

R & D PROJECTS FROM THE YEAR 2000-2001 to 2009-2010

S. No	Names of the Project	Sponsored by	Abstract	Highlight	Area of Applicability	Contact Persons	Target Beneficiaries	Locations where it is already implemented
<u>2000-2001</u>								
01.	Development of new enzyme additives to augment spinning productivity to a high level in jute industry.	MoT	Enzyme Additive based lubricant technology has been developed as a techno-economically viable process technology for jute Industry.	The Enzyme Additive based lubricant technology implemented by nine jute mills on whole shed basis including three Bimli /Mesta Based mills. The effects of enzyme additive based lubricant formulation are more prominent in coarser counts where low grade fibres are mainly used. Highlights are (a) improvement in spinning productivity (b) reduction in emulsion cost and (c) savings in batch cost . Partly commercialized in six mills and awaiting further commercialization. The Project has been completed,	Jute /Mesta sectors	Dr SK Chakra-barti	Jute / Mesta farmers /entrepreneurs	Nine Jute mills at Kolkata & Andhra Pradesh
02.	A new application of enzymatic method for processing uncut jute fibres on spreader machine for hessian and sacking batches.	MoT	Enzymatic method for better utilization of uncut jute fibres	This particular mode of biochemical treatment on jute relevant to the spreader machine adds a new dimension to the versatility of IJIRA enzyme which is being widely used in jute industry The possibility of uncut use of jute on the spreader machine for both TD4 and TD5 fibres had been explored successfully in mill condition by applying this enzyme. A number of jute mills have implemented this processing technique as a regular practice with or without of IJIRA. Project Completed	Jute entrepreneurs	A K Dutta	Jute / Mesta farmers /entrepreneurs	Two Jute Mills in Kolkata
03.	Development of flexible rapier looms for jute weaving.	IJMA	Development on a flexible rapier loom in collaboration with an indigenous loom manufacture which can run efficiently with jute yarns in the jute industry to produce quality fabrics at the reduced cost of production. Weaving.	Prior to trial some modification in weft handling system were made to for operating the loom with coarse sacking weft. The warp beams spools for this trial have been prepared in M/S Cheviot Co Ltd. During the trial it was inferred that to make the loom suitable for weaving sacking cloth major modifications in the take up mechanism to cope with heavy construction of the sacking fabric and in rapier grippers and welt feeders to handle properly the coarse sacking weft are necessary. Project completed	Jute mills & Jute entrepreneurs	Dr S K Neogi	Jute Industry	M/s Lakshmi Automatic Loom Works and M/S Cheviot Co Ltd, Kolkata

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04	Methodology of Economic Utilization of Lubricants in the Spinning Preparatory Section of Jute Mills	MoT	To conserve the lubricants by (a) reducing the wastage and (b) to reduce the expenditure though conservation of lubricant	(a) 26-29% savings in lubricant used in spinning preparatory sections of two member jute mills has been found. (b) Modified system of application of lubricant has been developed in spreader machine so that lubricating oil reaches the desirable lubricating point and surfaces. (c) Proper training has been given to the oilers of the mills for successfully carrying out the IJIRA method of lubrication in the mills Project completed	Jute Industries	Mr S. Mukherje	Jute Industry	Implemented in one Jute mill in Kolkata
05.	Quality assurance of Food Grade Jute Product	JMDC	To promote food grade jute product, an output of RBO (I) technology for diversified food packaging purpose.	To avoid contamination in Jute bags from mineral hydrocarbon arising from use of petroleum based jute batching oil, IJIRA has developed a hydro-carbon free fibre based RBO (I) to manufacture jute bags as a package for food ingredients named as food grade jute bags.	Jute Industries/ Jute farmers	AK Banerjee	Jute Industry	Implemented in twenty jute mills
06.	To formulate Quality and Productivity Norms for the Jute Industry(Part II) Weaving		To formulate norms for quality and productivity in weaving	Norms have been developed for quality and productivity related parameters namely spool and cop dimension machine speed, winders' and machine productivity etc from winding to weaving sections.	Jute Industries	Mr SN Pal	Jute Industry	Not implemented as such.
07.	To develop New Generation Sacking Bags	IJMA	To develop suitable construction, cost effective and efficient jute bags for packing 50/55 kg food grains and sugar for meeting end-users' requirements.	(a) Development of lighter and cost effective 50 kg capacity food grain and sugar bags in collaboration with IJMA has been completed. (b) Development of 55 kg capacity food grain bags in collaboration with the Office of the Jute Commissioner. (c) Commercial trials of 50 kgs sugar bags completed and found satisfactory Project Completed	Jute Industries	AK Ganguli	Jute Industry FCI	Implemented by jute sector

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08.	Development of Jute Blended Technical Textile Products and Entrepreneurs development		<p>(a) To produce high performance jute blended technical yarns and fabrics for value added applications.</p> <p>(b) To create facilities for entrepreneurs to develop new products and their test marketing.</p>	<p>(a) Different types of jute blended multi-coloured finer yarns have been developed and various types of fabric as substitute of asbestos fabric have been manufactured from such yarns. All these fabrics fulfilled the National and International Standards for different specific end uses. The relevant results have been found.</p> <p>(b) These fabrics have undergone users' trial with the institutional buyers like TISCO, M/S Numaligarh Refinery Ltd, BHEL, Gas Authority of India, NALCO etc. Marketing part of the activities has been undertaken through an entrepreneur already developed for this purpose.</p> <p>Project completed</p>	Jute Industries / Jute farmers	TK Roy	Jute Industry/ Textile Industry	Not implemented.
<u>2001-2002</u>								
09.	Retention of Optimum Moisture in Jute by upgraded Enzyme based Technology		<p>(a) To retain optimum process moisture in jute particularly in adverse climatic condition (both in conventional and food grade Jute Products).</p> <p>(b) To assure standard commercial moisture regain in finished jute products, viz sale yarn, CBC, Export quality Jute decorative etc</p>	<p>Several biochemical formulations based on either enzymes or organic humectants or their combination has been developed and laboratory feasibility studies confirmed higher moisture retention.</p> <p>Project completed.</p>	Jute Industries	Dr SK Chakra-bartii	Jute Industry	Implemented in four Jute mills in Kolkata
10.	Value addition to jute floor covering by controlling its microbial load (Bio-burden).	IJMA	To develop jute floor covering with multiple functionalities, such as defined microbial load and extended life.	<p>Twenty three textile friendly non-metallic organic biocides have been screened and anti-microbial efficacy of twenty organic biocides has been assessed. Out of twenty biocides evaluated so far, five potent anti-fungal and four anti-bacterial compound have been identified which are capable of reducing the microbial count of jute/jute floor covering below desired level. Dose response studies of these compounds (laboratory scale) have been carried out. Based on the above, several broad spectrum cost-effective anti-microbial textile friendly formulations have been developed.</p> <p>Project Completed.</p>	Jute Industries	Dr SK Chakra-bartii	Jute Industry	Awaiting implementation in DJPs

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11.	Radiation Sterilization of Jute Packaging Material	BARC	To develop a sterilization process for jute products using radiation technique.	Standard food grain bags of six each quality were treated with gamma irradiation (Co ⁶⁰) at a dose of 25 KGY at Bhaba Atomic Research Centre, Mumbai. The microbial assay and physical testing of irradiated and non-irradiated bags were carried out at IJIRA. Result shown that gamma irradiated bags is free from micro-organism but there were loss in tensile and seam strength ranged between 5% to 20%. Project completed.	Jute Industries	AK Dutta	Jute Industry	Awaiting implementation.
2002-2003								
12	Field trials with different newly developed 50kg capacity jute bags for their standardization	MoT	50kg capacity jute bags of optimum quality.	(a) Initiates bulk scale field trial of cost effective lighter 50 kg capacity sacking quality /sugar bags. (b) Introduced three types of cost effective lighter 50 kg capacity food grains/sugar bags (c) Field trial done for packing coarse and powdery substances (d) Initiated formulation of BIS specification	Jute Industries/FCI	TK Roy	Jute Industry	Awaiting implementation
2003-2004								
13.	Optimization of man-machine ratio for productivity improvement in jute industry and development of norms.	JMDC	Productivity norms for jute industry to optimize man-machine ration for winding and weaving	Work measurement study was conducted to assess existing workload on operators and productivity of machines and standard productivity and man-machine ratio have been estimated which may be considered as .Norms' for these occupations Project Completed.	Jute Industries	G. Chattopadhyay	Jute Industry	Awaiting implementation
14.	Implementation of moisture retention technology for jute yarn.	MOT	(a) To retain optimum moisture in yarn spinning particularly at low humid condition. (b) To improve overall quality of yarn fabric. (c) To assure commercial moisture retain in yarn fabric	A biochemical process technology has been developed to assure optimum moisture in jute processing during adverse climatic conditions. Project Completed.	Jute Industries	Dr SK Chakrabarti	Jute Industry	Implemented in four jute mills

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15.	Technical promotion of jute geo-textiles (a continuing project from 2003-2004 to 2009-2010)	JMDC	Enhanced field of application of jute Geo-textile.	<p>It is a continuing project to provide:</p> <p>(a) Technical support and guidance to jute mills to produce JGT as per the standard/specific requirement including Pilot Project with JGT under PMGSY.</p> <p>(b) Commercial trial of JGT for bank protection, road construction, railway embankment protection, slope protection, landscaping, fly ash management, mines spoil stabilization work.</p> <p>(c) Technical presentation and interactive conferences within and outside state.</p> <p>(d) Participation in technical exhibition , conference & seminars in National & international level.</p> <p>(e) Continuing awareness course on application of JGT for the junior and middle level engineers of different departments and imparting training to the engineers/contractors involved in the project.</p> <p>(f) Collaborative technical support to JMDC, IJMA, CRRI, IIT, STUP Consultants and Civil Engineering Deptt of different academic institutions.</p> <p>(g) Demonstration, Documentation & dissemination.</p> <p>Project completed.</p>	Jute Industries PWDs, Railways, Highways etc	PK Choudhury	Jute Industry	Implementation of JGT has been continuing

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16.	Development of new geo textiles Part A : Development of woven jute geo textiles for soil and resource conservation Part B: Rot Resistant jute Geotextiles Part C: Soil Interaction	JMDC	To design woven Jute Geo-textiles with improved physical and functional properties and to find new application areas. Knowledge on the life cycle of Jute Geo-textiles.	(a) Application of fabric engineering technique to design three new types of strong and dimensionally stable woven jute geotextiles as compared to available varieties. (b) Water repellent JGT have been developed in the laboratory scale using proprietary chemicals to ensure its effectiveness for road construction and river bank protection (c) Bitumen compatibility test with water repellent jute fabrics have been done. It has been found that these items are water repellent but absorb bitumen in usual course. (d) Several application areas have been identified. (e) Patent allotted by Patent Office on 08 July 2009. Project completed	Jute Industries	Mr U Barman Roy	Jute Industry/Railways/irrigation Deptt/ PWDs	Patent filed on Part B
17.	Designing of new metallic card clothing for jute cards	IJSG	Better jute carding machine.	(a) Improve the carding action in order to produce yarns with improved quality and increase the productivity at carding. (b) Project completed in August 2009 and demonstration at IJSG Dhaka. Project Completed	Jute Industries	DK Bandyopadhyay	Jute Industry	In one jute mill in collaboration of Miltex
18.	Quality assurance of food grade jute bags	MoT	It is a continuing project. For jute bags / products of food grade quality.	IJIRA provided technical services on Quality Assurance of Food Grade Jute Products (FGJP) to sixteen jute mills and one FGJP Converter. During the year 2008-2009 number of inspection carried out is six hundred and ten and about thirty three thousand tons of FGJP have been tested(as per IJO 98/01) and certified by IJIRA In addition to that several FGJP Process Auditing Capability Certification have also been carried out by IJIRA. Project completed.	Jute Industries/ jute entrepreneurs	Dr SK Chakrabarti	Jute Industry	Commercialized in Jute Sector for FGJP

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19.	Implementation of RBO(II) technology to manufacture HCF bags (50 kgs)	MoT	Jute bags / products of food grade quality.	The technology demonstrated to the mills in semi-bulk scale trials. In spite of some difficulties in processing, this RBO technology has copious advantages over JBO. Project completed	Jute Industries	AK Banerjee	Jute Mills	Not implemented
20.	Development of packing ring chair sheet-cum-backrest for EMU coaches	MoT	Newer jute composite products.	Entrepreneurs were involved in the development and necessary drawing and specifications were finalized. Project completed.	Jute Industries /Railways	Dr A K Rana	EMU units of railways	Excel Composites Pvt Ltd, Kolkata-700002
21.	Optimization machine and labour productivity for some occupations in jute mills	MoT	Productivity norms.	Study was conducted at 3 mills on cutting, hemming, hiracle and bale press. Time study was conducted on both machines and operators to measure time for different operations and stoppages. Standard time of work and performance of the entire section at each stage were evaluated. In-plant norms from the study can be derived. Project Completed	Jute Industries	G Chattopadhyay,	Jute Industry	Not implemented
22.	Biochemical process technology for retaining the optimum moisture in bulk processing of jute fibre	MoT	Moisture retention technique for jute fibres.	Biochemical process technology developed for assuring steady optimum moisture profile at different stages of jute processing has been successfully implemented in three jute mills on whole shade basis. Project completed	Jute Industries	S K Chakraborty,	Jute Industry	Implemented in six jute mills in Kolkata

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23.	Reduction of microbial count of value added jute products	MoT	Microbial damage resistant value added jute products.	<p>(a) To reduce the total bacterial, fungal, yeast and other associated microbial count of value added Jute Products especially in CBC by organic biocides.</p> <p>(b) To develop broad spectrum anti-microbial formulations for overall reduction of microbial count of Jute/Jute products.</p> <p>(c) To produce Carpet Backing Cloth having acceptable microbial count</p> <p>Microbial load of several value added jute products including decorative Hessian cloth, carpet backing cloth and jute matting etc collected from Bally and Gloster Jute Mills have been assessed in the laboratory. Out of eleven jute products assessed so far, only one meets the emerging International norms of microbes set for diversified products. Microbial load of the above products have been brought down below safe limit by non-metallic organic biocides to meet the overseas buyers requirement. Observed that organic biocides impart durable anti-microbial property on jute. Pilot scale production imparts durable antimicrobial property on jute. Pilot scale production of sanitized decorative jute cloth at IJIRA pilot plant has been carried out.</p>	Jute Industries	Dr SK Chakra-barti	Jute Industry	Awaiting commercial-lisation
<u>2003-2004</u>								
24.	Biochemical Process Technology for retaining the optimum moisture in bulk processing of jute fibre	MoT	Biochemical process technology	<p>Bio-chemical process technology developed for assuring steady optimum moisture profile a different stages of jute mills on whole shade basis</p> <p>Project completed</p>	Jute Industries	Dr SK Chakra-barti	Jute Industry	Six jute mills in Kolkata

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25	Improving industrial efficacy of RBO Technology	IJIRA	Mixture of RBO & Polymer	Mixture of RBO & polymer has been found to improve the efficacy of this eco-fibre lubricant at mill shop floor	Jute Industries	Dr SK Chakrabarti	Jute Industry	Not implemented
26	Development of Anti –Microbial Jute Products through reduction of microbial load	MoT/ GoI	Anti-microbial bright & dyed Hessian & mat weave fabric have been developed using non-metallic biocides	Two new low cost, textile friendly and non-metallic anti microbial formulation have been developed to reduce the microbial load of jute products and to produce value added export quality sanitized jute products. Both laboratory and pilot scale trials have been successfully completed.	Jute Industries	Dr SK Chakrabarti	Jute Industry	Awaiting implementation
27	Development of new geotextiles Part B: Rot resistant jute geotextiles	JMDC	Develop technology for low cost rot-proof Jute Geotextiles.	Using non-copper and non-bituminous biocides formulation rot resistant jute geotextiles has been developed.. Product has patented and under commercialization.	Jute Industries	Dr SK Chakrabarti	Jute Industry	Patent filed
2004-2005								
28	Development of woven jute geotextile for civil engineering applications	JMDC	(a) To design woven jute geo-textile with improved physical and financial properties(b) to add other functional properties (c) to find out new application area	Three low cost fabrics (25 to 35%) were produced over the conventional fabric (102x39 per dm - 760 gsm) had been prepared which showed better fabric strength than the conventional fabrics. Application areas are (a) construction of road & railway embankments on cohesive soil (b) strengthen road sub grade (c) protection of banks of river and water ways at reduced cost.	Jute/ textile industries	T K Roy	Jute Industry	Developed but not implemented
29..	Productivity Norms for the Jute Industries for 50 kg B Twill bags for foodgrains.	JMDC	Productivity norms for 50 kg B Twill bags for food grains, 50 DW plain bag for sugar and Hessian fabric (9x8-40“-7 oz /yd have been developed	(a) Developed Productivity Norms for the Jute Industry for (a) Hessian Fabric (b) 50 kg capacity B Till Bags for food grain (c) 50 kg Capacity DW Plain Sugar Bags (b) Mills follow IJIRA recommendations as and when required. (c) Project was an inter firm Comparison Study.	Jute Industries	G. Chattopadhyay	Jute Industry	Not implemented
30	Development of Durable Jute Geo-textile and its soil interaction	JMDC	Aim is to:- (a) Develop Durable Jute Geo-textiles (b) To predict life of Durable Jute Geo-textiles (c) to Assess environmental impact of Durables Jute Geo-textiles	A low cost, flexible and durable Jute Geo-textile has been developed which retain its strength under soil for longer period. JGT Pilot scale production of durable JGT and evaluation of its performance property have been carried out. Patent application filed.	Jute Industries	PK Choudhury	Jute Industry	Patented

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31	Development of wider and stronger Jute Geo-textiles	JMDC	Developed two meter wide woven Jute Geo-textiles of varied tensile strength like 15 KN/m, 20 KN/m and 30 KN/m which has minimized wastage due to overlapping of JGT	<p>(a) Mills are supplying the material to the end users as recommended by IJIRA. IJIRA is conducting awareness programme for further use of Jute Geotextiles.</p> <p>(b) The products developed are being manufactured by the jute mills and widely used by road, irrigation and railways.</p> <p>(c) After development it is in commercially acceptable mode.</p> <p>(d) Consumption of jute geo-textile during the year 2008-2009 has been increased a record of sixty times high over the year 1999-2000.</p> <p>(A continuing Project)</p>	PWDs/NHs/ Railways/ Irrigation depts.	PK Choudhury	Jute Industry	Awaiting implementation
32	Implementation of Skill Development Programme on Improving Agriculture Practice, Retting and Upgradation of Jute Fibre Quality	IJIRA- NERC MoA/ GoI	In the Skill development programme of Jute Cultivators/ Farmers, traditional knowledge of jute cultivation has been refreshed	<p>Through four different modules as under approximately 2955 farmers of Assam have been trained on the following:-</p> <p>(a) Improved jute agronomical practices.</p> <p>(b) Modified jute retting practices</p> <p>(c) Technology transfer for up gradation of jute fibres by chemical/bio-chemical routes.</p> <p>(d) Jute fibre quality assessment and BIS system of grading.</p>	Jute Farmers	Dr J Srinivasan	PSC/ NERC Guwahati	Awaiting implementation

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	Designing of New Metallic Card Clothing for Jute Cards.	IJSG	Tooth geometry of metallic wires of the proposed metallic card clothing system has been developed	Work done on (a) Designing of suitable tooth geometry of metallic wire for processing jute fibre on conventional jute finisher card(Miltex). (b) Procurement and manufacture of profiled wires about 50% increased population of carding points as compared to the existing pin density of staves. (c) Mounting of metallic card clothing on the Cylinder, Feed and Feed stripe, 3 pairs of Workers/Strippers, Doffer of 3.1/2 pair half-circular Miltex Jute Finisher Card Project completed successfully and technology demonstration in August 2009 at IJSG, Dhaka	Jute Industries	S Mukherjee	Jute Industry	Feasibility study carried out in one jute mill in Kolkata
2006-2010 (CURRENT PROJECTS)								
34.	To find Alternative to Conventional Jute Batching Oil for improving Spinnability and to Produce Non Toxic and Hydrocarbon Free Jute Products	MoT/JMDC	To develop an Eco-compatible Jute fibre lubricant as a viable alternative to conventional Jute Batching Oil(JBO) to ensure eco-friendly processing of jute fibre	Upto October 2009 progress of work in JTM- 01 is around 54% which represents literature and market survey, up gradation of RBO Technology, mini trials at IJIRA Pilot plant for optimization of Eco-lubricant formulation developed followed by two pilot scale trials on Hessian and sacking warp qualities in an IJMA identified jute mill under actual mill conditions as per approved work plan. While carrying out Pilot scale trials due care has been undertaken to eliminate totally the identified limitations of existing RBO Technology as per the DPR.	Jute Sectors/ Jute based industry	Dr SK Chakrabarti	Jute Industry	Plot scale and semi bulk scale trials completed
35.	Manufacture of Jute Braided Cloth by Appropriate Design Incorporation in Braiding Machines	MoT/JMDC	To manufacture jute circular braided cloth on a braiding machine.	(a) The progress of work for JTM-04 till January 2010 is 30.36% which represent pursuing new concepts for fabricating Braiding machine suitable for processing with soft spun more hairy jute yarns. Besides the survey works have been carried to identify the new products with jute braided cloth for different applications and their market potentiality. (b) Need assessment survey on braided jute products with special emphasis on nursery sapling and packing product like bottle carry-bags has been carried out which suggests that Jute based braided products are gaining popularity in both and global market and good deal of demand could be expected by the year 2012.	Jute Industries/ jute entrepreneurs	Dr Mahuya Ghosh	DJP Sector	Not Implemented

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36.	Development of lightfast bleached, dyed and finished jute fabrics for manufacturing export quality home textiles	MoT/JMDC	To develop an appropriate chemical treatment method either at core or at finished stage to impart lightfast character in bleached/bleached and dyed/printed jute.	The progress of work on JTM 08 is around 41% which represents market and literature survey, optimization of bleaching process with special additive like FBA, UV absorber to impart light fastness of 4 above. Optimization of dyeing process and characterization of physical parameters, such as loss of strength of lightfast bleached jute etc are being carried out.	Jute Industries	Dr Susmita Ghosh	Home Textiles	Development continuing
37.	Development of Technology for manufacturing of Ramie based jute products	MoT/JMDC	To develop technology for spinning jute ramie blended yarn(8.0 lbs and below) on the jute spinning system.	<p>The estimated progress of work of JTM Project 19 is around 41% which represents development of the Eco-degumming process of Ramie fibre and its optimization in laboratory and Pilot Scale level. Characterization of physical properties of degummed ramie fibre has also been carried out. Spinning of Jute-Ramie blended yarns (80:20), 50:50) has also been initiated at IJIRA Pilot Plant using conventional Jute Spinning system.</p> <p>The target area of application would be developed of Jute-Ramie blended fabrics for Home Textiles applications which include Drapery, Upholstery, Table covers & mats and home decorative.</p> <p>As per approved DPR IJIRA would transfer the eco-degumming technology of Ramie fibre to the Ramie growers and concerned technologists of North East Region in near future through conducting workshop/ seminars etc.</p>	Jute Industries	Mr DK Biswas	Home Textiles/DJP Sector	Development continuing
38.	Development of jute-bamboo composites for application in rural areas	MoT/JMDC	To develop composite material for rural application (building components, transport sector, structural application, packaging, furniture etc)	Laboratory process parameter is also optimized. Preparation of prototype products is in progress. Inclusion of bamboo in the form of mat increases most of the mechanical properties of the composites. Progress of work is around 61%.	Jute Industries/Jute farmers	Mr Somen Das	Jute/Bamboo farmers	Successful experimentation completed, awaiting commercialization.

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39.	Development of Aroma Based Home Textiles	MoT	To impart multiple fragrances to natural and blended fabric based products for developing aroma textiles.	Project approved by the MoT and started in Sep 2009. The aim is to:- (a) To impart multiple fragrance to natural and blended fabric based products for developing aroma textiles. (b) To develop a niche market of some textiles with high end functionalities and increase its market acceptance through product diversification. (c) To develop durable aroma finished natural and blended home textiles (with wash fastness upto 30 normal washing cycles) Expected outcome:- (a) Aroma Textiles based on natural and blended fabric of using high end Textiles. (b) A reliable knowledge bank on the possibilities of using high end specialties finishes for development of smart textiles with natural and blended fabrics.	Jute Industries/ Jute entrepreneurs	Dr SK Chakrabarti	DJP units/Home textile sector	Pilot scale trial continuing
40.	Multifunctional Ceramic based nano-finishing out outdoor textiles by sol-gel method	MoT	Development of Technology for in-situ generation of ceramic nano particles to impart multiple functional properties on natural and blended textiles.	Project approved by the MoT and started in Sep 2009. The aim is to:- (a) Development of technology for in-situ generation of ceramic nano particles to impart multiple functional properties on natural and blended textiles. (b) To design value added natural and blended textiles products with desired functional properties for out door applications.	Jute Industries/ Jute entrepreneurs	Mr Sandip Basu	Jute/Textile Industry	Lab scale trial continuing
41.	Development of Low Cost Jute Bags	MoT	To develop alternate 50 kg capacity jute bags for packing food grains and sugar.	Project approved by the MOT in January 2010. The aim of this project is:- (a) To develop alternate 50 kg bags for packing food grains and sugar. (b) To assess the end use performance and customer acceptance by undertaking extensive field trials of the alternative jute bags. (c) To establish BIS standards for the alternate jute bags.	Jute Industries/ Jute entrepreneurs/ Jute farmers	Mr Sandip Basu	Jute Industry	Initial product design & trial continuing

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42.	Development of Low Cost Nets by Netting Technology	IJSG	Develop and design jute suitable for Agro husbandry and forest waste management by developing netting machine	<p>The project has been approved by the IJSG and waiting for the release of fund. Expected outcome of the project is:-</p> <p>(a) New type of low weight, low cost structure with strong, cheap and bio-degradable jute yarn..</p> <p>(b) to produce unique type of jute net bag for desired application.</p> <p>(c) Jute netting machine of desired productivity</p>	Jute Industries/ Jute entrepreneurs/ Jute farmers	Mr DK Bikswas	Jute Industry	Not yet initiated.
43.	Development of Rapid Test Method for Determination of Unsaponifiables of Fdd Grade Jute Products	IJSG	To develop a UV Trans-receiver device for rapid non-destructive detection of undesired hydrocarbon contamination in FGJP as unsaponifiable matter. for ensuring toxic hydrocarbon free FGJP.	<p>The project has been approved by the IJSG and waiting for the release of fund. Expected outcome of the project is:-</p> <p>(a) Development of a UV Trans-receiver Instrument for rapid online detection</p> <p>(b) A non-destructive method of evaluation of Unsaponifiables in FGJP.</p>	Jute Industries/ Jute entrepreneurs/ Jute farmers	Dr SK Chakrabarti	Jute Industry/Jute entrepreneurs	Not yet initiated.