APPENDIX - A

ASSOCIATIONS BASED ON TEXTILE TECHNOLOGY

1. Ahmedabad Textile Industry Research Association (ATIRA)
   Dr M M Gharia, Director, Head Office, P.O. Ambawadi Vistar
   Ahmedabad - 380 015, Gujarat

2. Bombay Textile Research Association (BTRA)
   Dr A N Desai, Director, Head Office, Lal Bahadur Shastri Marg,
   Ghatkopar (West), Mumbai - 400 096, Maharashtra

3. South India Textile Research Association (SITRA)
   Dr Arindam Basu, Director, Head Office, Post Box No. 3205,
   Coimbatore Aerodrome Post, Coimbatore - 641 014, Tamil Nadu

4. Northern India Textile Research Association (NITRA)
   Dr J Venkat Rao, Director, Head Office, Sector 23, Raj Nagar,
   Ghaziabad - 201 002, Uttar Pradesh

5. The Synthetic & Art Silk Mills Research Association (SASMIRA)
   Dr M K Bardhan, Director, Head Office, Sasmira Marg, Worli,
   Mumbai - 400 025, Maharashtra

6. Man-made Textile Research Association (MANTRA)
   Sh S K Basu, Dy Director, Head Office, Near Textile Market,
   Telephone Exchange, Ring Road, Surat - 395 002, Gujarat

7. Indian Jute Industry's Research Association (IJIRA)
   Dr A K Sharma, Director, Head Office, 17, Taratola Road,
   Kolkata - 700 088, West Bengal

8. Wool Research Association (WRA)
   Sh M K Bardhan, Director, Head Office, K. Mahatma Phule
   (Akbar Camp) Road, P.O. Sandoz Baug, Kolshet Road, Thane,
   Mumbai - 400 607, Maharashtra
APPENDIX - B

DATABASE BASED ON TEXTILE TECHNOLOGY

1. Textile Technology Index Database

This database contains citations to more than 283,000 international publications from 1978 to the present. About 800 new entries are added each month. Selected articles from current technical sources summarize the technological advancements and applications of science and research to the textile industry.

Coverage includes the various aspects of textile production and processing as well as the automation and management systems of these operations. Over 400 journals are scanned with coverage including books, dissertations, patents, and standards. Citations contain bibliographic information, indexing, and abstracts (about 90% of the database). The database is produced by the U.S.-based Institute of Textile Technology.

- Provides indexing and some full text of hundreds of journals covering textiles and apparel.

- While the historical emphasis of this index has been technological aspects of textile production and processing, it now also covers marketing and design.

- Also covers books, conferences, theses, technical reports, and trade literature.
• Indexes some important books as far back as the 1800's.

• First published in 1944, as the Institute of Textile Technology's *Textile Technology Digest*.

Dates of Coverage: Varies; some titles indexed since 1944.

Frequency of Updates: daily

Concurrent Users: Unlimited

2. **EBSCO – Elton Bryson Stephens Company**

   **EBSCO Industries** is a privately held, widely diversified corporation and the largest subscription agency in the world with headquarters in Birmingham, Alabama. It was founded in 1944 by Elton Bryson Stephens (hence the EBSCO acronym Elton Bryson Stephens COmpany). EBSCO is the largest privately held company in Alabama and one of the top 200 in the nation, based on revenues and employee numbers, according to *Forbes* Magazine. In 1997 sales surpassed $1 billion. In 2006 sales exceeded $2 billion. EBSCO is a diverse company which includes over 30 businesses:

   • Publishing of journal article databases
   
   • Subscription provider for more than 300,000 journals serving more than 50,000 libraries worldwide
   
   • Fishing lures (the world's largest manufacturer)
   
   • Steel joist and metal roof deck manufacturing
   
   • Real estate development
3. **TEX.IN - Textile & Apparel www Database**

Tex.in (www.tex.in) is a comprehensive WWW database for textiles, apparel, leather and related industries.

It has over 3,000 textile industry links, in over 500 categories

1. Textile resources for over 100 countries
2. Links and resources for an extensive variety of fiber and fabric
3. Listing of hundreds of business forums and trade networks

Developed with inputs and contributions from industry professionals and textile industry researchers, Tex.in will be useful whether you are doing research, for your business or for knowledge of the textile and apparel industry.

4. **MMU LIBRARY – Manchester Metropolitan University Library**

**Manchester Central Library** is a circular library next to the extended Town Hall in Manchester, England. It acts as the headquarters of the Manchester Library & Information Service, which also consists of 22 other community libraries.

The design was the result of a competition held in 1927 for a new library and town hall extension; the winner was E. Vincent Harris. The library was constructed between 1930 and 1934, but because of its traditional neoclassical architecture it is often mistakenly thought to be much older. At its opening one critic wrote "This is the sort of thing which persuades one to believe in the perennial applicability of the Classical canon". The form of the building is derived from the Pantheon, Rome.
The Library Theatre Company is located in the basement. The library also incorporates the Henry Watson music library.

5. **RMIT – Royal Melbourne Institute of Technology**

**Textile Technology Complete** is the full-text counterpart of Textile Technology Index™, formerly the Institute of Textile Technology's Textile Technology Digest.

The database traces the body of knowledge in textile science and technology as far back as the early years of the 20th century. Textile Technology Complete includes full text for more than 50 journals as well as over 50 books and monographs.

The database contains indexing and abstracting for more than 460 periodical titles and for thousands of titles drawn from books, conferences, theses, technical reports, trade literature and more. Subject coverage includes manufacturing techniques, textile end products, chemicals and dyes, the properties of natural and synthetic fibers and yarns, environmental issues, and the related areas of chemistry, biology and physics.

Textile Technology Complete spans the domestic and international arenas and includes publications covering the major resources from the scientific community as well as the apparel, home furnishings, flooring, and polymer industries.

6. **SLELC – Statewide California Electronic Library Consortium**

The Statewide California Electronic Library Consortium was established in 1986 to develop resource-sharing among the libraries of private academic
institutions throughout California. Since its inception, SCELC has evolved to include all of California and is a 501(c)3 tax-exempt corporation. SCELC represents:

- 90+ member institutions
- 221,500 aggregate student population
- Over $100,000,000 in library budgets
- 18,000,000 volumes

SCELC member institutions can choose from nearly 1500 electronic resources through over 70 vendors. SCELC currently maintains contracts whose cumulative value exceeds $16.5 million annually.

7. **FIT – Fashion Institute of Technology**

The Gladys Marcus Library is located on the 4th, 5th and 6th floors of the Shirley Goodman Resource Center. To meet the diverse needs of its associate, baccalaureate, master's and other College programs, the Library has traditional holdings in the arts and humanities, but remains unique in its specializations. These resources provide professional aspects of the fashion business and the study of design not found in conventional academic libraries.
APPENDIX - C

WEBSITES BASED ON TEXTILE TECHNOLOGY

AFMA - American Fiber Manufacturers Association
http://www.fibersource.com/afma/afma.htm

American Association of Textile Chemists and Colourists http://www.aatcc.org/

American Plastics Council (APC) http://www.woodheadpublishing.com/en/
www.americanchemistry.com/Plastics/

American Polyolefin Association http://www.apa-polyolefin.com/

American Textile Manufacturers Institute http://www.atmi.org/

FabricLink http://www.fabriclink.com/

Fiber Economics Bureau http://www.afma.org/feb/feb1.htm

FiberSource http://www.fibersource.com/fiber.html

Industrial Fabrics Association International http://www.ifai.com/

Industrial Fiber Journal http://www.ifj.com/

Institute of Textile Technology http://www.itt.edu/

MTMA - Malaysian Textile Manufacturers Association
http://www.fashion-asia.com/
National Fire Protection Association
http://www.nfpa.org/index.asp?cookie%5Ftest=1

PolySort http://www.polysort.com/

Polymers.com http://www.polymers.com/

Scottish Textile Association http://www.scottish-enterprise.com/sector-textiles/

The Textile Rooms http://www.textilerooms.com/

Textile Information Management Systems http://www.unicate.com/

The Textile Institute - Manchester, UK http://www.texi.org/

Canesis - formerly WRONZ - Wool Research Organisation of New Zealand
http://www.agresearch.co.nz/

**Academic sites**

Georgia Institute of Technology http://www.gatech.edu/

MIT World of Materials http://www-dmse.mit.edu/

Auburn University http://www.eng.auburn.edu/department/te/index.html

Clemson University http://www.clemson.edu/

Florida State University http://www.fsu.edu/

NC State University http://www.tx.ncsu.edu/

University of Akron http://www2.uakron.edu/cpspe/
APPENDIX - D

CORE JOURNALS ON TEXTILE

1. Apparel Online
2. Apparel View
3. CTT – Cotton Textile Technology
4. Express Textile Journal
5. Home Textile Views
6. IJFTR – Indian Journal of Fibre & Textile Research
7. Indian Journal of Fibre & Textile Research
8. Indian textile journal
9. JCM – Journal of Cotton Science
10. JTATM – Journal of Textile and Apparel, Technology and Management
11. Knitting International
12. Knitting Views
13. New cloth Market
14. Stitch Times
15. Stitch World
16. Tamizaha Textile
17. Textile magazine
18. Textile Report
19. Textile View
APPENDIX - E

FUNCTIONS OF TEXTILE ASSOCIATION

1. Ahmedabad Textile Industry Research Association (ATIRA)

ATIRA is an autonomous non-profit association for textile research. It is the largest of its kind in India for textile and allied industries. ATIRA was established on 13th December 1947, and started in 1949 after due recognition by the Council of Scientific and Industrial Research under the Ministry of Science and Technology, Government of India. Later it was linked to the Ministry of Textiles. ATIRA is located in Ahmedabad, 900 km South West of New Delhi and 500 km North of Mumbai. It is well connected by air, rail and roads. The ATIRA campus is surrounded by other major educational institutions such as Gujarat University, PRL, L.D. Engineering College, IIM and AMA.

ATIRA membership is voluntary. Of 97 units spread all over India and abroad, 87 are Ginning, Spinning, Weaving, Process Houses and Composite Textile Units and 10 are manufacturers of fibres, dyes, chemicals, instruments, equipments and machinery.

ATIRA has four sources of finance:

- Annual Subscription from member units.
- Income from services rendered.
• Sponsored research from Industry, Ministry of Textiles, Ministry of Information Technology and other agencies like Gujarat State Government.

• Grant-in-aid from Government of India.

OBJECTIVES

The Objective in Tune with the National Policies is:

To help the Indian Textile and Allied Industries, Especially atira's membership organisations to become internationally competitive through:

• Application oriented scientific studies.

• Promotion of professional approach and striving for highest standards of excellence in technology, engineering and management.

• Proactive initiatives to meet challenges and to prepare frontier areas
2. Bombay Textile Research Association (BTRA)

**Genesis**

The Bombay Textile Research Association (BTRA) was registered by members of the Millowners' Association, Bombay, under the Societies Registration Act, XXI of 1860 on 21st April 1954, with nine mill companies contributing to the Memorandum and Articles of Association.

BTRA has grown leaps and bounds over the years since its inception in 1954 to meet the technological needs of the Indian textile industry as well as to achieve S&T objectives set at the national level. BTRA members include not only textile units (from mill sector as well as decentralised sector) but also manufacturers from man-made fibre, machinery, dyes and chemical auxiliaries industries. The BTRA zone largely comprised composite mills and from the beginning, the R & D and services were fine-tuned to satisfy their comprehensive requirements.

Industrial research is viewed today as a commercial operation to be justified solely by the usefulness of the results to the textile industry. Therefore, the limited resources of BTRA have been, from the very beginning, efficiently deployed in such areas where maximum benefits accrue to the textile industry. R & D activities at BTRA cover applied and basic research, process and product development, new and frontier areas of technology, engineering and microprocessor-based instrumentation, operational studies to improve and standardize mill working, testing and consultancy services, maintenance audit, energy conservation and additional energy sources, communication and training, post graduate research and appropriate technology for the Decentralised Sector. Assistance to the Government and Public Sector Institutions on matters related to technological aspects of the industry is also an integral part of its activities.
3. **South India Textile Research Association (SITRA)**

SITRA, an acronym for The South India Textile Research Association, and established in the year 1956, is governed by a Council of Administration consisting of member representatives of the Industry, Government and Scientists. SITRA is sponsored by the Industry and is supported by the Ministry of Textiles, Government of India.

Sprawling in a campus of about 13.14 hectares, SITRA is within easy access of a large number of textile mills. With a floor space of about 15,000 sq. m., SITRA houses its well equipped testing, electronics and calibration laboratories, pilot mills, library, etc. SITRA has a full range of sophisticated textile testing instruments and modern machines and is one of the best equipped textile research organisations in the World.

**BEGINNING OF SITRA**

SITRA is one amongst the chain of laboratories in the country. It is an autonomous scientific research organisation registered in May 1951 under the Societies Registration Act (XXI) of 1860. It is governed by a Council of Administration consisting of twenty-six members who include representatives of the Industry, the Central and State Governments and the scientists from reputed Institutions.

The foundation stone of SITRA was laid by the then Prime Minister Pandit Jawaharlal Nehru on 25th December 1955. SITRA commenced functioning in 1956 in the premises of the Southern India Mills' Association (SIMA), Coimbatore, with 44 member mills and two Divisions.
SITRA's own building was declared open on 13th October 1958 by Dr. S. Radhakrishnan, the then Vice-President of India. Shri N. Sanjeeva Reddy, the then President of India inaugurated Silver Jubilee celebrations of SITRA on 8th April 1981.

To begin with SITRA had only two Divisions, viz. i) Liaison and Statistics and ii) Industrial Psychology. The productivity survey in spinning mills was initiated by SITRA in 1956 before the formation of National Productivity Council by the Government of India.

**GROWTH OF SITRA**

Work on the technological aspects was started on 13th October 1958 by Dr. Sarvapalli Radhakrishnan, the then Vice-President of India. SITRA set up simultaneously two more Divisions namely, Mechanical Processing and Textile Physics (1957). Since then SITRA had added five more Divisions; Textile Engineering (1966), Instrumentation (1975), Knitting (1976), Textile Chemistry (1981), and Labour Research and Training (1982). The other landmarks are the formation of Powerloom Service Centre (1974) under a grant provided by SIMA, Jute-blended yarn spinning mill to produce fine counts and a small-scale unit to produce yarn from pine apple leaf (1994) under the aid from United Nations Development Programme (UNDP) and Government grants and an ECO testing laboratory (1996) on a special grant from the Ministry of Textiles. SITRA's physical and chemical laboratories are accredited by NABL in accordance with the standard ISO/IEC 17025: 1999 General Requirements for the competence of Testing and Calibration laboratories.

SITRA has a full range of sophisticated textile testing instruments and modern machines and has been acknowledged as one of the best-equipped textile research organizations in the country. The member mills are spread over all the corners of the country as well as to seven foreign nations; Bangladesh, Indonesia, Iran, Nigeria, Sri Lanka, Nepal and Thailand.
4. Northern India Textile Research Association (NITRA)

Background

Northern India Textile Research Association (NITRA) is one of the prime textile research institutes in the country. The textile industry and Ministry of Textiles, Govt. of India jointly established NITRA in 1974 for conducting applied scientific research and providing support services to Indian textile industry. The organization is situated in a 50 acre land at NCR Ghaziabad, near national capital New Delhi.

Today NITRA’s prime activities include research & development, technical consultancy, quality evaluation of materials, manpower training and publishing technical books and papers. NITRA also provides facilitating services to the decentralized powerloom sector through its seven centres located at Tanda, Kanpur, Meerut, Gorakhpur (all in U.P.), Panipat (Haryana), Ludhiana (Punjab) and Bhilwara (Rajasthan).

NITRA is operating under the administrative control of Council of Administration comprising of representatives from Textile & Apparel industry, Govt. of India, trade associations, academic institutions and Textile Research Associations. The council is presently headed by its Chairman Sh. R. L. Nolkha, an eminent industrialist. Dr. J. V. Rao, veteran academician and a research scientist, is the present Director General of NITRA and Sh. Abhijit Pal, senior textile consultant, is the Director (officiating) of NITRA.
NITRA renders multifarious services to textile & apparel industry through its rich in-house manpower resource of more than fifty experienced technical personnel comprising of textile technologist, textile chemist, garment technologist, textile designer, fashion designer, analytical chemist, mechanical engineer, electrical & electronics engineer, civil engineer, environmental engineer, software / IT specialist & management experts. This team of scientists, consultants, and technocrats is supported by the most modern and state-of-the-art infrastructure facilities available at NITRA. The organization has a clientele of about 1200 textiles and allied sector units that includes overseas clients from U.K., Spain, Indonesia, Thailand, Ethiopia, Sudan, Bangladesh and Nepal.

Activities

NITRA undertakes research projects in textile product development, machine design, instrument development and process development. NITRA also possesses patented technologies based on its R&D works. NITRA’s quality inspection & testing laboratories work 24x7 and analyze materials as per IS, ASTM, DIN, BS, ISO, JASO, AADTCC, EN and other customized standards.

With support from Ministry of Textiles, a Centre of Excellence (CoE) for protective textiles is established at NITRA in the year 2009. The activities of CoE-Protech are product development, preparation of standards/specifications, testing, training manpower, organizing workshops & seminars, and information dissemination as a resource center.

NITRA’s consultancy services include various technical audits, feasibility studies, system certification services, infrastructure set up, asset valuation, third
party inspection, energy conservation & energy audit, design and commissioning of ETPs & CETPs and product/process development.

To meet industrial HRD needs, NITRA regularly conducts various industry-recognized job-oriented techno-management training programs across the complete textile & apparel supply chain on full-time and DLP modes. These programs are conducted under Govt. of India’s Integrated Skill Development Scheme and UP Govt’s ASIDE Scheme. In addition to this, NITRA regularly organizes seminars, workshops and also conducts on and off-shop customized training programs. NITRA also has 170 technical publications of its own.

**Infrastructure**

NITRA houses pilot scale spinning, weaving, knitting and chemical processing workshops for development of different types of yarns and fabrics. It also has pre-sewing, sewing, embroidery and finishing workshops for garment production. All these workshops are equipped with state-of-the-art technology.

NITRA’s infrastructure facilities for quality evaluation includes six NABL accredited quality inspection & testing laboratories capable of analyzing materials as per Indian, overseas and customized standards. All these labs are also recognized by BIS. The CoE has now “Heat & Flame Testing Lab” to test textile and allied products for heat, flame and safety related characteristics as per International and IS standards. This lab has got the NABL accreditation in November’ 2011.

NITRA has a full-fledged Digital Library & Information Centre having stock of about 4400 books including 170 own publications. It also subscribes to 110 national and international journals including E-Journals. The library &
information service is available for textile industry professionals, research scholars, and associated professionals.

**NITRA Technical Campus**

NITRA recently has launched its new academic wing, **NITRA Technical Campus** (NTC) to cater to the manpower requirements of the complete textile and apparel supply chain. NTC offers 4 year B. Tech programs in Textile Technology, Textile Chemistry and Computer Science & Engineering. In addition to that, 2 Year PGDM program in Fashion Retail Management (FRM) is also offered.

All these programs are approved by AICTE. The B. Tech programs are affiliated to Mahamaya Technical University (UP) and the FRM program is offered in collaboration with Manchester Metropolitan University, UK. NTC is spread over a huge multi-facility Wi-Fi campus with 1,68,000 sq. ft area having buildings with latest infrastructural facilities and separate hostel for boys and girls. Details about NTC is available on [www.nitra.ac.in](http://www.nitra.ac.in)
5. **The Synthetic & Art Silk Mills Research Association (SASMIRA)**

The Synthetic & Art Silk Mills' Research Association (SASMIRA) is a cooperative venture set up by the man-made textile industry of India after independence as a multi-functional institute to serve its scientific and technological needs. SASMIRA was established on 12th January 1950 after due recognition by the Council of Scientific and Industrial Research under the Ministry of Science and Technology, Government of India. Later it was linked to the Ministry of Textiles. The imposing marble structure of SASMIRA building stands on a plot of land measuring about 12,000 sq.metres at the foot of Worli Hill Mumbai in the prime location of the city. The building was completed in 1958.

**Objectives**

To render scientific and technical assistance to textile and related industries by

- Research and Development
- Testing and Technical Services
- Technical Education & Training
- Dissemination of Technical Information
- Organising Seminars and Conferences

**Activities**

SASMIRA is engaged in multifarious activities with the prime objective of rendering scientific & technical assistance to the textile industry, thereby assisting its growth and development. These activities include research and development,
technical services and testing, instrumentation, technical education, dissemination of technical information and organising seminars and conferences.

Future thrust of SASMIRA would be on the R & D activities in the area of upgradation of Decentralised sectors, Eco-friendly processes and waste reutilization etc. SASMIRA has been identified as the nodal center for activities on Technical Textiles like Geotextiles, Automotive textiles, Agro-textiles, Medical textiles, Composites, Architectural and Structural textiles etc.

**Awards**

SASMIRA received several awards and certificates from various agencies in recognition of its contribution towards indigenous development of products for saving foreign exchange through import substitution. These include testing instruments as well as special items for Defence. A few of the notable awards are-


- A Silver Shield from Indian Merchants' Chamber for outstanding achievements towards import substitution through instrumentation.

- A certificate of Award by the Board of Awards for import substitution to developing Stiffness Tester in 1975.

- Society of India Aerospace Technologies and Industries (SIATI) award for "Excellence in Aerospace Indigenisation" for development of Contour Woven Socks used in Light Combat Aircraft in 1996.
6. **Man-made Textile Research Association (MANTRA)**

To cater to the ever increasing quality control needs of growing MAN-MADE TEXTILES industry around the city of Surat in South Gujarat, in late nineteen seventies, an idea was mooted to set up a full-fledged independent Research Association for the region. MANTRA was to be set up on similar lines as other National Textile Research Associations.

This was with a view to carry out research and development activities as well as to provide testing and technical service facilities to the man-made fibre textiles industry, in particular, and other allied industries, in general, in South Gujarat.

The idea was supported by the State Government as well as Central Government and the State Government provided land free of cost for the purpose as well as earmarked funds for the building construction and purchase of essential equipments to carry out research and testing activities. Since its inception in 1981, over the last 20 years, MANTRA has equipped itself sufficiently through the grants provided by the Ministry of Textiles, Government of India, and the support of the local industry. Throughout these twenty years, efforts have been made to fulfill the laid-out objectives of MANTRA, and to promote quality, reduce cost of production, process development and control of pollution and environment protection. MANTRA is one of the eight National Textile Research Associations (TRAs) and the leading TRA in man-made fibres, linked to the Ministry of Textiles, Government of India, and recognised as a Scientific and Industrial Research Organisation (SIRO) by Department of Scientific and Industrial Research, Ministry of Science and Technology, Government of India.

To serve the local textile industry more effectively, MANTRA keeps close liaison with the industry around, in general, and the five leading local co-operative textile societies, in particular, viz., (a) The Surat Art Silk Cloth Manufacturers Association (SASCMA), (b) The Surat Vankar Sahkari Sangh Ltd., (c) The SASME Co-operative Society Ltd., (d) The Udhna Group of Weavers Producers Co-operative Society Ltd., (e) The South Gujarat Processors Association.
7. **Indian Jute Industry’s Research Association (IJIRA)**

**Indian Jute Industries’ Research Association (IJIRA)** was conceived on the 10th September 1937 when a small co-operative research department was established at Indian Jute Mills Association (IJMA) at 16 Old Court House Street, Calcutta. Dr. W G Macmillan, Ph. D. (Cantab.), B.Sc., Ph. D. (Aberd.), F.R.I.C., F.T.I. was at the helm as the Chief Chemist along with four other staff. The research department, as it grew in size, was baptized as Indian Jute Mills Association Research Institute in September 1943 – **IJMARI** in short.

**IJMARI** soon became tall in stature and too large in size to be accommodated within the precinct of the Old Court House Street complex, search for an alternative suitable site was set in motion. Finally the present location at 17, Taratola Road was selected and the land was leased on long term basis from the Commissioners for the Port of Calcutta in 1947. The foundation stone was laid on 7th April, 1948 by Mr. J R Walker, the then Chairman of the Executive Committee of **IJMARI** for a new building of the Association. The new Association building was opened by none other than the first Prime Minister of Indian Republic – Pandit Jawaharlal Nehru on 2nd January 1952.

**IJMARI** was wound up in 1966 and was rechristened as **Indian Jute Industries’ Research Association (IJIRA)**. IJIRA then got registered under West Bengal Societies Registration Act,1961. In 1972 a Pilot Plant measuring 54,000 sq.ft was added.

**IJIRA** today is truly world class – in size and sophistication, in research and resources, in capabilities and commitment. In fact **Indian Jute Industries’ Research Association (IJIRA)** has been a pioneer, heralding the concept of Co-
operative Research for industry, introduced for the first time in India, which was later adopted by other organized industries in India to set up their own R & D institutes. In the present day context, where jute is poised for enormous applications in both textile and non-textile areas **IJIRA** plays a lead role in keeping with the world trends and market.

As the demand increased, **IJIRA** spread its tentacles to other parts of the country from time to time. At present it has a regional centre at Guwahati (Assam), called the North East Regional Centre, Guwahati (NERC). The NERC has a Powerloom Service Centre under it.

**IJIRA** expertises are available both to the industry and as well government agencies. Membership of **IJIRA** is open to Jute Mills who can become primary members of **IJIRA** and receive all facilities provided by the Association. They also enjoy voting rights at meetings of the general body of members. Other industries, which are related to jute in any manner, can become Associate Members. They enjoy all the technical facilities of the Association.

**IJIRA** was established with the purpose of bringing about improvements in the jute industry through the application of science and technology. Towards this goal, the Association has a team of highly trained scientific staff, well-equipped research laboratories, an ultra-modern Pilot Mill. In addition to research works, the Association offers its members industrial consultancy in a variety of subjects, extensive testing services, the supply of certain instruments and materials, the servicing of instruments, the free training of laboratory technicians and the facilities of a specialized library on jute technology.
8. **Wool Research Association (WRA)**

Wool Research Association was established in 1963, the only national institute in the field of Wool Technology, is located in a green belt about 35 kms from Bombay (Mumbai). WRA is a centre of business activity of the country. It is well connected by two Highways. The concept of Research & Development in the field of wool technology was initiated by foresighted woolen industrialist and WRA was set up at the well-known Textile Training Institution in the premises of the V.J.T.I., Mumbai. During infancy it had a small laboratory and some educational facilities leading to Diploma in Textiles (Wool). WRA is also recognised for carrying out Applied Research leading to M.Sc and Ph.D. Degrees of Mumbai University.

Impressed with the performance most of the industrialist came forward and decided to have a full-fledged institution dealing with all aspects of wool procured a land site in 1980 of 75,000 sq. yards for the purpose. Subsequently, in 1983 the main building was constructed. In 1993 a Pilot Plant comes into being. In 1996 the ultra modern National Ecological Testing Laboratory was established to create a required infrastructure for undertaking micro analysis of dyes and chemicals, with a view to help exports, check environment & textile pollution, food and drug analysis.

**Major Activities**

- Basic & Applied Research / Projects in Wool Related Technology.
- Formal Education & Vocational courses
- Need Based Courses & Training at site & Consultancy
- Ultra Modern Textile Testing (Physical & Chemical)
- CAD-CAM Woven & Knitting
- Woolen & Shoddy Spinning Pilot plant
- National Ecological Testing Laboratory.
- Friction Spinning – High Tech yarns.