



**INDIAN RUBBER MANUFACTURERS  
RESEARCH ASSOCIATION**

**QUALITY POLICY**

- To provide Timely, Innovative & World Class services by systematically adhering to Quality Management Systems and Procedures.
- To design, develop and validate the Rubber Products as per requirement of our customers.
- To provide Reliable, Dependable and Traceable testing & evaluation services to our customers.
- To enhance the Technical Competency of rubber and allied products manufacturers and end users by imparting training.
- To strive to continuously improve Safety, Morale and Work Environment of all our stake holders by implementing pertaining international standards like QMS, EMS, OSHAS including ISO 17025 – 2005.

**Dr.P.Thavamani  
Director**



**MEMBERS OF THE GOVERNING COUNCIL: 2011-12**

**PRESIDENT**

Dr. Raghupati Singhania,  
President, IRMRA  
Vice Chairman & Managing Director,  
JK Tyre and Industries Ltd.,  
Link House, Bahadur Shah Zafar Marg,  
New Delhi – 110002.

**GOVERNMENT OF INDIA**

Joint Secretary, DIPP, New Delhi  
Deputy Secretary, DIPP, New Delhi  
Under Secretary (Finance), DIPP, New Delhi

**COUNCIL OF SCIENTIFIC & INDUSTRIAL  
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Polymer Science & Engineering Unit,  
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Parminder Bajaj – **Principal Member**  
Scientist 'G' & Chief (Tech)  
Bureau of Indian Standards  
Manak Bhavan, 9 Bahadur Shah Zafar Marg,  
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Tel- 011-23231120

**Shri. A. Datta, - Alternate Member**

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**RUBBER BOARD**

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**ALL INDIA RUBBER INDUSTRIES ASSOCIATION  
(AIRIA)**

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Lathia Rubber Mfg. Co. Pvt. Ltd.  
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**AUTOMOTIVE TYRE MFRS ASSOCIATION (ATMA)**

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– **Alternate Member**  
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New Delhi-110 016.  
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[ittac1@gmail.com](mailto:ittac1@gmail.com)

**PAID MEMBERS FROM INDUSTRY**

Mr. Sridhar Sankar,  
M/s. Prabhat Elastomers Pvt.. Ltd.  
Shed No.- A-1/306,407,409,411,413,415,  
Road No. 4, G.I.D.C.,  
Sarigam – 396 155. Dist. Valsad (Gujarat)

Mr. Mahesh Velu,  
Vako Seals Pvt. Ltd.,  
P.O. Box No. 9063,  
3/ 4, KRDN Trust Estate,  
Off. Aarey Road, Goregaon (E),  
Mumbai – 400 063.

**IRMRA'S DIRECTOR (EX- OFFICIO)**

Dr.P.Thavamani, Director

**INVITEES FOR INDUSTRY LIAISON**

Mr.Niraj Thakkar,  
Precision Rubber Industries Pvt Ltd.,  
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Tel.25821778/25834360

Mr. Rajendra V.Gandhi,  
Managing Director  
GRP Ltd.,  
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Kiroi Road, Off. L.B.Shastrri Marg,  
Kurla (W). Mumbai – 400070  
Tel. 67082500 / 2600

Dr. M.S.Banerji,  
Head – R&D & Polymer technology,  
Mansons Automotive Rubber Pvt. Ltd.,  
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Khar (W), Mumbai – 400 052  
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Mr. V.K.Misra,  
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604  
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25834650/51/52  
Fax: 25823910  
Email: [rubberin@bom7.vsnl.net.in](mailto:rubberin@bom7.vsnl.net.in)  
Website: [www.irmra.org](http://www.irmra.org)

**Status of Institute:**

Registered under the Societies  
Registration Act XXI of 1860  
Regn. No.S.1199, Dt. 13.1.1958

**Bankers:**

**State Bank of India**  
Wagle Industrial Estate Branch  
Thane – 400 604

**Axis Bank Ltd.**

Dhiraj Baug, LBS Marg,  
Near Hariniwas Circle  
Thane (W) – 400 602

**Auditors:**

**M.M.Nissim & Co.,**  
Chartered Accountants  
Barodawala Mansion,  
Dr.A.B.Road, Worli  
Mumbai – 400 018



## **Vision :**

To be a committed world class rubber and allied material research, development, testing and training centre with innovative & value added service to customers

## **Mission :**

To serve the rubber & allied industries to fulfill their scientific & technological requirements in order to improve their global competitiveness.

## **Values:**

- Fairness
- Integrity
- Reliability
- Excellence

**PRESIDENT'S MESSAGE**



Good Morning Ladies and Gentlemen!

It gives me a great pleasure to welcome you all to the 54<sup>th</sup> Annual General Meeting of Indian Rubber Manufacturers Research Association (IRMRA). The Annual Report containing Director's Report and the Auditor's Annual Accounts Report for the financial year ending March 31, 2013 has been circulated to you and with members' consent, I shall consider the same as read.

During the financial year 2012-13, the Indian economy passed through a tough and challenging time; GDP growth, the lowest in the last decade, slowed down to 5% compared to 6.5 % recorded in the previous financial 2011 – 12. Although various measures taken by the Reserve Bank of India ( RBI), have resulted in moderating the high inflationary trend, the high current account deficit, interest rate, spiralling fuel price, lack of new capital investment, partial ban on mining, and employment generation had combined adverse effect on economic growth, and weakened the Indian currency.

The slowdown in economic growth had an adverse effect on the automotive sector due to spiralling fuel price and the high interest rate. The prospects of rubber industry depends to a large extent on the growth of automotive sector. During the FY 2012-13, the automotive sector considerably slowed down, and passenger car and multi utility vehicle segment grew by merely 2.8%. Nevertheless, IRMRA team continued its relentless drive towards supporting the rubber industries by testing and certification, training, consultancy, augmentation of an array of testing capabilities, and strategic planning and execution of research and development projects. This helped in containing the impact of economic slowdown on its own income growth.

I would like to congratulate the team IRMRA for their service to rubber industries and record my sincere appreciation for all our Governing Council Members, Government Nominees and Officials from the Ministry of Commerce & Industry for their valuable contribution to IRMRA's success over the years.

Dr. Raghupati Singhania  
President,  
**Indian Rubber Manufacturers Association.**  
Vice Chairman and Managing Director,  
**J K Tyres & Industries Ltd.**



**DIRECTOR'S ANNUAL REPORT 2012-13**



Dear Members,

We are pleased to present Indian Rubber Manufacturers Research Association's (IRMRA) 54<sup>th</sup> Annual Report for the year 2012-13.

IRMRA established in 1959 as a scientific and industrial research organization for promoting basic and applied research & development activities for rubber and allied materials in our Country, registered under the Societies Registration Act 1860 and governed by a Governing Council consisting of representatives from Rubber Industry, Central and State Govts., Rubber Board, prominent research and development ( R & D) establishment, academic institutes, etc., is functioning under the administrative control of Ministry of Commerce & Industry, Govt. of India, New Delhi.

Over the last 50 years, IRMRA has expanded and diversified its activities in both tyre and non-tyre sectors and has become a unique R&D '**Centre of Excellence**' at par with any internationally renowned Institute of repute in the World.

The state of the art facilities created by IRMRA over the years and the expertise developed by its scientists are being utilized by the industries such as rubber, polymer, paints, chemicals and textile to name a few .

Apart from its main expertise in the fields of testing and certification (Tyre & Non Tyre Testing), training, research and product development, consultancy and sponsored research, IRMRA has diversified its activities in different areas to cater to the needs of the rubber and allied industries.

Some of the main activities undertaken by IRMRA are as under:

- Process and Product Development
- Material Selection / Specialization and Development
- Reverse Engineering / Compound Development
- Rubber Engineering and Finite Element Analysis (FEA)
- Quality Audit and GMP services
- Consultancy services on Rubber Technology & Laboratory Management System (LMS)
- Storage and Service Life Prediction
- Quality Control / Assurance
- Process Improvement / Trouble Shooting
- Failure Analysis
- Forensic Investigation

IRMRA has been recognized by the Dept. of Scientific and Industrial Research (DSIR), Govt. of India, New Delhi. It is also recipient of many accreditations / recognitions and certifications from many national and international agencies of repute such as NABL, Underwriters Laboratories (USA), ISO, CEMILAC, DGMS etc.

IRMRA's clientele includes Govt. / Semi Govt. organizations such as Defence Sector (Indian Navy, Air Force and Ordnance Factories), BARC, RITES, SRTC's, Mazgaon Docks, BPCL, HPCL and also reputed private sector companies such as GE (USA), L&T, Kirloskar Group, Bajaj Auto, Tata Group, Mahindra & Mahindra to name a few.

IRMRA has won the confidence of these reputed clients by rendering dedicated, reliable and timely service over the years. It has successfully indigenized and developed through reverse engineering and continuous research & development, many critical rubber components required by the industries.

The main activities and achievements are presented with more details for your perusal.

Despite economic slowdown IRMRA has recorded 12% growth in the operating income and generated adequate surplus for expansion in Chennai, and Kolkata as well. Meticulous planning and execution of testing, and product development activities indeed improved our operational efficiency and thereby served our customers faster and better. The spiraling input cost, overheads and manpower costs, to some extent, have been controlled through improved operational efficiency and also by working extended hours. Apart from serving the domestic customers, the tyre testing centre has been giving service to multinational tyre companies and thereby earned sizable foreign exchange from the overseas customers. In the last 3 years, despite increasing expenses, IRMRA's overall surplus in the Balance Sheet is grown up by 9 times.

### 1) PERFORMANCE OF TESTING DIVISIONS

The non-tyre rubber product testing division mainly focused on material testing, reverse engineering, product testing and conformity certification. During the course of current financial year, this division developed many test methods, customized testing procedures, and tools and fixtures for automotive component testing and thereby enhanced the scope of non-tyre testing and added many new customers and members as well .

#### ➤ Poly Aromatic Hydrocarbon ( PAH)



The European Union Directives have restricted the usage of aromatic oil in rubber products that the poly aromatic hydrocarbon (PAH) content should not be more than the stipulated norms and which came into effect from November 2012.

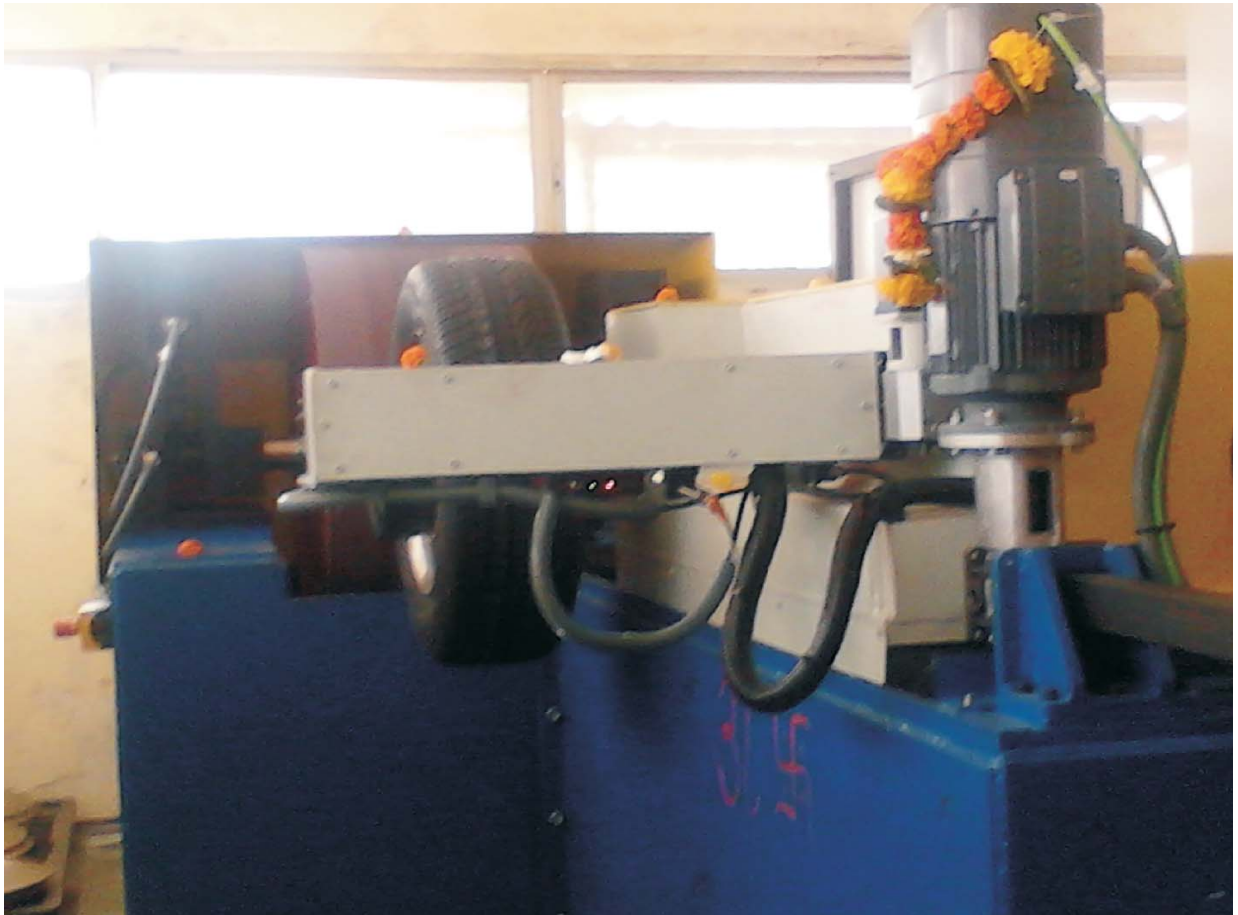
Since the aromatic oil is extensively used as plasticizers in rubber products, there was an urgent need to establishing a reliable method for extraction, identification and quantification of all the poly cyclic aromatic hydrocarbons.

Hence, the material testing division quickly developed a method for extraction, detection and quantitative estimation of PAH using the infrared spectrophotometer (IR) and Gas chromatograph coupled with flame ionization detector ( GC – FID). This method has given faster and reliable results at much affordable testing cost.

The tyre testing division apart from widening the national and international customer base for testing and certification under the scope of Quality Order, focused on developing new test methods for evaluating the quality of tyres, failure

investigation, quality improvement, trouble shooting etc. Some of the key activities are highlighted as follows

- **Tyre uniformity Testing machines** successfully installed and commissioned during the month of December 2012 for testing the tyre uniformity by measuring radial and lateral forces, and their variations, conicity, ply steer & radial and lateral run outs under dynamic conditions. This facility is being utilized by some of the tyre companies and automotive OEMS as well.



➤ **Tyre Rolling Resistance**

➤ As fuel efficiency of passenger car is being one of the decisive factor while buying a new car, the automotive OEMS are keen to use tyres with low rolling resistance.



Our tyre testing centre has developed the required expertise for testing the rolling resistance of tyres as per international standards and made very good comparison with internationally reputed tyre testing centres. Our facility is being extensively used by many automotive OEMS for testing the rolling resistance tyres for their new models and also for bench marking the quality of tyres from different manufacturers

➤ **Defects Investigation and Failure Analysis of Fighter Aircraft Tyres .**

Shearography is one of the most important equipment for non-destructive investigation of defects such as flaw, separation and delamination of plies, air entrapment and any other foreign matter inclusion in the tyre. The fighter aircraft tyres for Su 30 aircraft developed by an Indian Tyre company have been tested using our shearography and after confirming that the tyres were free of defects, they were qualified for the service fitment on the aircraft.







Most of the failed fighter aircraft tyres so far investigated found to have failure due to localized excessive wear and degradation resulting in tyre burst. The shearography has also been used for the investigation of unused aircraft tyres having surface defects.

## **2) TRAINING AND WORKSHOPS ORGANISED BY IRMRA .**

IRMRA's scientists have regularly conducted training programmes and workshops for the benefit of the industry and also to extend technological support to small scale industries, IRMRA's officials delivered lectures in many programmes organized by TISSA, COSIA, MSME, SIDBI for budding small scale entrepreneurs in our Country.

During 2012-13, IRMRA conducted 13 short term technical courses with practical demonstration on Rubber Technology, which benefitted around 400 participants across the country.

IRMRA conducted corporate customized training courses for the Automotive Industries like Tata Motors, Material Organisation, HPCL, Vizag etc. at their own training centres. Two days workshop was organized for the benefits of the engineers attached with State Transport Corporation (STU), which had given good opportunity for them to get insight about the problems associated with rubber products and our scientists had given enough inputs to address those rubber related problems. Participants appreciated the training programmes and interacted with our scientists to clear their fundamental doubts towards designing of rubber components for auto industry.

## **3) PARTICIPATION IN SEMINARS, EXHIBITION, AND CONFERENCES:**

Our employees are encouraged to participate in seminars, exhibitions and conference for acquiring knowledge, skills, learning about new materials, test method, standards, procedures etc. and thereby they keep abreast with developments taking place in the arena of rubber technology. Further such platform is used for displaying IRMRA's potential and capability to serve the rubber and allied industries. Mr. K. R. Krishnan, Senior Assistant Director - Customer Service Cell participated in the "Symposium on International Automotive Technology (SAIT)," organised by SAE and NATRIP, Pune, and also attended the "International Summit for Packing Industry" conducted by Indian Institute of Packaging (IIP), Mumbai.

### **3.1) Participation in Indian Rubber Expo 2012, Mumbai**

IRMRA put up a stall during the IRE 2012 held from 21<sup>st</sup> – 23<sup>rd</sup> January 2012 and displayed the various tyre and non-tyre product design, development, testing, and reverse engineering capabilities for the benefit of those associated with rubber and allied materials.



for establishing extension centres, and enhancing the scope of IRMRA's testing and consultancy services.

### **3.2) Support to Rubber Conference / workshop.**

IRMRA provided support for the students and faculties who have been invited to attend the workshop, conference and the training programme organized concurrently with IRE 2012 by way of providing transport from IRMRA to exhibition ground and boarding lodging for all the participants.

IRMRA supported the conference and presented invited technical papers in “ International Conference on Rubber and Rubber-Like Materials ( ICRRM 2013) “, 6 -9<sup>th</sup> March 2013, organized by Rubber Technology Centre of IIT. Kharagpur.

IRMRA sponsored the National Rubber Conference – NRC 2012 organised by All India Rubber Industries

Association and presented technical papers in all the conferences held in Delhi, Chennai, Mumbai and Kolkata for the benefit of rubber and allied industries.

### **3.3) Participation in Aerospace Expo in HAL, Nasik.**

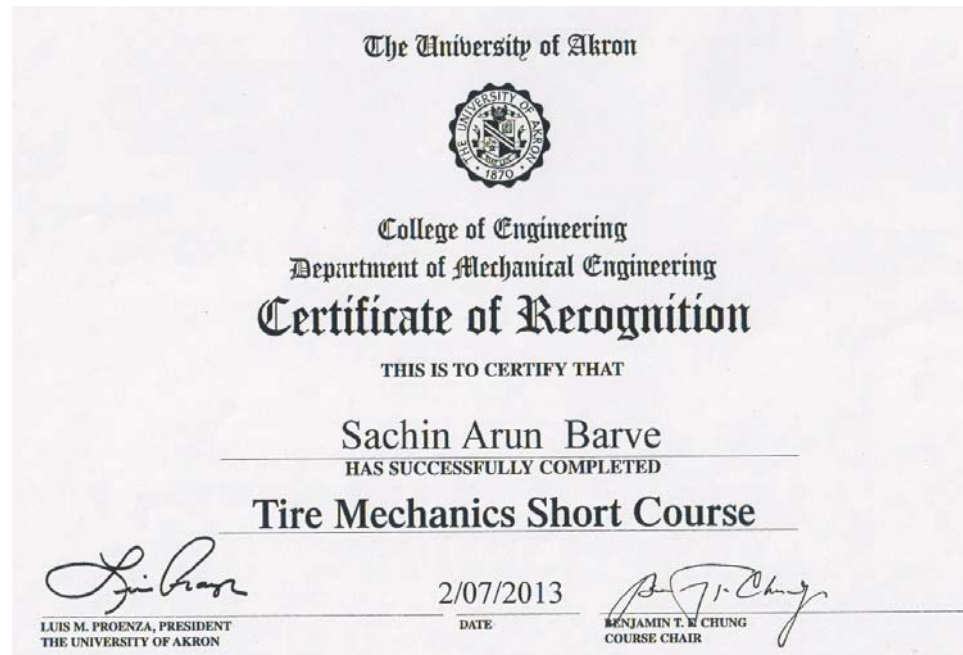
The Aeronautical Society of India (ASI), Nasik branch organized two days seminar and expo on indigenization opportunities in aerospace sector from 19<sup>th</sup> and 20<sup>th</sup> November 2012, in Kino, Hindustan Aeronautics Limited (HAL), Ojhar, Nasik.



IRMRA participants displayed various products developed as import substitute for a... scientists, and appreciated after keenly learning about IRMRA's reverse engineering capability for indigenization of imported rubber components.

### **3.4) Participation in Tyre Expo and workshop.**

In order to establish contact with potential overseas customers, IRMRA officers regularly attend the international tyre expo being held every year in Germany. During the current year Dr. P. Thavamani and Mr. Sachin Barve attended the tyre expo held in Kolen, Germany. To improve the knowledge, create course material, and sharpen the skills, our scientists and engineers are regularly deputed to attend the specialized training programmes, workshops and short term courses.



**Mr. Sachin Barve was sponsored to attend a short term course on Tyre Mechanics organized by expert faculties from University of Akron USA.**

#### **4) PARTICIPATION IN NATIONAL AND INTERNATIONAL STANDARDS DEVELOPMENT ACTIVITIES.**

Our scientists regularly participate in the BIS and ISO meeting and contribute for developing standards at national and International levels. Our Director is the Chairman of Rubber and Rubber Products Sectional Committee PCD13, member of (Transport Engineering Division) TED 7 which deals with standards development activities of automotive tyres, rims, and tubes, and TED 26 –Vehicles Running on Non-conventional Fuels.

##### **4.1 Participation in 60<sup>th</sup> ISO / TC 45 meetings in Riccione, Italy:**

On behalf of BIS, Indian delegation lead by Dr. P. Thavamani, Director, IRMRA, [Chairman, PCD 13] participated in the 60<sup>th</sup> meeting ISO TC 45 dealing with the standards development activities of Rubber and Rubber Products, held in Riccione, Italy from 15<sup>th</sup> to 19<sup>th</sup> Oct 2012.

The following members were part of the Indian delegation

- |  |                      |
|--|----------------------|
| 1. Dr. P. Thavamani, IRMRA,                  | Head of Delegation   |
| 2. Mr. K. Rajkumar, IRMRA,                   | Member of Delegation |
| 3. Dr. Vijay Malik, BIS,                     | Member of Delegation |
| 4. Dr. R. K. Mathan, Revertex,               | Member of Delegation |
| 5. Dr. Arup Chandra, Apollo Tyres,           | Member of Delegation |
| 6. Mr. Mohanachandara Nair, Rubber Board,    | Member of Delegation |
| 7. Dr. Saikat Dasgupta, HESETRI,             | Member of Delegation |
| 8. Mr. Mehul Patel, Gujarat Reclaim Rubber,  | Member of Delegation |
| 9. Mr. Harsh Gandhi, Gujarat Reclaim Rubber, | Member of Delegation |





While participating in the deliberation for framing the specification, and passing the resolution, the Indian experts defended our national interest by taking into consideration about the capability of Indian Industries and their ability to comply with specification. India has taken the Project Leadership role for framing the standards under New Work Item Proposal (NWIP) for Reclaim Rubber, Determination of residual non rubber content in Natural rubber, and Latex Products.

#### **4.2 Participation in Interlaboratory Test Programmes ( ITP).**

IRMRA regularly conducts ITP with national and international laboratories and testing agencies for maintaining our testing proficiency at par with any international laboratory. We always used to get very good correlation with other participating national and international laboratories which imply that our reports are highly reliable, repeatable and our testing proficiency is as good as report from best laboratory in the world.

The Certificate for an ITP programme conducted with Kunststoff Institute, Germany indicating great success as appended below is the testimony for IRMRA's capability on testing and certification of rubber and rubber products with great confidence.



Kunststoff-Institut für die metallindustrielle  
Wirtschaft IRIW GmbH (K.I.M.W.)  
Kardinalstraße 8 | 58509 Ludenscheid  
Telefon: +49 (0) 23 51 10 64-193  
Telefax: +49 (0) 23 51 10 64-190

## Certificate

for participation in the

Proficiency Test 2012

The participant

**Indian Rubber Mfrs. Research Association**  
Plot no.254/1B, Road No.16-V  
Wagle Industrial Estate, Thane [west]  
400 604 Maharashtra  
India

has participated in the proficiency test 2012  
with the lab code number: 206

with great success

### Valuation:

If the mean of z-scores of all evaluated results is smaller than 2 and single z-scores are smaller than 2 you will get the valuation: "...has participated with great success"  
If the mean of z-scores of all evaluated parameter is smaller than 2 but at least one single z-score is higher than 2 you will get the valuation: "...has participated with success"  
If the mean of z-scores of all evaluated results is higher than 2 you will get the valuation: "...has participated"

  
Dipl.-Ing. Stefan Schmidt  
- General management -  
18 September 2012

  
Dipl.-Ing. Jens Hündorf  
- Head of Material testing /  
Automotive-Testing -  
18 September 2012

## 5) PRESENTATION OF TECHNICAL PAPERS IN NATIONAL / INTERNATIONAL CONFERENCES :

- Mr.K. Rajkumar, Dy. Director has presented a technical paper entitled "Indigenization of Rubber products for aerospace industries, during 19th -20th Nov 2012, in two day seminar organized by ASI,at Nasik.
- Mr.K. Rajkumar, Dy. Director has presented a technical paper entitled "Processing of Nano fillers in Rubber- A novel technique", in international rubber conference IRC 2012, during 28-31 Oct 2012, organized by Rubber Board, at Kovalam, Kerala.
- Mr.K. Rajkumar, Dy. Director has presented a technical paper entitled "Effect of Nano clay on Mechanical, Thermal and Electrical properties of highly loaded inorganic filler based EPDM compounds", international conference- ICRRM 2013, held during March 2013, organized by Rubber Technology center, IIT Kharagpur.
- Dr. Thavamani, Director, delivered an invited lecture on " Biofillers and Fibres for Sustainable Growth of Rubber Industries" in ICRRM 2013 organised by Rubber Technology Centre, IIT. Kharagpur.

## 6) PUBLICATION OF TECHNICAL PAPERS IN NATIONAL / INTERNATIONAL JOURNALS:

The following technical papers have been communicated to international journals and accepted for publication.

- Mechanical, Thermal, Electrical and Morphology Characterization of Ethylene Propylene Diene Monomer – Nano Clay Composites, **K. Rajkumar**, P. Thavamani, P. Jeyanthi, P. Pazhanisamy, **Chem. Sci. Trans..** [Accepted].
- Effect of nanosilica on Ethylene Propylene Diene Monomer Rubber nanocomposites, **K. Rajkumar**, Chandresh D, P. Thavamani, P. Jeyanthi, P. Pazhanisamy, **Int. J. Innovative Res. & Dev.**, [Accepted].
- Dispersion studies of Nano Silica in NBR based polymer nanocomposite, **K. Rajkumar**, Prem Ranjan, P. Thavamani, P. Jeyanthi, P. Pazhanisamy, **Rasayan Journal of Chemistry**, [Accepted]



**7) ACADEMIC RESEARCH WORK PROGRAMMES ON RUBBER TECHNOLOGY AVAILED BY ACADEMIC INSTITUTES.**

The following Institution have sent their students to IRMRA under Academic Research work program on Rubber Technology during the year 12-13.

S. No.	Names of Institute	No. of students.	Course
01	Cochin University	02	M. Tech
02.	Cochin University	06	B. Tech
03	M.G university	02	B. Tech
04	MIT, Aurangabad	02	B. Tech
	Total	12	-

All the students have successfully completed their projects and the faculty of respective institute acknowledged our support for their students.

**8) OUTREACH PROGRAMME :**

As a part of Outreach Activities, conducted seminars / workshop in national and international levels for the benefits of people working In rubber and allied industries

S.No.	Location	Topic of programme	Date
01	Ho Chi Minh City, Vietnam	Indo-Vietnam Techno – Business Seminar	8 – 9 <sup>th</sup> June 2012
02	Material Organisation, Mumbai	Workshop on “Inspection , Testing & Storage of Rubber & Rubber Components”	18 <sup>th</sup> July 2012
03.	Hyderabad	Seminar on “Recent Advances in Rubber Technology”	12 <sup>th</sup> Oct. 2012
04.	UPSRTC, Lucknow	Workshop on Testing Certification and Retreading of Tyres for State Transport application”	7 <sup>th</sup> Dec. 2012
05.	HPCL. Vizag	“Rubber Lining of Chemical Storage Tank”	13 <sup>th</sup> – 14 <sup>th</sup> Dec. 2012
06.	Tata Motors, Pune	Workshop on “Tire Training and Competency Development”	13 <sup>th</sup> – 14 <sup>th</sup> Feb. 2013

**8) RESIDENTIAL FACILITIES - A GREAT RELIEF FOR OUT STATION PARTICIPANTS:-**

IRMRA has created the residential facilities to accommodate around 40 persons at a time. The participants from various parts of country like Kolkata, Bangalore, Chennai and Delhi / Chandigarh etc. availed the residential facilities during our training programmes. They appreciated the accommodation provided at a reasonable cost.

Similarly, IRMRA have provided the lodging, boarding and transport to students and faculty from academic institutes like Cochin University, Kolkata University, MIT, Chennai, SJ Collge of Engineering, Mysore, etc. who have come to participate in Conferences and workshop organised concurrently with IRE 2013.

Students were allowed to stay free of cost and availed IRMRA laboratory for their project work towards successful completion of their M. Tech / B. Tech / M. Sc degree programs.

**9) STATUS OF SPONSORED PROJECTS:**

We have been awarded two World Bank funded projects under National Agricultural Innovation Project (NAIP) initially for a period of three years up to March 2012. After reviewing and satisfying with good progress, NAIP has extended the duration of both the projects for one more year.

**9.1) Progress of the Project “ Design and development of Rubber Dams for water sheds**

Based on very good field performance report of prototype rubber dams installed with the support of consortium partner from Directorate of Water Management (DWM), Bhubaneswar, It has been decided to install 15 more dams in Himachal Pradesh, Assam, Maharashtra, Madhya Pradesh, Gujarat, and in other parts of our country.

NAIP appreciated the consortium partners for successfully developing the rubber dams for watershed management and the Chief Guest His Excellency Bharat Vir Wanchoo, Governor of Goa, distributed the award to all the partners during the regional committee review meeting of Indian Council of Agricultural Research (ICAR) held on 9<sup>th</sup> November 2012, in Goa,





While efforts are on for patenting the technology developed under consortium, NAIP asked us to go for large scale commercialization through technology transfer.

**9.2) Progress of Project “Avalue Chain on Coconut fibre and its byproducts: Manufacture of Diversified products of Higher Value and Better Marketability to Enhance the Economic Returns of Farmers**

The modified the coconut fibre fabric for reinforcing rubber product has been developed along with consortium partners from National Institute of Research on Jute and allied fibre Technology ( NIRJAFT), Kolkata. The fabric developed with modified coconut fibre, and blended fabric with nylon fibre have been used for developing rubber products such as conveyor belts and found to give good opportunities for optimization of cost. The modified fabric is being tried in other potential applications. Apart from the coconut fibre, the pith has been modified by surface treatment and as well as particle size reduction and its application as cost effective, low density and biodegradable filler in rubber product is being evaluated.

**10) EMPLOYEES' WELFARE ACTIVITIES.**

Our HR and Administration has been taking care of the welfare of our employees as they are our assets and many of them have put up several years of services with IRMRA.

As a tradition, our employees celebrated the Independence Day by hoisting the national flag and followed by national anthem. Each one after wishing the happy Independence Day, distributed sweets and snacks to all the employees and their family members.



Every year Dusserha Festival that celebrates the victory of good over the evil is celebrated in each section by breaking coconut and performing pooja's by respective sectional head in the presence of all the employees. During the current year also a grand celebration of Dussehra was organised and after performing the Pooja, sweets and snacks were distributed to all the employees.



Mr. Ninu R. Pawar, after putting a memorable long service as security retired on 31.07.2012. He has been very sincere, committed and duty bound during his 36 years of service with IRMRA. A befitting farewell function was organized for him in the presence of his family members and felicitated with shawl and gift. All the employees wished him very happy and healthy retired life with his family members.





**OUR GRATITUDE AND APPRECIATION:**

We are grateful to the Ministry of Commerce & Industry, Govt. of India for their administrative support in successfully managing the state-of-the art facilities and making IRMRA as one of the most prominent R&D Institute in the World for both tyre and non tyre sectors.

We would like to convey our sincere thanks to our President Dr. Raghupaty Singhanis, Chairman and Managing Director, J. K. Tyres Ltd., for his guidance and support to IRMRA, inspite of his busy schedule.

We thankfully acknowledge the visionary leadership and dynamic support given by our immediate past President Mr. Onkar S. Kanwar, Chairman of Apollo Tyres Ltd., and during his tenure IRMRA witnessed a tremendous progress in all its activities and became a globally recognized a unique R & D centre for rubber and rubber like materials.

Our sincere thanks also to all our Governing Council Members for their advice and guidance, our customers and members for their valuable patronage and supporting institutes like Rubber Board, AIRIA, ATMA, IRI, ARAI, CIRT, BIS, TSSIA, COSIA and last but not the least, to all our employees, without whose support, IRMRA would not have progressed to such an extent.

We solicit sincere co-operation and support from all concerned to make IRMRA, as one of the best R&D Institutes in the World.

Thanking you,

Yours sincerely,

Dr.P.Thavamani  
Director



## OFFICERS OF IRMRA



**Standing from Left** : Mr. Prashant Bankar, Sr. HR Officer, Mr. Hemant Khairnar, AFO,  
Mr. Mahesh Vaja, CFO, Mr. Yogesh Chavan, Supply Chain Executive,  
Mr. Manohar Nawale, Jr. Scientific Officer, Mr. B.S.Yadav, Jr. Officer,  
Mr. Sachin Barve, Jr. Officer.

**Sitting from Left** : Mr. K.R.Krishnan, Sr. Asst. Director, Mr. N.A.Phondke, Officer CSC,  
Mr. P.K.Das, Dy. Director, Dr. P.Thavamani, Director, Mr. K.Rajkumar, Dy. Director,  
Mr. M.Anis, Sr. Scientific Officer, Mr. Niteesh Shukla, Sr. Scientific Officer





**OUR EMPLOYEES : OUR ASSETS**

**Scientific & Technical Staff**

<b>Dr.P.Thavamani</b>	Director	<b>Mrs.Suhasini Katke</b>	Jr. Scientific Assistant
<b>Mr.P.K.Das</b>	Deputy Director	<b>Mr.Saburaj</b>	Jr. Scientific Assistant
<b>Mr.K.Rajkumar</b>	Deputy Director	<b>Mr.Samji Victor</b>	Jr. Scientific Assistant
<b>MR.K.R.Krishnan</b>	Sr. Asst. Director	<b>Mr.Bhagaban Panda</b>	Jr. Scientific Assistant
<b>Mr.Mohammed Anis</b>	Sr.Scientific Officer	<b>Mr.D. J. Maurya</b>	Jr. Scientific Assistant
<b>Mr. N. K. Shukla</b>	Sr.Scientific Officer	<b>Mr.M.N.Sharma</b>	Sr. Technical Assistant-D
<b>Mr.N.A.Phondke</b>	Officer, CSC	<b>Mr.Santosh Jagdale</b>	Sr.Laboratory Assistant-B
<b>Mr.Manohar Nawale</b>	Jr. Scientific Officer	<b>Mrs.Jyoti P. Chaudhari</b>	Sr.Laboratory Assistant-B
<b>Mr.B.S.Yadav</b>	Jr. Officer	<b>Mr.Jayaram Shetty</b>	Sr.Laboratory Assistant-B
<b>Mr. Sachin Barve</b>	Jr. Officer	<b>Mr.Raju S.Shetty</b>	Sr.Laboratory Assistant-A
<b>Mr.B.R.Arote</b>	Sr. Scientific Assistant	<b>Mr.Shantaram K. Naik</b>	Sr.Laboratory Assistant-A
<b>Mr.S.P.Patel</b>	Sr. Scientific Assistant	<b>Mr.Nilesh N. Jadhav</b>	Jr.Laboratory Assistant
<b>Mr.Sriram Iyer</b>	Sr. Scientific Assistant	<b>Ms.Ujwala Phutak</b>	Jr.Laboratory Assistant
<b>Mr.Chandan Chowdhury</b>	Sr. Scientific Assistant	<b>Ms.Priti Rasam</b>	Jr.Laboratory Assistant
<b>Mr.Bhaskar R.Dumbre</b>	Sr. Scientific Assistant	<b>Mr.Vivek Acholkar</b>	Electrical Maint. Assistant
		<b>Mr.Rajendra More</b>	CNC Machine Operator

**ADMINISTRATIVE STAFF**

<b>Mr.Prashant P. Bankar</b>	Senior Officer - HR
<b>Mr. Yogesh Chavan</b>	Supply Chain Executive
<b>Mr .N. P. Dileep Kumar</b>	Senior Commerical Assistant-D
<b>Ms. Sonali Wadkar</b>	Sr. Receptionist / Tel. Operator
<b>Mrs.Minal Patil</b>	Sr.Com.Asstt. - A
<b>Mrs.Rajakantam Iyappan Das</b>	Sr. Secretarial Asst. - A
<b>Ms.Vaishali Hodavdekar</b>	Steno-cum-General Assistant

**ACCOUNS & FINANCE STAFF**

<b>Mr. Mahesh Vaja</b>	Chief Accounts Officer
<b>Mr. Hemant Khairnar</b>	Asst. Finance Officer
<b>Mr.Narayanan Kutty</b>	Senior Commerical Assistant-C
<b>Mr.K.S.Shankar</b>	Senior Commerical Assistant-B
<b>Mrs.Vidya S. Jadhav</b>	Accounts Assistant



**M. M. NISSIM AND CO. (Regd.)**  
CHARTERED ACCOUNTANTS

Barodawala Mansion,  
B-Wing, 3rd Floor,  
81, Dr. Annie Besant Road,  
Worli, Mumbai – 400 018.  
Tel. : 2494 9991 Fax : 2494 9995  
E-mail : [mail@mmnissim.com](mailto:mail@mmnissim.com)  
Website : [www.mmnissim.com](http://www.mmnissim.com)

## **INDEPENDENT AUDITORS REPORT**

The Members  
Indian Rubber Manufacturers Research Association  
Thane, Mumbai.

### **REPORT ON FINANCIAL STATEMENTS**

We have audited the accompanying financial statements of **INDIAN RUBBER MANUFACTURES RESEARCH ASSOCIATION** ("the Association"), which comprise the balance sheet as at 31 March, 2013 and the statement of Income and Expenditure and Receipts and Payment Account for the year then ended, and a summary of significant accounting policies and notes on accounts.

#### **Management's responsibility for the financial statements**

Management is responsible for the preparation of these financial statements that give a true and fair view of the financial position, financial performance and receipts and payments of the Association in accordance with the accounting principles generally accepted in India. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation and presentation of the financial statements that give a true and fair view and are free from material misstatement, whether due to fraud or error.

#### **Auditor's responsibility**

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with the Standards on Auditing issued by the Institute of Chartered Accountants of India. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the Association's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Association's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of the accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.



**M. M. NISSIM AND CO. (Regd.)**  
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Website : [www.mmnissim.com](http://www.mmnissim.com)

**Continuation . . .**

**Opinion**

In our opinion and to the best of our information and according to the explanations given to us, the financial statements give a true and fair view in conformity with the accounting principles generally accepted in India:

- 1) In the case of the Balance Sheet, of the state of affairs of the as at 31<sup>st</sup> March, 2013
- 2) In the case of Statement of Income and Expenditure, of the excess of Income over Expenditure for the year ended on that date.
- 3) In the case of Receipts and Payments Account, of the receipts and payments for the year ended on that date.

**Emphasis of Matter**

We draw attention to:-

- 1) Note No. 3 of Schedule 15 to the Financial Statements relating to difference in balance confirmation received from bank and fixed deposit balances in books of accounts maintained by the association.
- 2) Note No. 5 of Schedule 15 to the Financial Statements relating to absence of a Central Stores Department and maintenance of stock register and periodic reconciliations with regards to receipts/issues and closing stocks and inventories have been taken and valued based on the verification conducted by the management as at the year end.
- 3) Note No. 7 of Schedule 15 to the Financial Statements relating to provision for depreciation on assets acquired under "National Agriculture Innovation Projects" not being in strict compliance with Accounting Standards issued by the Institute of Chartered Accountants of India.

**Our opinion is not qualified in respect of these matters.**

**We further report that:**

- a) We have obtained all the information which to the best of our knowledge and belief was necessary for the purpose of our audit.
- b) In our opinion proper books of account as required by law have been kept by the Association so far as appears from our examination of those books.
- c) The Balance Sheet, Statement of Income and Expenditure and Receipts and Payments Account dealt with by this report are in agreement with the books of account.

**For M. M. NISSIM AND CO.**  
Chartered Accountants  
(ICAI Regn No. 107122 W)

Place: Mumbai  
Date:

(N.KASHINATH)  
PARTNER  
Mem.No.36490



**BALANCE SHEET AS AT 31ST MARCH 2013**

	Schedule	Rs.	Rs.
		As at	As at
		31.03.2013	31.03.2012
<b><u>CAPITAL FUND AND LIABILITIES</u></b>			
<b>CAPITAL FUND</b>	1	4,789,582	3,584,582
<b>RESERVES AND SURPLUS</b>	2	203,550,649	143,413,983
<b>PROJECT FUNDS</b>	3	261,617,512	286,308,323
<b>CURRENT LIABILITIES &amp; PROVISIONS</b>	4	35,269,663	31,665,641
<b>TOTAL</b>		<b>505,227,406</b>	<b>464,972,529</b>
<b><u>ASSETS</u></b>			
<b>FIXED ASSETS</b>	5	230,333,759	237,644,020
<b>CURRENT ASSETS, LOANS AND ADVANCES</b>	6	274,893,647	227,328,509
<b>TOTAL</b>		<b>505,227,406</b>	<b>464,972,529</b>
<b>SIGNIFICANT ACCOUNTING POLICIES</b>	14		
<b>NOTES ON ACCOUNTS</b>	15		

Vide our report of even date  
For M. M. NISSIM AND CO.  
Chartered Accountants

For Indian Rubber Manufacturers Research Association,

(N.KASHINATH)  
PARTNER

(Dr. P. THAVAMANI)  
DIRECTOR

(DR. RAGHUPATI SINGHANIA)  
PRESIDENT

Place : Mumbai  
Date :



**INCOME & EXPENDITURE ACCOUNT  
FOR THE YEAR ENDED 31ST MARCH, 2013**

	Schedule	Rs. 2012-2013	Rs. 2011-2012
<b>INCOME:</b>			
INCOME FROM OPERATION / SERVICES	7	159,824,689	143,368,007
GRANTS / SUBSIDIES	8	25,231,640	33,092,070
FEES / SUBSCRIPTION	9	265,000	808,619
OTHER INCOME	10	17,307,905	15,428,738
<b>TOTAL</b>		<b>202,629,234</b>	<b>192,697,433</b>
<b>EXPENDITURE:</b>			
COST OF MATERIALS, CHEMICALS AND STORES	11	34,908,902	25,858,683
ESTABLISHMENT EXPENSES	12	45,711,264	35,401,899
OTHER ADMINISTRATIVE EXPENSES	13	28,333,542	20,850,669
SPONSORED PROJECTS EXPENSES (Refer Note 10)		-	3,706,691
INTEREST		-	-
DEPRECIATION		33,533,710	30,276,027
<b>TOTAL</b>		<b>142,487,419</b>	<b>116,093,970</b>
EXCESS OF INCOME OVER EXPENDITURE		60,141,816	76,603,463
ADD : PRIOR PERIOD ITEMS (Net) (Refer Note 12)		(5,150)	2,399,178
		60,136,666	79,002,641
<b>APPROPRIATIONS :</b>			
TRANSFERRED TO GENERAL RESERVE		60,136,666	79,002,641
SIGNIFICANT ACCOUNTING POLICIES	14		
NOTES ON ACCOUNTS	15		

Vide our report of even date  
For M. M. NISSIM AND CO.  
Chartered Accountants

For Indian Rubber Manufacturers Research Association,

(N.KASHINATH)  
PARTNER

(Dr. P. THAVAMANI)  
DIRECTOR

(DR. RAGHUPATI SINGHANIA)  
PRESIDENT

Place : Mumbai  
Date :



**SCHEDULES FORMING PART OF  
ACCOUNTS FOR THE YEAR ENDED AT 31ST MARCH, 2013**

**Receipts and Payments Accounts for the year ended 31st March**

	Rs.	Rs.		Rs.	Rs.
<u>Receipts</u>	<u>Current Year</u>	<u>Previous Year</u>	<u>Payments</u>	<u>Current Year</u>	<u>Previous Year</u>
<u>Opening Balances :</u>					
Cash on hand	30,230	48,386	Laboratory Chemicals, Stores & Spares	39,263,187	22,991,850
Bank current accounts	10,331,106	46,532,064	Establishment Expenses	42,827,884	35,658,011
Sponsored Projects / Testing Income	146,309,200	137,349,101	Administrative Expenses	36,844,697	15,067,571
Training / Workshop Fees	1,247,450	1,555,284	Fixed Assets purchased	26,223,451	13,891,003
Interest on Term Deposits	12,379,724	3,026,599	Recurring Expenses NAIP Projects	-	3,706,690
Annual Fees/Subscriptions	255,000	808,619	Investments in Term Deposits (Net)	-	115,245,451
Other Income	7,064,693	7,759,723	Income Tax deducted at Source	-	-
Life Membership Contribution	1,100,000	1,700,000	Advance to Customers	-	14,579,358
Admission Fees	105,000	100,500			
Advance from Customers	10,945,630	-			
Government Grants		29,200,000			
Contribution For NAIP Projects	540,830	3,036,455			
Staff Loans	658,070	348,040			
Sale of Fixed Asset	-	36,500			
Term Deposit maturity proceeds	31,726,767	-			
			<u>Closing Balances :</u>		
			Cash on hand	14,492	30,230
			Bank current accounts	77,519,989	10,331,106
<b>TOTAL :</b>	<b>222,693,699</b>	<b>231,501,271</b>	<b>TOTAL :</b>	<b>222,693,699</b>	<b>231,501,271</b>

**Vide our report of even date  
For M. M. NISSIM AND CO.  
Chartered Accountants**

**For Indian Rubber Manufacturers Research Association,**

**(N.KASHINATH)**  
PARTNER

**(Dr. P. THAVAMANI)**  
DIRECTOR

**(DR. RAGHUPATI SINGHANIA)**  
PRESIDENT

Place : Mumbai  
Date :



**SCHEDULES FORMING PART OF  
BALANCE SHEET AS AT 31ST MARCH, 2013**

	Rs.	Rs.
	As at	As at
	31.03.2013	31.03.2012

SCHEDULE 1- CAPITAL FUND:

<b>Life Membership Contribution</b>				
Balance as at the beginning of the year	2,125,000		425,000	
Add: Contribution received during the year	1,100,000		1,700,000	
Balance as at the end of the year		3,225,000		2,125,000
<b>Admission Fees</b>				
Balance as at the beginning of the year	576,000		475,500	
Add: Contribution received during the year	105,000		100,500	
Balance as at the end of the year		681,000		576,000
<b>Capital Donation Fund</b>				
Balance as at the end of the year		661,093		661,093
<b>CSIR Capital Grant Fund</b>				
Balance as at the end of the year		222,489		222,489
<b>TOTAL</b>		<b>4,789,582</b>		<b>3,584,582</b>

SCHEDULE 2- RESERVES AND SURPLUS

<b>SPECIAL RESERVES</b>				
<b>Staff Welfare Fund:</b>				
Balance as at the end of the year		3,462,226		3,462,226
<b>GENERAL RESERVE</b>				
Balance as at the beginning of the year	139,951,757		60,949,116	
Add: Transfer from Income and Expenditure Account	60,136,666		79,002,641	
		200,088,423		139,951,757
<b>TOTAL</b>		<b>203,550,649</b>		<b>143,413,983</b>

**Vide our report of even date  
For M. M. NISSIM AND CO.  
Chartered Accountants**

**For Indian Rubber Manufacturers Research Association,**

**(N.KASHINATH)**

PARTNER

Place : Mumbai

Date :

**(Dr. P. THAVAMANI)**

DIRECTOR

**(DR. RAGHUPATI SINGHANIA)**

PRESIDENT



**SCHEDULES FORMING PART OF  
BALANCE SHEET AS AT 31ST MARCH, 2013**

	FUND WISE BREAK-UP				TOTAL	
	Laboratory Fund	Research & Development Fund	Contribution For Sponsored Research	Contribution For NAIP Projects	As at 31.03.2013	As at 31.03.2012
Balance at the Beginning of the year	296,000	14,332,509	256,742,299	14,937,514	286,308,322	287,163,38
Additions to the Funds / Grants	-	-	-	540,830	540,830	32,236,455
Interest on Earmarked Deposits	-	-	-	-	-	-
	296,000	14,332,509	256,742,299	15,478,344	286,849,152	319,400,393
Utilisation / Expenditure towards objectives of the Grant:						
Depreciation of Rs.2,44,08,114/- (Previous year Rs.2,85,66,656/-) and Rs.8,23,526/- (Previous year Rs.8,18,723/-) relating to Sponsored Research and NAIP Project respectively and the balance representing recurring expenditure for the year are recognised in the Income and Expenditure Account.	-	-	24,408,114	823,526	25,231,640	33,092,070
Transfer To Capital Fund	-	-	-	-	-	-
<b>TOTAL</b>	<b>296,000</b>	<b>14,332,509</b>	<b>232,334,185</b>	<b>14,654,818</b>	<b>261,617,512</b>	<b>286,308,323</b>

**SCHEDULE 4 - CURRENT LIABILITIES AND PROVISIONS**

	<u>2012-2013</u>		<u>2011-2012</u>
<b>A. CURRENT LIABILITIES:</b>			
<b>Sundry Creditors</b>			
For Expenses	834,551		1,922,907
Others	5,851,535		14,988,166
		6,686,086	16,911,073
<b>Advances Received</b>	17,393,714	17,393,714	6,448,084
		24,079,800	23,359,158
<b>B. PROVISIONS:</b>			
Accumulated Leave Encashment	6,159,500		4,619,941
Provision for Gratuity (Refer Note 13)	5,030,363		3,686,542
		11,189,863	8,306,483
<b>Total</b>		<b>35,269,663</b>	<b>31,665,641</b>





**SCHEDULES FORMING PART OF  
ACCOUNTS FOR THE YEAR ENDED AT 31ST MARCH, 2013**

**SCHEDULE 5 - FIXED ASSETS**

DESCRIPTION	GROSS BLOCK				DEPRECIATION				NET BLOCK	
	As at 31.03.2012	Additions during the year	Deductions during the year	As at 31.03.2013	As at 31.03.2012	Provided during the year	Deductions during the year	As at 31.03.2013	As at 31.03.2013	As at 31.03.2012
LEASEHOLD LAND	60,200	-	-	60,200	-	-	-	-	60,200	60,200
FREEHOLD LAND	29,055,500	-	-	29,055,500	-	-	-	-	29,055,500	29,055,500
BUILDINGS:										
(On Leasehold Land)	18,863,915	-	-	18,863,915	13,568,818	529,510	-	14,098,327	4,765,588	5,295,097
(On Freehold Land)	91,407,777	974,531	-	92,382,308	25,563,779	7,352,787	-	32,916,566	59,465,741	65,843,998
LABORATORY EQUIPMENTS	222,025,043	23,516,133	-	245,541,176	112,686,111	22,750,405	-	135,436,515	110,104,660	109,338,932
VEHICLE	1,948,576	1,181,592	-	3,130,168	784,377	263,249	-	1,047,626	2,082,542	1,164,199
FURNITURE AND FIXTURE	4,626,558	853,466	-	5,480,024	2,800,697	286,187	-	3,086,884	2,393,141	1,825,861
OFFICE EQUIPMENTS	1,574,014	18,000	-	1,592,014	1,254,619	43,423	-	1,298,042	293,972	319,395
COMPUTER/PERIPHERALS	7,112,496	66,609	616,270	6,562,835	6,406,815	557,082	369,762	6,594,135	(31,300)	705,681
ELECTRICAL INSTALLATION	16,765,938	-	-	16,765,938	11,380,818	673,509	-	12,054,326	4,711,612	5,385,120
LIBRARY BOOKS	874,474	-	-	874,474	874,474	-	-	874,474	-	-
FIRE FIGHTING EQUIPMENTS	125,306	-	-	125,306	114,789	1,578	-	116,367	8,939	10,517
DIES AND TOOLS	9,571,901	229,389	-	9,801,290	6,174,609	536,881	-	6,711,491	3,089,799	3,397,292
OTHER FIXED ASSETS	86,351	-	-	86,351	82,474	969	-	83,444	2,907	3,877
INTANGIBLE ASSETS	1,655,896	-	-	1,655,896	1,318,435	84,365	-	1,402,800	253,096	337,461
NAIP - EQUIPMENTS	15,130,770	-	-	15,130,770	2,169,509	721,800	-	2,891,309	12,239,461	12,961,261
NAIP Coir Equipments	2,148,742	-	-	2,148,742	209,113	101,726	-	310,839	1,837,903	1,939,629
<b>TOTAL</b>	<b>423,033,456</b>	<b>26,839,721</b>	<b>616,270</b>	<b>449,256,906</b>	<b>185,389,436</b>	<b>33,903,470</b>	<b>369,762</b>	<b>218,923,145</b>	<b>230,333,762</b>	<b>237,644,020</b>
PREVIOUS YEAR	409,795,170	13,891,003	652,717	423,033,456	155,714,231	30,276,027	600,822	185,389,436	237,644,020	254,080,938



**SCHEDULES FORMING PART OF  
ACCOUNTS FOR THE YEAR ENDED AT 31ST MARCH, 2013**

	Rs.	Rs.	Rs.
		As at	As at
		31.03.2013	31.03.2012
<b>SCHEDULE 6 - CURRENT ASSETS, LOANS AND ADVANCES.</b>			
<b>A) CURRENT ASSETS:</b>			
<b>Inventories:</b>			
Developed Rubber Products		4,114,466	1,176,215
Work in Progress		26,396	202,188
Chemical, Stores and Spares		2,493,680	1,548,170
Scrap Material		896,264	249,948
		<b>7,530,806</b>	<b>3,176,521</b>
<b>Sundry Debtors: (Unsecured, Considered Good, unless otherwise stated )</b>			
<b>Debts Outstanding for a period exceeding six months :</b>			
Considered Good		10,330,510	10,497,723
Considered Doubtful		1,000,000	1,000,000
		<b>11,330,510</b>	<b>11,497,723</b>
<b>Less: Provision for Doubtful Debts</b>		<b>1,000,000</b>	<b>1,000,000</b>
		<b>10,330,510</b>	<b>10,497,723</b>
<b>Others</b>		<b>14,783,692</b>	<b>9,438,273</b>
		<b>25,114,201</b>	<b>19,935,996</b>
<b>Cash Balance in hand</b>		<b>14,492</b>	<b>30,230</b>
<b>Bank Balances:</b>			
<b>With Scheduled Bank</b>			
In Current Accounts		77,519,989	10,331,106
In Margin Accounts		-	-
In Deposit Accounts		131,556,132	163,282,899
		<b>131,556,132</b>	<b>163,282,899</b>
<b>TOTAL (A)</b>		<b>241,735,620</b>	<b>196,756,751</b>



**SCHEDULES FORMING PART OF  
ACCOUNTS FOR THE YEAR ENDED AT 31ST MARCH, 2013**

**SCHEDULE 6 – CURRENT ASSETS, LOANS AND ADVANCES (CONTD....**

<b>B. LOANS, ADVANCES AND OTHERS ASSETS:</b>			
( Unsecured , Considered Good )			
Staff Loans		1,850,740	2,508,810
Advances and other amounts recoverable in cash or kind or for value to be received		6,996,935	9,230,542
Tax Deducted at Source		13,155,815	8,263,774
NAIP Project Receivables (Refer Note 10)		638,692	124,067
Income Accrued on Deposits		10,515,845	10,444,565
<b>TOTAL (B)</b>		<b>33,158,027</b>	<b>30,571,758</b>
<b>TOTAL (A + B)</b>		<b>274,893,647</b>	<b>227,328,509</b>



**SCHEDULES FORMING PART OF  
ACCOUNTS FOR THE YEAR ENDED AT 31ST MARCH, 2013**

	Rs.	Rs.
	2012-13	2011-12
<b>SCHEDULE 7 - INCOME FROM OPERATION / SERVICES</b>		
Testing & Investigation Charges	88,313,549	86,919,656
Training / Workshop Fees & other recoveries	1,247,450	1,555,284
Miscellaneous Income	89,704	171,675
Development Income	66,499,972	49,578,929
Sale of Rubber Scrap	3,674,014	5,142,462
<b>TOTAL</b>	<b>159,824,689</b>	<b>143,368,007</b>
<b>SCHEDULE 8 - GRANTS/SUBSIDIES (Irrevocable Grants &amp; Subsidies Received)</b>		
Sponsored Projects: (Refer note 9)		
Revenue Expenses	-	3,706,691
Deferred Income(revenue grant)	25,231,640	29,385,379
<b>TOTAL</b>	<b>25,231,640</b>	<b>33,092,070</b>



**SCHEDULES FORMING PART OF  
ACCOUNTS FOR THE YEAR ENDED AT 31ST MARCH, 2013**

**SCHEDULE 9 - FEES/SUBSCRIPTIONS:**

Annual Fees/Subscriptions	265,000	175,500
21st Rubber Conference	-	633,119
<b>TOTAL</b>	<b>265,000</b>	<b>808,619</b>

**SCHEDULE 10 - OTHER INCOME**

<b>INTEREST :</b>		
On Term Deposits with Scheduled Banks	14,000,868	13,616,271
On Staff Loans	247,218	273,855
Sundry Other Income	5,000	3,950
NAIP - Institutional Charges	-	8,155
Royalty (TOT) fees	59,631	600,000
Rent Received	33,000	18,000
Tender Fees (Non Refundable)	-	3,000
Provision for Fringe Benefit Tax written back	-	47,101
Sundry Balances written back(net)	2,228,542	858,406
Foreign Exchange Loss/Gain	733,646	
<b>TOTAL</b>	<b>17,307,905</b>	<b>15,428,738</b>



**SCHEDULES FORMING PART OF  
Income & Expenditure for the year 31ST MARCH, 2013**

Rs.	Rs.
2012-13	2011-12

**SCHEDULE 11 -COST OF MATERIALS,CHEMICALS AND STORES**

Laboratory Chemicals, Stores & Spares Consumed	39,263,187	24,549,133
( Increase ) / Decrease in Stock	(4,354,285)	1,309,550
<b>TOTAL</b>	<b>34,908,902</b>	<b>25,858,683</b>

**SCHEDULE 12 - ESTABLISHMENT EXPENSES:**

Salaries, Wages and Allowances	38,915,141	31,339,218
Contribution to Provident , Gratuity and Other Funds	4,712,094	2,331,173
Staff Welfare Expenses	2,084,029	1,731,508
<b>TOTAL</b>	<b>45,711,264</b>	<b>35,401,899</b>



**SCHEDULES FORMING PART OF  
Income & Expenditure for the year 31ST MARCH, 2013**

Rs.	Rs.
2012-13	2011-12

**SCHEDULE 13 - OTHER ADMINISTRATIVE EXPENSES:**

Power and Water Charges	8,968,622	7,057,190
Repairs & Maintenance on Plant & Machinery & other Assets	7,729,479	4,347,449
Insurance	339,146	383,456
Rates and Taxes	207,225	479,254
Vehicles Repairs and Maintenance	283,155	287,277
Postage, Telephone and Communication Charges	542,256	437,660
Printing and Stationary	741,452	352,342
Travelling and Conveyance Expenses	2,459,408	1,118,018
Expenses on Seminar/Workshops/Conference	1,399,215	1,002,561
Subscription Expenses	19,941	3,200
Audit Fees	100,000	117,772
Professional Charges	1,966,223	2,006,284
Finance Charges	514,202	263,318
Freight and Forwarding Expenses	2,125,774	1,231,359
Advertisement Expenses	272,197	510,640
Miscellaneous Expenses	633,751	726,495
Provision for Doubtful Debts	-	500,000
Vendor Registration Fees	525	11,000
Penalty	15,000	-
NAIP - Institutional Charges	15,970	
(Profit)/Loss on Sale of Asset	-	15,395
<b>TOTAL</b>	<b>28,333,542</b>	<b>20,850,669</b>



**SCHEDULES FORMING PART OF  
ACCOUNTS FOR THE YEAR ENDED AT 31ST MARCH, 2013**

**SCHEDULE 14 - SIGNIFICANT ACCOUNTING POLICIES:**

**A. ACCOUNTING CONVENTION:**

The financial statements are prepared on the basis of historical cost convention and on the accrual method of accounting and in accordance with the applicable Accounting Standards issued by The Institute of Chartered Accountants of India, except where otherwise stated.

**B. USE OF ESTIMATES:**

The presentation of financial statements requires the management to make estimates and assumptions that affect the reported amount of assets and liabilities on the date of financial statements and reported amount of revenues and expenses during the reporting period. Differences between the actual results and estimates are recognised in the period in which the results are known / materialised. Although these estimates are based upon management best knowledge of current event and actions, actual results could differ from these estimates.

**C. INVENTORY:**

Developed Rubber Products, Materials, Chemicals Stores, Spares and Scrap materials are valued at lower of cost and net realisable value. Cost of Materials, Chemical, stores and spares comprises of purchase cost and cost of conversion. Developed rubber products includes cost of conversion and other cost incurred in bringing them to their present location and condition. Inventory is valued on FIFO basis.

**D. FIXED ASSETS:**

- a) Fixed Assets are stated at cost of acquisition inclusive of inward freight, duties and taxes and incidental and direct expenses related to acquisition.
- b) Assets acquired under sponsored projects are capitalised in the year of acquisition, at cost.
- c) Costs relating to acquisition of Software which are not an integral part of the related hardware is capitalised as Intangibles

**E. DEPRECIATION:**

Depreciation is provided on written down value method as per Income Tax Rules from the year of their Capitalisation, including assets created out of Government and other Grants, except for assets acquired under NAIP Projects.

Assets Purchased / Acquired under NAIP Projects, depreciation for the year is provided on straight line method at the rates stipulated for NAIP project assets. NAIP assets purchased in the year for a sum of less than Rs. 10,000/- each are depreciated at the rate of 100% retaining a residual value of Rs. 1/-. Depreciation on additions during the year is provided for the whole of the year.

Cost of Leasehold land is not amortised over the lease period.

**F. GOVERNMENT AND OTHER GRANTS:**

Government / Other Grants are accounted when there is a reasonable assurance that the association will comply with the conditions attached to them and there is reasonable certainty of its receipts.

Grants relating to depreciable Fixed Assets are treated as Deferred Income and recognised in the Income and Expenditure Account in proportion in which depreciation is charged. Recurring revenue expenditure towards Sponsored Projects are appropriated from the fund and are recognised in the Income & Expenditure account.

**G. REVENUE RECOGNITION:**

- a) Sponsored Projects representing items developed by the association are generally accounted at the time of delivery and when the risks and rewards are transferred.
- b) Testing and Training fees are recognised as Income at contracted rates on rendering of the service.
- c) Interest Income is accounted at contracted rates on time proportion basis.





**SCHEDULES FORMING PART OF  
ACCOUNTS FOR THE YEAR ENDED AT 31ST MARCH, 2013**

**H. FOREIGN EXCHANGE TRANSACTIONS:**

Transactions arising in foreign currencies during the year are recorded at the exchange rates prevailing on the dates of the transactions. Foreign currency monetary items are converted into Rupees equivalent at the exchange rates prevailing as on Balance Sheet date. Non-Monetary items are carried at historical cost denominated in a foreign currency and are reported using the exchange rate at the date of transaction. Exchange differences arising on settlement / restatement of monetary items are recognised as income or as expenses in the year in which they arise.

**I. EMPLOYEE BENEFITS:**

a) Defined Contribution Plans

The Association contributes to a defined contribution plan to Employees Provident Fund which is administered by the Regional Provident Fund Authority, and has no further obligation beyond making its contribution, which is expensed in the year to which it pertains.

Defined Benefit Plans

The liability for Gratuity is determined on the basis of an actuarial valuation as at the end of the year, which is calculated using Projected Unit Credit Method. Actuarial gains and losses which comprise experience adjustment and the effect of changes in actuarial assumptions are recognized in the Income and Expenditure Account. The Gratuity Fund is administered by Trust through the Group Scheme of Life Insurance Corporation of India. The premium paid is charged to Income and Expenditure account.

b) The employees are entitled to leave as per the leave policy of the association. The liability in respect of unutilized leave balances is provided based on actuarial valuation as at the end of the year, calculated using Projected Unit Credit Method.

**J. INCOME TAX:**

The Association is notified under section 10 (21) of the Income Tax Act, 1961 and is exempted from payment of Income tax.

**K. PROVISIONS AND CONTINGENT LIABILITIES:**

The Association recognises a provision when there is a present obligation as a result of a past event that probably requires an outflow of resources and a reliable estimate can be made of the amount of the obligation. A disclosure for a contingent liability is made when there is a possible obligation or a present obligation that may, but probably will not require an outflow of resources. Where there is a possible obligation or a present obligation that the likelihood of outflow of resources is remote, no provision or disclosure is made. Contingent assets are neither recognised nor disclosed in the financial statement.



**SCHEDULES FORMING PART OF  
ACCOUNTS FOR THE YEAR ENDED AT 31ST MARCH, 2013**

**SCHEDULE 15 - NOTES ON ACCOUNTS**

**1. CONTINGENT LIABILITIES :**

In respect of :-

- a Unpaid amount to Maharashtra Labour Welfare Fund Rs.30,366/- (Rs. 30,366/-)
- b. Performance Bank Guarantee given by the association Rs. 1,16,39,834/- (Rs. 1,05,81,867/-)
2. Estimated amount of contracts remaining to be executed on Capital account (net of advances) and not provided for Rs.25,14,996/- (Rs. NIL)
- 3 Confirmation of Balances as on 31st March 2013 in respect of Deposit Accounts received from bank amounts to Rs.13,13,46,633/- whereas amount reflected in the books of accounts amounts to Rs.13,15,56,132/-. The management is in the process of reconciling the difference of Rs 2,09,499/-, subject to which the balances have been reflected as per the books of accounts.
- 4 Pending reconciliation of amount of Taxes deducted at Source (TDS) with the relevant income tax records, the amount of TDS receivable amounting to Rs.1,31,55,815/- has been reflected as per the books of accounts. The management has initiated the process of regularising the exemption granted vide notification no. 32 F No. 10/3063 - IT(AI) under section 10(21) read with clause (ii) of sub-section (1) of section 35 of the Income Tax Act , 1961 exempting the association from payment of Income Tax and also filing necessary income tax returns for the respective assessment years and is hopeful of recovery of the TDS.
- 5 In absence of a Central Stores Department and maintenance of stock registers and periodic reconciliations with regards to receipts / issues and closing stocks, inventories have been taken and valued based on the verification conducted by the management as at the year end.
- 6 Balances under the head Loans and advances, Sundry Debtors, Creditors, and deposits are as per the books of accounts and are subject to confirmations, reconciliation and consequential adjustments, if any. In the opinion of the Management, the current assets, loans and advances have a value on realisation in the ordinary course of business, equal at least to the aggregate amount shown in the Balance Sheet.
- 7 Depreciation is provided on SLM basis on additions during the year acquired under "National Agricultural Innovation Projects" as prescribed by Indian Council of Agricultural Research and is not in strict compliance with the Accounting Standards issued by the Institute of Chartered Accountants of India. The management has not quantified the impact of the same, as in its opinion the charge on account of depreciation is not likely to be materially significant.

**8 FOREIGN CURRENCY EXPENDITURE**

	2012-13	2011-12
	Rs.	Rs.
Capital Expenditure	18,722,658	8,266,272
Travelling Expenses	539,015	24,612

**9 NAIP PROJECT**

- a. During the year 2008-09, the association was awarded a project for "A Value chain for coconut fibre and its byproducts : Manufacture of diversified products for higher value and better marketability to enhance the economic returns of farmers" to be operated under consortium mode, by National Agricultural Innovation Project (NAIP) of Indian Council of Agricultural Research (ICAR). The total budgeted award for 2008-09 to 2012-13 is Rs.65,13,130/-. During the year, the association has incurred Rs.37,950/- (Rs.43,455/-) towards Institutional charges. The association has incurred a sum of Rs.NIL (Rs. 13,34,816/-) towards recurring expenses which is considered in the Income and Expenditure account and has been adjusted against NAIP funds. Also a sum of Rs. Nil (Rs.4,68,310/-) has been incurred for non recurring expenses i.e for purchase of Equipments. During the year the association has received a total sum of Rs.74,891/- (Rs. 8,98,408/-) and at the year end the balance of Rs.20,51,450.55/- (Net) (Rs.20,78,285/-) is reflected as balance fund in hand from NAIP under the head "PROJECT FUNDS"(Refer Schedule 3).
- b. During the year 2007-08, the association was awarded a project for "Design and Development of Rubber Dams for Watersheds" to be operated under consortium mode, by National Agricultural Innovation Project (NAIP) of Indian Council of Agricultural Research (ICAR). The total budgeted award for 2007-08 to 2012-13 is Rs.2,84,57,948/-. During the year, the association has accrued Rs.1,69,084/- (Rs 98,362/-) towards Testing Income and Institutional charges which are receivable from NAIP. Further, the association has incurred a sum of Rs.NIL (Rs.23,71,874/-) towards recurring expenses which is considered in the Income and Expenditure account and has been adjusted against NAIP funds. Also a sum of Rs. Nil (Rs. NIL) has been incurred for non recurring expenses i.e for purchase of Equipments. During the year the association has received a total sum of Rs 4,65,939/- (Rs 21,38,047/-) and as at the end of the year the balance of Rs.1,26,03,367.62/- (Rs 1,28,59,228.62 /-) is reflected as balance fund in hand under the head "Project Funds"(Refer Schedule 3) and amount of Rs.6,38,692/-(Rs.1,24,067/-) is reflected as receivable from NAIP under the head "Loans and Advances".



**SCHEDULES FORMING PART OF  
ACCOUNTS FOR THE YEAR ENDED AT 31ST MARCH, 2013**

**SCHEDULE 15 - NOTES ON ACCOUNTS: Contd..**

c) Details of Sponsored Projects Expenses

Particulars	Rubber Dam Project		Coir Project	
	2012-13	2011-12	2012-13	2011-12
		Rs.		Rs.
Testing & Evaluation	199,084	-	300,000	76,438
Travelling Allowance/Daily Allowance	46,476	55,017	34,224	46,411
Workshop	-	43,199	-	-
Salaries, Wages & Allowances	214,450	445,534	185,165	269,603
Consumables & Chemicals	-	85,852	-	256,186
Stationery & Postage etc	-	738	-	2,902
Outsourcing	-	-	-	-
Advertisement, Octroi etc.	-	-	-	401
Moulding & Calendering	-	-	-	-
Vehicle Hiring / Running	-	-	-	609
National Training	-	-	-	50,229
Repairs - Plant & Machineries	-	24,938	-	-
Institutional Charges	12,024	98,362	15,000	43,455
<b>Expenses as per NAIP Certification</b>	<b>472,034</b>	<b>753,640</b>	<b>534,389</b>	<b>746,234</b>
Adjustments *	(472,034)	1,618,234	(534,389)	588,582
<b>Expenses as per Books</b>	<b>-</b>	<b>2,371,874</b>	<b>-</b>	<b>1,334,816</b>

\* Expenses on above sponsored projects and balances outstanding are stated as per the books of accounts, and are subject to reconciliation and consequential adjustments.

**10 Micro, Small & Medium Enterprises Development Act 2006 (MSMED)**

The Management has initiated the process of identifying enterprises, which have provided goods and services to the association, and which qualify under the definition of micro and small enterprises as defined under Micro, Small and Medium Enterprises Development Act, 2006. Accordingly, the disclosure in respect of the amounts payable to such enterprises as at 31st March, 2013 is not done as no information is received for the same. Further, in the view of the Management, the impact of interest, if any, that may be payable in accordance with the provisions of the Act is not expected to be material.

**11 Prior Period Items**

	2012-13	2011-12
Sponsored Projects - BARC - Electron Beam Projects Receipts	-	1,046,129
Sponsored Project - Dept of Science & Technology Receipts	-	1,494,088
Fuel Expenses	-	(141,039)
Service Tax on Audit Fees	5,150	-
	<b>5,150</b>	<b>2,399,178</b>



**SCHEDULES FORMING PART OF  
ACCOUNTS FOR THE YEAR ENDED AT 31ST MARCH, 2013**

**SCHEDULE 15 – NOTES ON ACCOUNTS: Contd..**

**13 Employee Benefits**

During the year, the company has recognised the following in the Profit & Loss Account.

Particulars	Gratuity Funded	
	Rupees	
	2012-13	2011-12
<b>Change in the present value of the defined benefit obligation</b>		
Opening defined benefit obligation at 1st April 2012	8,482,513	8,247,529
Current Service Cost	759,222	617,210
Interest Cost	721,014	680,421
Actuarial losses (gains)	783,142	(783,966)
Benefits paid	(1,040,338)	(278,681)
Closing defined benefit obligation at 31st March 2013	9,705,553	8,482,513
<b>Change in Plan Assets</b>		
Opening fair value of plan assets at 1st April 2012	4,795,971	4,654,847
Expected Return on Plan assets	387,095	408,456
Contributions by employer	556,515	-
Benefit Paid	(1,040,338)	(232,904)
Actuarial Gains / (Losses) on Plan Assets	(24,053)	(34,428)
Closing fair value of plan assets at 31st March 2013	4,675,190	4,795,971
<b>Reconciliation of present value of the obligation and fair value of the plan assets</b>		
Present Value of Funded obligation at 31st March 2013	9,705,553	8,482,513
Fair Value of Plan assets at 31st March 2013	4,675,190	4,795,971
Net Liability/(Asset)	5,030,363	3,686,542
<b>Amount Recognised in the Balance Sheet</b>		
Liabilities	9,705,553	8,482,513
Assets	4,675,190	4,795,971
Net Liability / (Asset) recognised in Balance Sheet	5,030,363	3,686,542
<b>Net Cost recognised in the profit and loss account</b>		
Current Service Cost	759,222	617,210
Interest Cost	721,014	680,421
Expected return on plan assets	(387,095)	(408,456)
Net actuarial losses (Gain) recognised during the year	807,195	(749,538)
Total costs of defined benefit plans included in Schedule 12 "Employees Remuneration & Benefits"	1,900,336	139,637
<b>Reconciliation of expected return and actual return on Plan Assets</b>		
Expected Return on Plan Assets	387,095	408,456
Actuarial Gain/ (loss) on Plan Assets	(24,053)	(34,428)
Actual Return on Plan Assets	363,042	374,028



**SCHEDULES FORMING PART OF  
ACCOUNTS FOR THE YEAR ENDED AT 31ST MARCH, 2013**

**SCHEDULE 15 - NOTES ON ACCOUNTS Contd...**

	31.03.2013	31.03.2012
Category of Assets		
L.I.C. Group Gratuity (Cash Accumulation) Policy	100%	100%

**Principal actuarial assumptions:**

Particulars	31.03.2013	31.03.2012
Discount Rate	8.10%	8.50%
Expected Rate of return on Plan Asset	8.5%	9%
Salary Escalation	6%	6%

The estimates of future salary growth, factored in actuarial valuation, take account of inflation, seniority, promotion and other relevant factors such as supply and demand in the employment market.

Such estimates are very long term and are not based on limited past experience / immediate future. Empirical evidence also suggest that in very long term, consistent high salary growth rates are not possible.

Amounts for the Current & Previous Period are as follows;	31.03.2013	31.03.2012
	Rupees	
Defined Benefit Obligation	9,705,553	8,482,513
Plan Assets	4,675,190	4,795,971
Surplus / (Deficit)	5,030,363	3,686,542
Experience Adjustments on plan liabilities	451,928	(619,054)
Experience Adjustments on plan assets	24,053	34,428

\* The management has relied on the overall actuarial valuation conducted by the Actuary. However, experience adjustments on plan assets and liabilities are not readily available and hence not disclosed.

**Other Long Term Liabilities**

Leave Encashment	31.03.2013	31.03.2012
	Rupees	
Present Value of obligation at 31st March 2013	6,159,500	4,619,941
Plan assets	-	-
<b>Net Liability/(Asset)</b>	<b>6,159,500</b>	<b>4,619,941</b>

The estimates of Future salary growth, factored in actuarial valuation, take account of inflation, seniority, promotion and other relevant factors such as supply and demand possible.

**Defined Contribution Plan**

Employers Contribution to Provident Fund\*

\* included in "Contribution to Provident, Gratuity and other funds"

	Rupees	
	31.03.2013	31.03.2012
	2,114,588	1,817,183



**Our Members: Our Patrons**

Advance Rubber Industries,  
Gujarat 380026

Aerospace Engineers,  
Salem - 636201

Ameya Dichem Pvt. Ltd.,  
Vadodara - 380 020

Anoop Enterprises,  
Mumbai - 400 064

Apar Industries  
Mumbai – 400 071

Basant Rubber Factory Ltd.  
Mumbai – 400 083

Bhavick Enterprises  
Mumbai – 400 063

Bombay Oil Seals CO  
MUMBAI

Brahans Polymers Pvt. Ltd,  
Mumbai – 400 709

Camata Enterprises  
Mumbai – 400 072

Chemische Global Pvt.Lt.d  
Khed Dist-410 501

Choksey Chemicals Pvt. Ltd.  
Mumbai – 400 022

Cikautxo Taurus Flexibles  
Pvt. Ltd.  
Pune – 410 506

Concept Engineering  
Vasai

Dhanothia Rubbers Pvt. Ltd.  
Rajasthan – 302013

Divekar Wallstabe And  
Schneider Precision Seals  
Pvt Ltd, Thane

Eastern Threads Ltd.  
Kochi

Eltech Rubber ndia Pvt. Lt.  
Mumbai

ERI –Tech Ltd.  
Kolkata

Faiveley Transport Ltd.  
Hosur - 635109

Fenner Ltd.  
Chennai – 600 035

Filtrum Polymers Pvt. Ltd.  
Pune

Garware Elastomers Ltd  
Pune

G.G Tyres & Tubes  
Kothur – 509 223

Galvanisers India  
Mumbai – 400 006

Hawkins Cookers Limited  
Thane – 400 604

Hind Elastomers Pvt.Ltd  
Mumbai – 400 006

Indian Rubber Products  
Haridwar

Jayashree Rubber Industries  
Mumbai – 400 002

JCB India Ltd.  
Haryana – 121 004

Joseph Leslie Dynamiks Mfg.  
Pvt. Ltd.  
Vasai

Json Polymer  
Mumbai – 401 208

Juggernaut Auto Industries  
MUMBAI - 400 067

Kantilal Chotalal & Company  
MUMBAI -400 060

Katson Polymers  
Belgaum -591 113

Kross International  
Solapur -413 006

Kurwa Rubber Valves  
Mulund (W)

Kwality Polymers Pvt Ltd  
Thane - 400 604

Lathia Rubber Mfg Co. Pvt  
Ltd.  
Mumbai -400 072

Lion Rubber Industries Pvt.  
Ltd.  
Vasai

Mansons Automotive Rubber  
Pvt.Lt.d.  
Mumbai - 400 064

Maxan Corporation Pvt Ltd  
Ahmedabad

National Rubber Factory  
Jaipur - 302013

Newage Fire Protection Inds  
Pvt Ltd  
Mumbai- 400 022





Nu - Cork Products (p) Ltd  
Rajasthan

Poddar Tyres & Rubbers  
Delhi – 110034

Polestar Rubber Industry  
Hyderabad - 500 077

Polybond India Pvt. Ltd.  
Pune – 412102

Polyhose India (Rubber) Pvt.  
Ltd.  
Chennai

Prasad Polymers  
Mumbai

Precision Rubber Industries  
Mumbai - 400 018

PTFE Rubber Works  
Mumbai - 400 063

R M Exports  
Jalandhar - 144 012

Rane Elastomer Processors  
Mumbai – 400 068

Royal Carbon Black Pvt Ltd  
Matunga (w)

Royal Plastic Industries P.Ltd.,  
Mumbai – 400 068

SV Industries  
Bangalore - 560058

Scorpion Industrial Polymers Pvt  
Ltd., Chennai - 600 041

Sigachi Group of Companies  
Hyderabad -500 049

Super Hoze Industries Pvt Ltd  
New Delhi -110 002

Syndicate Wiper Systems Pvt  
Ltd, Navi Mumbai – 400 701

The Rubber Range  
Mumbai

Thejo Engineering Pvt. Ltd.  
Chennai -600 067

T.M.Tyres Limited  
Secundarabad - 500 003

Toja Tyre & Treads Pvt.  
Limited  
Kerala – 683 574

Triveni Rubber  
Thane -400 601

United Rubber Indust.(I) P.Ltd  
Bhayandar – 401 105

Vako Seals Pvt.Ltd.  
Mumbai – 400 063

Vavanje Crumb Rubber LLP  
Mumbai - 400 088

Wriston Polymers Private  
Limited, Chennai

Zenith Industrial Rubber  
Products Pvt Ltd  
Dombivli (E)

**LIFETIME MEMBERS:**

Apollo tyres  
Gujrat

ERA Global Standards  
Delhi

Excel Rubber Ltd  
Hyderabad

Indo china Impex  
Delhi

Innovative tyres  
Mumbai

J.K.Tyres  
Mumbai

Kabeer  
Component/Pt.Elangapranda  
Delhi

Motiba Silicone Pvt ltd  
Mumbai

Mysore Polymers & Rubber  
Products Pvt.ltd  
Mysore

Nandi Rubber  
Hyderabad

Ram Lubhaya & sons  
Ludhiana

Yokhama  
Delhi



## Machineries & Equipment

### Chemical Section

FTIR Spectrophotometer with ATR (Nicolet 6700)  
FTIR Spectrometer ( Perkin Elmer Paragon 1000)  
CHNS Analyzer (TRUSPEC –CHNS MICRO)  
High Pressure Liquid Chromatograph (HPLC/GPC Agilent 1100)  
GCMS with Pyrolyser / FID (Shimadzu GC -17A)  
ICP – Spectrophotometer (Spectrociros CCD)  
Weather-O-Meter ( Atlas Model Ci3000 W)  
Low temperature Retraction Rigidity  
Low Temperature Brittleness Tester (Nivtech)  
BET Surface Area Analyzer (Smart Instrument SORB90)  
Flammability Tester  
Brookfield Viscometer (Brookfield DV-II)  
IR Spectrophotometer(Perkin Elmer 1310)  
Gas Chromatograph – GC 2014  
Submicron Particle Sizer – Nicomp 380  
UV Spectrophotometer-SHIMADZU 1800

### Thermal Section

Dynamic Mechanical Analyser (DMA) (VA-4000) METRAVIB  
Servo Hydraulic Machine (Instron Make)  
Stress Relaxometer  
Differential Scanning Calorimeter (DSC-7) PerkinElmer  
Differential Scanning Calorimeter (Q-10)-TA instrument  
TGA Pyris 1 PerkinElmer  
Thermo Gravimetric Analyser (TGA – 7) -PerkinElmer  
Thermo Gravimetric Analyser (TGA-6) with auto sampler,  
PerkinElmer  
Thermogravimetric Analyser (Q-50)-TA instrument  
Izod – Impact Tester  
Melt Flow Index Tester  
Vicat Softening Point Tester

### Creep Testing Equipment:

Compression  
Torsion

### Physical Section

Rheometer Model-R-100, Monsanto  
Mooney Viscometer, LABTECH  
Rubber Processability Analyser (RPA), ALPHA TECHNOLOGIES,  
USA  
Universal Testing Machine (10000kg, 500 kg)  
Universal Testing Machine Zwick (500 kg)-STAR Make  
Milli Megohm Meter (Model LS-3)

Universal Testing Machine with video extensometer -  
INSTRON  
Rubber Hardness Tester-(IRHD), Dead Load etc.  
DIN Abrasion Tester (2Nos)  
Taber Abrasion Tester( USA)  
Dunlop Tripsometer  
De-mattia Flexing Machine  
Ross Flexing Machine  
Ozone Chamber (2 nos)  
Deflection Tester for diaphragms  
Air/Gas Permeability Tester  
Goodrich Flexometer  
Carbon Black Dispersion Tester  
High Voltage Tester (40 KV)  
Gamma Chamber (2500 Ci)  
Shock Absorption Tester

### Supporting facilities

Pelletizer  
Humidity Chamber (Nivtech )  
High Pressure Reactor  
High Pressure Hose testing Machine  
Electronic Balances (4 nos)  
Multicell Ageing Oven  
Oxygen/Air Bomb Tester  
Air Circulating Ageing Ovens (9 nos)  
Hydro Pneumatic Pump  
UV Chamber(Nivtech)  
Cryo Test Chamber up to 80°C (Nivtech)  
Cryo Test Chamber up to 30°C with sealant test facility  
(Nivtech)



**Processing & Other Equipment:**

Re-treading Machine

**Mixing:**

Banbury Mixer (FA 40) – 35 liter Capacity  
Mixing Mill  
6" x 13" – 2 nos.  
12" x 30" – 1 no.  
16" x 42" - 1 no.  
Brabender Plasticorder with extruder  
(Model PL-2200)

**Moulding Press:**

Twin Hydraulic Press of sizes  
12" x 12",  
14" x 14"  
Hydraulic Press  
36" x 36" – 1 no.  
47" x 47" – 1 no.  
1 mtr x 2 mtr – 1 no.  
Vacuum Compression Press – Panstone  
Rubber Injection Moulding Machine – REP Make (1000cc  
Capacity)  
Plastics Injection Moulding Machine (Engel USA)

**Calander:**

3 Rolled Calender – Lab Size – 1 no.  
3 Rolled Calender – 16" x 48" size – 1 no.

**Extruder:**

3" Cold Feed Extruder  
6" Hot Feed Extruder  
Twin Screw Extruder with feeder

**Auto Clave:**

4' x 8' length Auto clave (Indirect type) 1no.  
2' x 8 mtrs length Autoclave (direct type) 1 no.  
Boiler 300S (Thermax Make).- 1 no.

**Nano & Latex Section:**

Particle Size Analyser  
MST (Mechanical Stability Tester)  
Surface Tensimeter  
Dipping Machine  
Thread Unit  
Foam Forming Equipment  
Hot Air Oven  
Ball Mill for Latex & Dispersion Mill  
Colour Spectrophotometer  
Micro Wave Oven

**Tool Room / Maintenance Section:**

CNC Milling Machine (Hardinge Make)  
Universal Milling Machine (Vertical & Horizontal)  
Radial Drill Machine  
Surface Grinding Machine (Manual)  
Hydraulic Surface Grinding Machine  
Centre Lethe Machine  
Bench Grinding Machine  
High frequency Welding Machine  
Hose Bursting Pressure Machine  
Air Compressors

**Tyre Testing Machineries to Shereography:**

Tyre Endurance Testing Machine for Scooter, Passenger car,  
Truck and Bus etc with Rolling Resistance attachment.  
Noise, Vibration & Harshness Testing  
Universal Testing Machine with plunger test  
Bead Unseating facility, foot print and  
pressure analysis.



**ROLL OF HONOURS & ACTIVITIES / EXPERTISE**

**Accreditations / Certifications / Recognitions from:**

- NABL (ISO:IEC/17025 :2005)
- UL (Underwriters Laboratory), USA
- ISO – 9001:2008
- Centre for Military Air Worthiness & Certification (CEMILAC)
- Directorate General of Mines Safety (DGMS)
- Dept. of Scientific & Industrial Research
- BIS

**Main Activities:**

- ❖ Process and Product Development
  - ❖ Material Selection / Specialization and Development
  - ❖ Reverse Engineering / Compound Development
  - ❖ Testing and certifications (Tyre & Non-Tyre testing)
  - ❖ Rubber Engineering and Finite Element Analysis
  - ❖ Quality Audit & GMP services.
  - ❖ Training & Consultancy services on Rubber Technology & LMS (Laboratory Management System)
  - ❖ Storage and Service life prediction
  - ❖ Quality Control / Assurance
  - ❖ Process Improvement / Trouble Shooting
  - ❖ Cost Reduction
  - ❖ Failure Analysis

With the help of state-of-the art facilities created by IRMRA and the expertise developed by its scientists, IRMRA can provide technical and scientific advise to the industries in respect of the following:

**Expertise :**

- Specification and its interpretation
- Reverse Engineering
- Process Development
- Indigenization & import substitution of rubber products
- Cost reduction
- Life prediction
- Control of rejections / wastage
- Improvement in quality of final products
- TPR

**FOR FURTHER DETAILS, PLEASE CONTACT**

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**Indian Rubber Manufacturers Research Association**

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