Palampur	1
46	Punjab Engineering College	1
47	MIT&S- Gwalior	1
48	Thiagarajar College of Engineering, Madurai	1
49	Kishinchand Chellearam Colloge, Mumbai	1
50	UPTTI Kanpur	1
51	GCET&T , Serampore	1
TOTAL		126

*Details of approved R&D projects is in Annexure

Global News Update

- Smart Textiles- Benefits of printed electronics outlined:** Textiles are tactile, sensorial and visual – qualities that can be modified or even expanded when technology is added, transforming passive textiles into active and interactive devices, monitoring and detecting bodily functions due to their constant contact with the skin,” he says. “Thanks to their flexibility, stretchability and light weight, printed electronics allow for smart garments that function as a second skin with a great level of comfort for its wearer. Printed electronics are also more durable than traditional electronics and can withstand multiple washing cycles, crinkling, friction and sweating. [Read More](#)
- Japanese researchers develop novel wearable chemical sensor:** In a recent study, researchers from Japan have developed a novel wearable chemical sensor capable of measuring the concentration of chloride ions in sweat. By using a heat-transfer printing technique, the proposed sensor can be applied to the outer surface of common textiles to prevent skin irritation and allergies and could also be useful in the early detection of heat stroke and dehydration. The remarkable level of miniaturization possible in modern electronics has paved the way for realizing healthcare devices previously confined to the realm of science fiction. Wearable sensors are a prominent example of this. As the name suggests, these devices are worn on the body,

usually directly on the skin. They can monitor important bodily parameters, including heart rate, blood pressure, and muscle activity. [Read More](#)

▪ **Managing textile waste in a sustainable way: a path to a greener future:**

The textile industry plays a significant role in Bangladesh's economy, but it also generates a substantial amount of waste. As the country strives for sustainable development, it is crucial to address the issue of textile waste management. This article explores the challenges posed by textile waste and provides practical solutions for managing it in a sustainable manner. Understanding the impact of textile waste- Textile waste poses environmental, social, and economic challenges. It contributes to pollution, consumes valuable resources, and affects the health and well-being of communities. By understanding the impact of textile waste, we can better appreciate the urgency of finding sustainable solutions. Promoting reduce, reuse, and recycle- The first step towards sustainable textile waste management is to promote the principles of reduce, reuse, and recycle. Encouraging consumers to make conscious buying decisions, supporting initiatives that promote clothing swaps or second-hand markets, and implementing effective recycling programs can significantly reduce textile waste. [Read More](#)

India News Updates

▪ **India's agrotech import soars to ₹159 cr:** India's technical textile sector appears to be on the rise as the government focuses on its development. Imports of agrotech products in India surged by 57 per cent, reaching ₹159 crore between April and June 2023. Conversely, hometech imports fell by 24 per cent to ₹82 crore during the same timeframe. Mobiltech imports remained relatively stable, dominating the import figures for technical textiles. [Read More](#)

▪ **Financial performance & valuation of key textile companies in India:** The textile industry in India plays a crucial role in the country's economy, contributing approximately 2.3 per cent to the national GDP. The industry is also a key player in exports, accounting for over 10 per cent of India's total exports. This places India among the top four largest textile exporters globally. On the manufacturing front, India ranks second worldwide in the production of polyester, fibre silk, and personal protective equipment (PPE). Employment-wise, the textile industry is the second largest employer in the country right after agriculture. Surprisingly, out of the total hand-woven fabrics produced across the world, 95 per cent is produced in India. For investors and entrepreneurs, the textile industry presents abundant opportunities for exploration and growth. Let's now delve into three textile companies that are becoming indispensable players in the industry, showing great future potential. [Read More](#)

▪ **SIMA urges Indian govt to ease imports of viscose & special fibres:** The newly elected chairman of the Southern India Mills' Association (SIMA), S K Sundararaman, has urged the ministry of textile to immediately exempt viscose staple fibre (VSF) imported under the Advance Authorization Scheme. He also called for an exemption on special and value-added fibres and filaments not manufactured in India. In a press conference held last week in Coimbatore, Sundararaman, alongside deputy chairman Durai Palanisamy and vice-chairman S Krishnakumar, stated that SIMA aims to address structural issues to enhance global competitiveness. Although the domestic industry enjoys a 5-10 per cent lower cotton price than international rates, this advantage has eroded due to factors such as 11 per cent import duty and speculative trading on the MCX cotton futures platform. [Read More](#)

Technological Advancements

US researchers develop stretchable fabric-based lithium-ion battery:

Researchers at the University of Houston (UH) in the US have designed and successfully prototyped a fully stretchable fabric-based lithium-ion battery. By converting rigid lithium-ion battery electrodes into fabric-based, flexible, and stretchable ones, the technology sets forth possibilities for wearable devices and implantable biosensors, offering stable performance and safer properties. The innovative concept originated from Haleh Ardebili, Bill D Cook professor of mechanical engineering at UH, who envisioned a 'science-fiction-esque future' with smart, interactive, and powered clothing, according to an article titled 'Researchers Develop Breakthrough Prototype of Stretchable Fabric-Based Lithium-Ion Battery' by Rashda Khan published on UH's website. [Read More](#)

Singapore's researchers mimic spiders to transform smart textile fibre:

Drawing on the intricate spinning process of spiders, researchers at the National University of Singapore's (NUS) College of Design and Engineering alongside international collaborators have created a revolutionary method for producing soft, reusable fibres ideal for smart textiles. These textiles, known for their application in therapeutic, sensing, and communicative devices, require durability, elasticity, and electrical conductivity, all of which this new method fulfils. [Read More](#)

Japan's Teijin Frontier introduces new nonwoven microcarriers:

Teijin Frontier Co, Ltd, the Teijin Group's fibres and products converting company, has announced that it has developed a new nonwoven microcarriers that enable speedy, large-scale, high-quality cell culture. This scaffolding material for a wide range of cell types facilitates adherence and growth in three dimensions. The new nonwoven microcarriers combine Teijin Frontier's proprietary fibre process and nonwoven design technology and fibre-related bio-medical expertise by professor Satoshi Fujita at the

department of Frontier Fibre Technology and Science, faculty of Engineering, University of Fukui, Japan. [Read More](#)

Articles on Technical Textiles

The Vast Scope Of Nonwovens Beyond Clothing By Elizabeth Miller

"Nonwoven textiles are a core element of humanity's past. They are also one of the materials that will create its future. As technology evolves, so do nonwovens, and the world of these textiles is forever expanding. Some of the industries that rely on nonwovens may be surprising. The very first fabrics humanity created were nonwoven textiles. Archaeological evidence for felt dates back to 6500 BCE, predating woven and knitted fibres by many centuries. Because they are made directly from fibres, nonwoven textiles are much faster and easier to make than knitted or woven ones. The age of the technology, however, doesn't mean that there is no innovation in the world of nonwovens." [Read More](#)

India In Global Technical Textiles Value Chain: A Market Overview By Technicaltextile.net

"The world of textiles is constantly evolving and growing with time. From just conventional textiles comprising of apparel that served the purpose of protecting our body from external surroundings, technology and innovation have paved their way into new verticals. One of them is technical textiles. Technical textiles are value-added textile products that provide added functionality and applications other than the regular fibre-to-fashion supply chain products. These technical textiles encompass high-performance fibres, yarns, woven, knitted, nonwoven, braided, and composite structures, and the scope of these functional-based textiles is expanding to a new horizon of high-end specialised assets. The growth drivers of various segments of technical textiles derive

their strength from the growth of respective user industry segments.” [Read More](#)

▪ **Protective Textiles: Inspired By Nature** By Elizabeth Miller

“Humans have been mimicking these adaptations for thousands of years, and the textile and fabric industries are no different. As ancient Roman philosopher Seneca the Younger said, all art is an imitation of nature. Even the most basic felted textiles take their cues from the fur of the animals they are made from. When it comes to biomimicry in textiles, there is an entire planet to explore. For instance, velcro and other hook-and-loop closures were famously inspired by the burrs that got stuck to George de Mestral’s trousers during a hike. These innovations did not stop in the 1940s, though. Here are a few of the newest innovations in protective textiles that are inspired by nature.” [Read More](#)

**Case Study:
Usage of Technical Textiles in
Health/ Medical Sector**

Medical Textile or Meditech segment consists of Technical Textiles material that are engineered and standardized to offer effective solutions to large range of medical and healthcare applications, ranging from products such as surgical bandages, plasters, absorbent, gauze abdominal swabs, first aid plasters and bandages to high end applications such as anti-embolic stockings for post-surgery use, wound care occlusive and hydrocolloid dressings, among others. In addition, Medical Textiles play an extremely important part in ensuring safety, hygiene and protection of patients and medical workers in any healthcare delivery institution – whether under reusable category or disposable items. Key Existing or Potential Usage of Technical Textiles in Medical Applications are as follows:

Meditech Products/ Application Area	Product Usage
Synthetic fibers, such as polypropylene or polyester used in suspensory & reinforcing surgical mesh	Repair or reinforce weakened or damaged tissue (eg. used in hernia repair surgeries)
Hydrophobic (water-resistant) felt material, polypropylene or polyester used in hydrophobic sanavel felt dressing	Wound dressing to protect and promote healing in non-exuding wounds. Made from MMF designed for treatment of bums and different dermatological defects
Biodegradable synthetic fibers, such as polylactic acid (PLA) or polyglycolic acid (PGA) used in biodegradable sutures	Sutures that dissolve in the body over time; used for wound closure
Polyester, polythelene fibre used in non-biodegradable sutures	Used for wound closure in surgeries, these sutures are not absorbed by the body
Synthetic fibers, such as polypropylene or polyester; PTFE fibre, polythelene fibre used in artificial tendon	Used in reconstructive surgeries to replace a damaged or missing tendon.
Biocompatible and high-strength materials like polyethylene or polyester; carbon fibre used in artificial ligament	Used in orthopedic surgeries to replace damaged or torn ligaments
Low density polyethylene fibre; Biocompatible and resilient materials like polyurethane used in artificial cartilage	Used to replace damaged or missing cartilage
Biocompatible and skin-like materials, often in combination with biological components; Synthetic fibers, such as polyurethane or nylon used in artificial skin	Used to cover large wounds or burns.
Polymers or Poly methyl methacrylate fiber used in eye contact lenses	Usage: Corrective lenses placed on the eye's surface to improve vision
Synthetic materials, such as polymethyl methacrylate, polymers used in artificial cornea	Used to replace a damaged or missing cornea.

Meditech Products/ Application Area	Product Usage	Meditech Products/ Application Area	Product Usage
Biocompatible materials like expanded polytetrafluoroethylene (ePTFE) or polyester used in vascular grafts	Used in vascular surgeries to replace or repair damaged blood vessels.	Glass fibers, Glass fibers used in root canal filling materials	canal and prevent the spread of infection.
Synthetic materials, such as pyrolytic carbon; Biocompatible materials like polyurethane or bovine pericardium used in Heart Valves	Used to replace damaged or malfunctioning heart valves.	Nonwoven fabrics or laminated materials; Synthetic fibers, such as polypropylene or polyester used in isolation gowns	Used to protect healthcare workers from exposure to infectious diseases.
Polythelene fibre (biocompatible, strong, durable, and low-friction) used in artificial joints/bones	Used in joint replacement surgeries to restore joint function	Hollow membrane fibers, such as hollow rayon, triacetate, polyvinyl alcohol, and polyester fibers, polysulfone, Polypropylene, Polyethylene used in artificial kidney	Used to filter blood for patients with kidney failure.
ePTFE (expanded polytetrafluoroethylene) used in Dental Implant Membranes	These membranes are used to protect the bone around a dental implant during the healing process.	Hollow viscose fibres, polysulfone, Polypropylene, Carbon nanotubes, Nanofibers used in artificial liver	Used to detoxify blood for patients with liver failure.
Biocompatible and porous materials like polymers or biodegradable fibers; polypropylene used in Scaffold	Scaffolds are used in tissue engineering and regenerative medicine to support cell growth and tissue regeneration.	Polyurethane, Polyethylene & Vinyl, synthetic fibers used in dental prosthetics & dentures	Used to replace missing teeth
Polymer materials used in eye shields and woven or nonwoven materials with adhesive backing; lycra, mircofibre used in eye patches	Eye Shield- Protective shields used to cover and protect the eye after eye injury or surgery.	<h2 style="background-color: #008000; color: #FFD700; padding: 5px; border-radius: 10px; display: inline-block;">Forthcoming Events</h2> <hr/> <h3>October 2023</h3> <ul style="list-style-type: none"> ▪ FiltXPO, 10th-12th October 2023, Chicago, US ▪ TITAS, 17th- 19th October 2023, Taiwan ▪ Textile exchange conference, 23rd -27th October 2023, London ▪ JEC Forum DACH, 24th- 25th October, 2023, Austria <hr/> <h3>November 2023</h3> <ul style="list-style-type: none"> ▪ Advanced textile Expo, 1st- 3rd November 2023, Florida, USA ▪ ITMF- 6th World Textile Merchandising Conference, 4th- 6th November 2023, China ▪ Technical Textile Conference, ICC Guwahati, 24th November 2023 	
	Eye patch- Used to cover and protect the eye during eye treatments or to aid in occlusion therapy for amblyopia ("lazy eye") treatment in children		
Non-woven fabrics (synthetic fibers, such as polyester or polypropylene) used in dental swabs & sponges	Dental swabs and sponges are designed to be absorbent, soft, and non-irritating.		
Nylon or polyester fibers used in dental floss & interdental brushes	Used to remove plaque and food particles from between teeth.		
A thin latex or non-latex or vinyl sheet barrier used in dental dam	Used during specific dental procedures to isolate the treatment area		
Polypropylene, rayon, polyester, cotton, etc. used in Endodontic Absorbent Points	Used in root canal treatments to absorb fluids and disinfect the root canal.		
Nylon fibers, Polypropylene, Vinyl,	Root canal filling materials are used to seal the root		

- Hygienix, 13th- 16th November 2023, New Orleans, US
- Composites world, 28th- 30th November 2023, Salt lake city

December 2023

- International textile conference, 30th Nov - 1st December 2023, Germany
- International Conference on Textile Engineering (ICTE), 9th December 2023 - New York, United States
- Nonwoven Fabric Property Development And Characterization, 5th- 8th December 2023, US

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Annexure

Research Projects sanctioned in 1st MSG Meeting

#	Project Title	Cost (INR Cr.)	Duration (Years)	PI Name and Institute
1	Development of Carbon Nanotube Reinforced Acrylic Precursors for Carbon Fibre	18.08	2	Dr.T.V. Sreekumar, BTRA
2	Biodegradable & bioactive nanofibrous face mask' under the research topic "Surface modification of Carbon Fiber	1.99	2	Prof Prakriti Tayaliya, IIT-B
3	Carbon based Dermal Patch for Vitiligo Therapy	3.4	3	Prof Prakriti Tayaliya, IIT-B
4	High performance composite Fibres	27.52	3	Dr.Ashwini K. Agrawal, IIT-D
5	A technology platform for design and manufacturing of advanced and multi functional 3D woven Textile Structural Composites using High performance and natural fibres	20.09	2	Dr Prof.B. K.Behera, IIT-D
6	Activated and Patterned Carbon Nanofibers based Advance Design Configuration for High Performance Lithium-Ion Batteries and Supercapacitors	0.93	3	Dr.Chandra Sekhar Sharma, IIT-H
7	Scaling up of electro- spinning process for nano- fibers	1.24	3	Dr.Chandra Sekhar Sharma, IIT-H
8	Engineering Fibers for Fog Harvesting and Interfacial Solar Water Purification	1.55	3	Prof. Sameer Khandekar, IIT-K
9	Development of Tyre Tread Compound using Graphene in combination with Carbon & Silica as a Reinforcing Filler for Reducing the Rolling Resistance (RR) and Improving Fuel Efficiency	1.22	2	Dr.K Rajkumar, IRMRA
10	Design and development of facile high throughput needle less electrospinning set-up	1.9	2	Dr. PrakashVasudevan & Dr.L Amalarparamary, SITRA
11	MicroRNA Diagnostic Kit using Doped Carbon Nanofibers	0.69	2	Dr. Dharitri Rath, IIT-JAM
Total Value of projects sanctioned in 1st MSG meeting		78.61		

Research Projects sanctioned in 2nd MSG Meeting

#	Project Title	Cost (INR Cr.)	Duration (Years)	PI Name and Institute
12	Knitting for Composite Preform Developments using Technical Yarns	1.2	1.3	Dr. Bipin Kumar, IIT-D
13	Development of Multifunctional Graphene incorporated High Molecular Weight Polyethylene (HMWPE) or High Density Polyethylene (HDPE) fibres by an alternative melt route	0.94	2.5	Prof. Mangala Joshi, IIT-D
14	Carbon Fiber-based functional electrode materials for energy storage applications	1.1	2.5	Dr. Bhanu Nandan, IIT-D
15	Development of EMI shielding and heat generating activated carbon fabrics from textile wastes	0.42	2	Prof. Vijay Narayandas Baheti, IIT-D
16	Development of multifunctional structural geotextiles using Textile wastes and Hybrid fabrics	5.98	3	Dr Prof.B. K.Behera, IIT-D
17	Biodegradable self-sanitizing bacterial nano cellulose fabric for air and water filtration	0.5	2	Dr. Mudrika Khandelwal, IIT-H
18	Laboratory And Field Investigations on PET Geo grid-Reinforced Base/Sub base Courses.	1.94	3	Dr. (Prof.) Sireesh Saride, IIT-H
19	Use of geosynthetics in pavements over soft and expansive subgrades: A sustainable solution.	0.51	3	Prof. B. Umashankar, IIT-H
20	Development of biocompatible glass fibre composite for healthcare applications	2.03	2	Asst. Prof. Nilanjan, IIT-KGP
21	Synthesis of Carbon nanofibres from textile/cotton waste	0.63	1	Prof Swambabu Varanasi, IIT-KGP
22	Combating Pandemics through textiles: An Approach to Ease Viral/ Bacterial Infections using advanced Nano Fibrous fabrics	0.95	2	Dr. Shaikh M. Mobin, IIT-INDORE

23	Mass Production of High Performance Carbon Fibers and Nanofiber Separators by Electro-spinning Techniques for Rechargeable Batteries and Super-capacitors	1.3	2.3	Professor Yogesh Sharma, IIT-Roorkee
24	Performance evaluation of Water Hyacinth as an alternate geotextile material.	0.21	2	Dr. Anil Kumar Mishra, IIT-Guwhati
25	Next Generation lightweight, breathable Activated Carbon Fabric (ACF) & Nano web based multilayered chem.-bio facemask for protection against Toxic Chem-Bio Agents	1.5	2	Dr Manisha Sathe, DRDE, DRDO, Gwalior
26	PTFE coated Glass/Para-aramid fabric for large Inflatable Randomes	3.5	2	Dr. Manoj Kumar, ADRDE, DRDO, Agra
27	Development of Parachute material using high molecular weight/ high strength polyethylene yarns	3.37	2	Dr. Manoj Kumar, ADRDE, DRDO, Agra
28	Scalable Manufacturing of MXene / Graphene / 2D material Impregnated Hollow Flexible Carbon Fibers for Energy Storage and Conversion Applications	1.19	2.5	Dr. Kaushik Ghosh, Institute of Nano Science and Technology, Mohali
29	Design of fibre-like crosslinked high stable polymeric material to remediation of textile generated waste management	0.79	3	Dr. Raja Shunmugam, IISER, Kolkata
30	Insecticide incorporated Agronets: Green Technology to minimize the insecticide burden to biosphere	0.97	2	Dr.Pronobesh Chattopadhyay, Defence Research Laboratory, DRDO, Assam

Total Value of projects sanctioned in 2nd MSG meeting **29.61**

Research Projects sanctioned in 3rd MSG Meeting

#	Project Title	Cost (INR Cr.)	Duration (Years)	PI Name and Institute
31	Development of High Performance Gel Spun UHMwPE Fibres and Tapes for Bullet Proof and Geo-Grids/Geo –Composites Applications	6.14	2.5	Dr. T V Sreekumar, BTRA
32	Development of long lasting and biodegradable electrospun/ needle punch nonwoven composite mulch using natural fibrous wastes.	1.92		Prof. Vijay Narayandas Baheti, IIT-D
33	Thermo-acoustic Insulation Textiles for Automotive	1.77	2	Dr. Apurba Das, IIT-D
34	A Circular Approach for the Development of Durable Antibacterial and Moisture Management Polyester Fibres for Sports Textiles	10.34	3	Dr. Abhijit Majumdar, IIT-D
35	Development and Feasibility Studies on Drainage and Reinforcement Functions of 3D Geocomposites in Pavements	2.34	3	Dr. Sireesh Saride, IIT-H
36	Use of Perforated Basalt Fabric Reinforced Cementitious Matrix in Structural Strengthening Applications	0.92	3	Dr. Anil Agarwal, IIT-H
37	Evaluation of natural fibre based agro-textile products in protected eco-friendly structures for production of high value horticultural crops	1.75	2	Dr. Adinpunya Mitra, IIT-KGP
38	Functional textiles for tackling organophosphate insecticides, pesticides and nerve agents' toxicity	0.6	3	Dr. Abhijeet Joshi, IIT-INDORE
39	Carbon nanotube reinforced polyethylene fiber and fabric for high strength application	0.41	2	Dr. Debrupa Lahiri, IIT-Roorkee
40	Fiber reinforced cotton and polyester photonics fabrics with thermal comfort and illumination functionality	0.72	3	Dr. Ranjan Jha, IIT Bhubaneswar
41	Development of 2D nanomaterial-based photo thermally active antimicrobial nanocoated Fabrics and PPE	0.32	2	Dr. Amit Jaiswal, IIT Mandi
42	Development of E-glass/Carbon textile reinforced hybrid polymer composites for wind turbine Blade application	0.41	3	Dr. Amar Patnaik, MNIT Jaipur
43	Development of Ceramic and UHMWPE Textile Based Hybrid Polymer Composite Armor	3.63	3	Dr. Amar Patnaik, MNIT Jaipur
44	Development of Specialized Firefighting Suit	8.9	3	Dr. M.S.Parmar, NITRA
45	Development of flame-retardant Nylon 66 yarn/fibre indigenously	2.6	3	Dr. Arindam Basu, NITRA

46	Polyethylene Engineered Cementitious Composites (PE-ECC) for High Resilient Infrastructure	0.71	3	Dr. Madappa VR Sivasubramanian, NIT, Puducherry
47	Development and manufacture of Ultra High Molecular Weight Polyethylene (UHMWPE) nano-fabrics and its composite for reusable respiratory masks	0.55	1.5	Dr. Arunangshu Mukhopadhyay, NIT, Jalandhar
48	Development of High Strength Cost effective Seamless Technical Circular Fabric from Heavy Denier Multifilament Yarns for Geotechnical Applications	7.02	3	Dr. Manisha Mathur, SASMIRA
49	Development of Multi-layered Firefighter's suit for Protection against Thermal Hazards and Pressurized Steam	0.88	2	Chandra Shekhar Malvi, Madhav Institute of Technology & Science, Gwalior
50	Development of smart cloth using carbon nano tube reinforced nano composites	0.83	2	Dr. V. Gayathri, Thiagarajar College of Engineering, Madurai
51	Development Of Carbon Nanofiber Materials From Cow Dung/ Bio-sludges For Smart Fabric Textile And Selective CO ₂ /H ₂ Energy Storage Applications By 3D Printing Technology.	0.77	3	Dr. A.K. Srivastava, (CSIR-AMPRI), Bhopal
52	Use of Jute Agro Textiles as prospective mulching material to test the suitability of mango based intercropping systems towards increasing crop productivity and promotion of livelihood security for the backward farming community Red and Lateritic Zones of West Bengal	2.42	3	Dr. Susanta Kumar De, Bidhan Chandra Krishi Viswa Vidyalaya, West Bengal
53	Sustainable use of unconventional fibres of Indian Himalayas for Agro textiles	3.15	3	Dr. Sapna Gautam, C S K Himachal Pradesh Agricultural University, Palampur
Total Value of projects sanctioned in 3rd MSG meeting		59.1		

Research Projects sanctioned in 4th MSG Meeting

#	Project Title	Cost (INR Cr.)	Duration (Years)	PI Name and Institute
54	Development of alkaline resistance polyester for the geosynthetic applications	3.22	3	Dr. Prasanta Kumar Panda, BTRA
55	Hydrogen pressure vessel manufacturing using Textile based Composites – TeCoPV India	24.34	3	Dr. Asim Tewari, IIT-B
56	Mission for Developing Aerogels Based Textile Materials for Civilian, Industrial and Defense Applications.	5.46	2	Dr. R. S. Rengasamy, IIT-D
57	Development of metallized textiles for applications in personal protective equipment.	0.5	2	Prof. Vijay Narayandas Baheti, IIT-D
58	Development of UHMWPE Fibers and Disentangled Melt for impact mitigation	0.65	1	Dr. Ishan Sharma, IIT-K
59	Development of natural herbal extract coated seed protection bag using natural fiber with long lasting mechanical and insecticidal properties	0.5	1	Dr. Prakash Vasudevan, SITRA
60	Development of Strong and multifunctional (fire Resistant/Anti-Bacterial/Hydrophobic) fabric Using Graphene (Activated Carbon from agricultural Waste) and White-Graphene (hBN) Composite with research to product goals	1.69	3	Dr. Chandra Sekhar Tiwary, IIT-KGP
61	Ramie fibre in defence applications: Development of low-cost protective units	0.13	1	Dr. Amit Shaw, IIT-KGP
62	Development of Indigenous Encapsulated Phase Change Material (PCM)-based Active Wear Textiles and Demonstration of Commercial-scale Manufacturing	19.61	2	Dr. Sarang Gumfekar, IIT-Ropar
63	Design of Reinforced Earth (RE) Retaining wall & RE Abutments for HSR and Railway applications	0.5	1	Prof. G. Madhavi Latha, IISc Bengaluru
64	Municipal Solid Waste (Soil Like Material) and Geotextile Interaction Study for Pavement Subgrade and Embankment Applications in Soft Ground	0.3	1	Dr. K. Muthukumar, NIT Trichy
65	Cellulose-based indigenous high Clo value and low-density surface modified natural fibre for developing thermal layers of extreme cold climate clothing	1.56	3	Dr. M.S.Parmar, NITRA

66	Development of 3D High Performance Knitted Sports Textiles with Thermo-Physiological Comfort and Impact Protective Properties	1	1.5	Dr. Arindam Basu, NITRA
67	Development of Crop cover, mulch, soil protection fabrics and other products using Sun hemp and Banana Fibre	1	1.5	Dr. Arindam Basu, NITRA
68	Design, Development and Performance Assessment of Coir Geotextile Barriers for Landslide Mitigation	0.29	1	Dr. V. Senthilkumar, NIT, Puducherry
69	Development of Energy Responsive Agrotexile for low cost opportunities to grow off-season vegetable/fruits	0.5	1	Ravi Prakash Singh, SASMIRA
70	Development of eco-friendly natural fibres based sustainable agro-textiles for packaging of agro products with protection against rodents, microorganisms including bacteria, fungi and viruses and UV repellent properties	1.79	2	Dr. KK Misra, WRA
71	Development of jute bags for protection and quality preservation of stored seeds	0.5	1	Dr Laxmikanta Nayak, ICAR, Kolkata
72	Natural fibre waste to planting growth media: development characterization and evaluation in soilless crop production system	0.49	1	Dr Nilimesh Mridha, ICAR, Kolkata
73	Lead free ferroelectric-PVDF electrospun fibre composites for energy harvesting textile applications	0.17	1	Dr. Sanjeev Kumar, Punjab Engineering College
Total Value of projects sanctioned in 4th MSG meeting		64.2		

Research Projects sanctioned in 5th MSG Meeting

#	Project Title	Cost (INR Cr.)	Duration (Years)	PI Name and Institute
74	Cut, Slash, Stab, and Impact-Cut Resistant Textiles for Protection	4.11	3.5	Dr. Apurba Das, IIT-D
75	Development of spinnable grade meta and para-aramid polymers and their fibre spinning	8.99	3	Dr Asha Syamakumari, CSIR-NCL
76	Plasma assisted waterless dyeing of high-performance textiles using supercritical fluid for application in technical textiles	11.73	3	Dr Shital S Palaskar, BTRA
77	Preparation and Production of Technical Textile "ElecTex" with Electro-responsive Properties for Improved Wound Healing Properties	0.54	2	Dr. Santosh K. Misra, IIT-K
78	Multi-Metal and Hetero atom Decorated Lignin Derived Carbon Fibers as Energy Storage Materials	0.8	2	Dr. Rik Rani Koner, IIT-Mandi
79	3D Printed protein-based textile fibers	1	1.5	Dr. Ethayaraja Mani, IIT-M
80	Binder Free, Self-Supported Hierarchical Porous carbon Fiber For Inversely Vulcanized Li-S Battery Electrodes	0.55	1.5	Dr. Soumyadip Choudhury, IIT-Kgh
81	Development of nanocomposite jute-geotextile for high-speed railway embankment system to enhance the durability and its remotely health monitoring using Internet of Things (IoT)	1	1.5	Dr.Supriya Pal, NIT-Durgapur
82	Preparation of Lyocell CNT Composite High Strength Carbon Fibers	1	1 yr 4 months	Dr. Prasanta K Panda, BTRA
83	Electrodes for charge storage by (i) electrochemical deposition of transition metal oxide on carbon cloth and (ii) electrospun fiber from lignin based sources with subsequent carbonization	0.47	1	Dr. Somenath Ganguly, IIT-Kgh
84	Development of electro-spun carbon fibers using Bio-waste for energy storage application	0.5	1	Dr Kasilingam Rajkumar, IRMRA
85	Poly 3-Hydroxybutyrate (PHB)-based bioplastics (polymer textile): An alternative eco-friendly solution to commercial plastics for packaging industry	0.39	1	Prof. Vijayan Pallippattu, IIT-Jammu
86	Textile electrodes coated with agri/bio-wastederived activated carbon for high-performance, eco-friendly, flexible all-solidstate supercapacitors	0.5	1	Dr. Rupesh S. Devan, IIT-Indore
87	Studies on the Ballistic Energy Absorption of Polyethylene Coated Aramid Fabrics	0.27	1	Dr. R. Velmurugan, IIT-M
88	Self-healing cement based on electro spun polymer composite nanofibers	0.5	1.5	Dr. Hemlata Kapil Bagla, Kishinchand Chellaram College
Total Value of projects sanctioned in 5th MSG meeting		32.35		

Research Projects sanctioned in 6th MSG Meeting

#	Project Title	Cost (INR Cr.)	Duration (Years)	PI Name and Institute
89	Coal tar pitch-based fibers and its conversion into carbon fibers	2.42	2	Dr. Sanjay Rangnat Dhakate,
90	Development of natural fibre-based hybrid composite for acoustic insulation	0.96	3	Dr. Mallika Datta, GCET&T , Serampore
91	Performance evaluation of selected geotextile-based liner material against seepage loss in water conservation system under a wide range of temperature	1.49	1.5	Dr. Trishikhi Raychoudhury, IIT Jodhpur
92	Sustainable process optimization for high-performance fibrous waste management and valorization	8.87	3	Dr. Bipin Kumar, IIT-Delhi
93	Functionalized Textiles for Germicidal applications	0.988	1.5	Dr. Arun Kumar Patra, UPTTI Kanpur
94	Development of indigenous High- Performance Ultra High Molecular Weight Polyethylene (UHMWPE) fibres/shields for bullet proof applications in defence and civil domains	3.32	2	Dr. Ashutosh Sharma, IIT-Kanpur
95	Additive Manufacturing of Technical Textiles for Sustainable Mobility- Agro Waste Based Materials and Product Design	0.999	2	Dr. R Gnanamoorthy, IIT-Madras
96	Development of special 3D engineered fabric impregnated with graphene and speciality chemicals	0.88	1	Dr Premnath Ram Surwase, SASMIRA
97	Fabrication of multifunctional polypropylene doped graphene oxide incorporated polyaniline nanofiber for antistatic, anticorrosion and antimicrobial applications	0.36	1.5	Dr Anand Kishore Kola, NIT-Warangal
98	Development of Prototype Melt- Spinning Machine for manufacturing Tri-lobal Cross-section Bi-Component Fibers	0.993	2	Dr. J Ramkumar , IIT-Kanpur
99	Development of High- Performance Fiber- Reinforced Concrete for Building Applications	0.996	1.5	Dr. Sahil Bansal, IIT-Delhi
100	paration of cellulose-based aerogels and its composite for thermal insulation application	0.5	1.5	Ms. Komal Kukreja, BTRA
101	Development of optically responsive melt spun bi-component filaments from recycled polyesters for thermo-regulatory smart textiles	0.5	1	Dr. Archana Samanta, IIT-Delhi
102	Conversion of coal tar pitch and natural fibre (lignocellulosic biomass) to carbon fibre	0.5	15 Months	Dr. Shushil Kumar, IIT- Roorkee
103	Development of biobased phase change material (PCM) microencapsulate thermoregulating finish for active wear application	0.5	1	Dr. Md. Vaseem Chavhan, NIFT-Telangana
104	Boron-doped diamond coated corrosion-resistant carbon materials for electro-organic synthesis, energy, and clean water applications	6.99	3	Dr. Kothandaraman R, IIT-Madras
105	The Development of treated Geosynthetic reinforced Asphalt Pavements	6.53	3	Dr. Lek haz Devulapalli, BTRA
106	3D Printed Technical Textiles for Defence Exosuits: Custom Fabrics for Physiological Monitoring and Decontamination Applications	7.13	3	Prof. Sandeep Verma, IIT-Kanpur
107	Performance based design of geosynthetic reinforced soil (GRS) walls and bridge abutments for high- speed railway (HSR) subjected to seismic loading	14.89	3	Dr. Debayan Bhattacharya, IIT-Delhi
108	Development of High- Performance Woven Protective Gloves and Seamless Knitted gloves for Industrial Uses	1.21	2	Dr. G. Krishna Prasad, ICAR-CIRCOT
Total Value of projects sanctioned in 6th MSG meeting		61.026		

Research Projects sanctioned in 7th MSG Meeting

#	Project Title	Cost (INR Cr.)	Duration (Years)	PI Name and Institute
109	Development of Flame Retardant Aircraft Interior Fabrics By Plasma Assisted Chemical Treatment	11.28	3	Miss. Shreyasi Nandy, BTRA, Mumbai
110	Development of the Indigenous HEPA Filters using Nanofibre Technology	8.9	2	Mrs. Deepali Plawat, ATIRA
111	Development of thermoregulating smart textiles with encapsulated nano/micro sized phase change materials for sportswear application	5.44	3	Dr. Bijay Prakash Tripathi, Indian Institute of Technology, Delhi
112	Valorization of textile waste to value-added, reverse processable porous scaffolds for selective sorption and separation	2.55	3	Dr. Rajiv K. Srivastava, Indian Institute of Technology, Delhi
113	Indigenous development of meltblowing system for fabrication of waste plastic bottle derived nonwoven	3.3	3	Dr. Sumit Sinha Ray, Indian Institute of Technology, Delhi
114	Low-cost Prosthetics Design and Fabrication using Advanced Textile and Composites Technology	2.8	3	Dr R. T. Durai Prabhakaran, IIT Jammu
115	Runoff Erosion Control using Jute and Coir Biaxial Stitch Bonded Nonwoven Geotextiles	2.1	2	Dr. Vinay Midha, NIT Jalandhar
116	Development of cost effective ballistic and stab resistance soft body armour by using different high performance materials	1.8	2	Dr. Mukesh Bajya, NIT Jalandhar
117	Solution Blow Spinning (SBS) of micro/nanofibre fabrics for air filtration: A potential and scalable technique alternative to Electrospinning	1.7	3	Dr. Palaniswamy N.K., NIT-J
118	Design And Manufacturing Of Advanced And Multifunctional Textile Structural Composite Materials Using Textile Waste	1.05	1	Dr. Zunjarrao Bapuso Kamble. NIT-J
119	Design of efficient wearable textile antennas	0.71	2	Dr. Bratin Ghosh, IIT- Kharagpur
120	Fabrication of Polymer Waste derived Carbon Nanofiber and Composite based Biodegradable Electrospun Membranes for Water purification	0.59	3	Dr. Sutapa Ghosh, CSIR
121	Pre-oriented carbon fibre grid for Pozzolan based Low energy power source	3.2	3	Dr.T.Palanisamy, NIT Karnataka
122	Application of Bamboo fibre-reinforced composite components for sports goods	2.1	2	Dr. Anshul Faye, IIT- Bhilai
123	Fabrication of flexible conductive fibres/fabric for wearable electronic textiles	1	1.5	Dr. Chinnaiah Sivakumar, CSIR-CECRI
124	Development of Perovskite Solar Cells Based Smart E-Textiles	1	1.5	Prof. Soumitra Satapathi, IIT - Roorkee
125	Development of an IoT Based Organic-Inorganic Contaminants Removal System (CRS) for Purifying Domestic Wastewater through Constructed Wetland using Durable, Nano-Composite Jute-Geotextile Sandwiched LECA Cartridges	0.99	1.5	Dr. Mrinal Kanti Mandal, National Institute of Technology, Durgapur
126	Design and development of fabric antibody embedded matrix for tuberculosis screening	0.5	1	Prof. S. Ramakrishnan, IIT Madras
Total Value of projects sanctioned in 7th MSG meeting		46.74		
Total Value of projects sanctioned till 7th MSG meeting		371.056		



वस्त्र मंत्रालय
MINISTRY OF
TEXTILES

सत्यमेव जयते

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Amrit Mahotsav

National Technical Textiles Mission (NTTM)

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