

TRAERF

# Annual Report 2014

*(April, 2013–March, 2014)*



TR Anantharaman Education  
and Research Foundation  
Hyderabad, India

*(For soft copy, please visit [www.tra-erf.org](http://www.tra-erf.org))*

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# Fourth Annual Report: 2013-14

(April, 2013 – March, 2014)

## TR ANANTHARAMAN EDUCATION AND RESEARCH FOUNDATION

### 1. Introduction & Background

Professor Thanjavur Ramachandran Anantharaman, a doyen of Indian Metallurgy, had laid strong foundation for Metallurgical Education and Research in independent India. To carry forward his work, his students, colleagues and associates have initiated a Trust, named after him as TR ANANTHARAMAN EDUCATION AND RESEARCH FOUNDATION (TRAERF). It has been officially formed as a Charitable Trust by its authors (Dr. N Eswara Prasad, Dr. Partha Ghosal and Shri T Pandurangarao) on 23<sup>rd</sup> September, 2009 in the office of Sub-Registrar(II) at Ranga Reddy District (East), Hyderabad in the state of Andhra Pradesh, India. TRAERF has the following trustees:

Dr. P. Rama Rao	President
Dr. S. Ranganathan	Member
Dr. V. V. Kutumbarao	Member Secretary
Dr. G. Malakondaiah	Member Treasurer
Dr. K. Chattopadhyay	Member
Dr. G. Sundararajan	Member
Dr. K. Bhanu Sankara Rao	Member

*[Brief details of the Trust members are given in Appendix – I]*

During the year 2013-14, the Foundation constituted a 5- member Advisory Committee to assist it in organising its activities and raising funds. The members are:

Dr. Baldev Raj	President (Research), PSG Institutions, Coimbatore
Dr J. Viplav Kumar	Dean(R&D), MGIT, Hyderabad
Dr. R.K. Mandal	Dept. Met.Engg., IIT-BHU, Varanasi
Dr. N.K. Mukhopadhyay	Dept. Met.Engg., IIT-BHU, Varanasi
Dr. T.A. Abinandanan	Dept. Materials, IISc., Bangalore

## 2. Principal Objectives of TRAERF

The principal objectives of the Trust are listed below:

- i. To motivate meritorious undergraduate students of engineering to pursue a research career in engineering, through a scheme of awarding Summer Fellowships at reputed institutions and other incentives.
- ii. To award Scholarships to first rankers among 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year students pursuing B.Tech. Metallurgical Engineering in selected institutions
- iii. To award Prof T R Anantharaman Prizes for Science Communication by recognizing articles published by young Indians in publications such as IIM News, Current Science, Nanotech Insights.
- iv. To organize a “Professor T R Anantharaman Memorial Lecture” to be delivered by an eminent person every year on his birthday namely, November 25 at venues to be decided by the Board of Trustees.
- v. To provide partial or full financial support to students pursuing Ph. D. research in any Materials Science related subject to enable them to present their original research work in International Conferences abroad.
- vi. To award Visiting Scientist positions for a period of up to three months to faculty members from the less endowed institutions to carry out research at premier institutions like the Indian Institute of Science, Institute of Technology at Banaras Hindu University and the various Indian Institutes of Technology.
- vii. To establish an Endowment Chair (named as the “Professor T R Anantharaman Endowment Chair”) in one or more premier institutions in India for the purpose of carrying out research in frontier areas of Materials Science and Technology and to pay monthly Honorarium to one serving faculty member in these institutions who is selected to occupy this Chair for a maximum period of one year.
- viii. To organize one or more International Conferences periodically (period to be decided from time to time by the Board of Trustees) in the name of Professor T R Anantharaman on research topics of current relevance.
- ix. To sponsor/provide financial support for basic research projects in the fields of Science and Engineering.
- x. To sponsor research and outreach activities related to History of Indian science and technology and Materials heritage of India
- xi. To sponsor research activities aimed at a deeper understanding of Indian Philosophy and Yoga.
- xii. To organise publication of Professor T R Anantharaman’s unpublished writings and speeches on topics in metallurgy, materials science, philosophy and yoga.
- xiii. To maintain a Library of Professor T R Anantharaman memorabilia such as texts of his speeches, photos, audio and video recordings, available with family members, friends and institutions.
- xiv. To take up any other activity that would perpetuate the memory of Professor T R Anantharaman, as may be decided by the Board of Trustees from time to time.

In line with the above broad objectives and to efficiently utilize the limited funds at its disposal, TRAERF presently extends financial support to select meritorious students of Metallurgy/Materials Science belonging to non-top-tier institutions in India. Such support, aimed at enhancing their knowledge and research skills, is presently in the form of Summer Internships at top R&D institutions and industries.

Further, TRAERF extends financial support to select teachers of Metallurgy/Materials Science belonging to non-top-tier institutions in India. In this initiative launched this year, TRAERF has combined with Sir Dorabji Tata Trust to support training of young faculty members of Metallurgy / Materials Science disciplines by a celebrated Mentor. Such support, aimed at enhancing their teaching and research skills, is in the form of Faculty Fellowships that would enable the teachers to train for a period of up to a full academic semester with a celebrated Mentor in advanced countries. The selected Fellow will receive a Fellowship to the tune of US\$ 3000/- pm (payable by Sir Dorabji Tata Trust) in addition to fully-paid international travel (payable by TRAERF).

In addition, training workshops are conducted by TRAERF.

### **3. A Brief Report on the Activities of TRAERF during 2013 - 2014**

#### **3.1. Fellowships and Scholarships:**

- (i) **Sir Dorabji Tata-TR Anantharaman Faculty Fellowships:** Following an elaborate nomination and screening process, two faculty members from NITs have been selected for the award this year. The first awardee, Dr. K. Siva Prasad, Assistant Professor, National Institute of Technology, Tiruchirapally, will be mentored by Professor RS Misra at the University of North Texas, USA over a 4-month period (February - May, 2014). The second awardee, Dr. Manoj Chopkar, Assistant Professor, National Institute of Technology, Raipur will be mentored by Dr. Chandrasekharan at the Purdue University, USA. Dr. Chopkar is expected to commence his training in September / October, 2014.
- (ii) **Professor TR Anantharaman Merit Prize:** Mr. Shubham Bansal, a student of Department of Metallurgical Engineering, IIT (BHU) - VARANASI has been awarded the Professor TR Anantharaman Merit Prize for standing first in the aggregate at the end of the first three semesters of B.Tech. in Metallurgical Engineering. The Prize of value Rs. 10,000 and a Certificate were given to Mr. Bansal on the occasion of the Metallurgy Day 2014 of the Department.
- (iii) **Summer Internships:** The following top ranking B.Tech. (Part III) students of various departments of Metallurgical Engineering and Materials Science have been awarded Summer Internships at various research institutes, technology centres and industries.

	Name of the Awardee	Affiliation	Mentor
1.	Vimal Kumar	NIT-Trichi	Tata Steel
2.	Saurabh Kesarwani	NIT-Nagpur	Prof. Srinivasrathavan, IISc, Bengaluru
3.	Vinay Mohan Singh	NIT-Raipur	Prof. Nilesh Prakash Gurao IIT-Kanpur
4.	T Anil Kumar	College of Engg.,AU- Visakhapatnam	Prof. BS Murty IIT-Chennai
5.	Vantikommu Sowmya	JNTU-Hyd	Dr. N Eswara Prasad RCMA (Mat.), CEMILAC

Each of the above students has been awarded a one-time grant of Rs. 12,000 and Travel Allowance at actual subject to a maximum of Rs. 3,000/

### **3.2. Conferences and Seminars:**

- (i) ***Three – day national workshop on FATIGUE, FRACTURE AND LIFE EXTENSION FFLE-2014***

This was conducted by TRAERF in association with Defence Metallurgical Research Laboratory and Regional Centre for Military Airworthiness, CEMILAC of DRDO at DRDO Auditorium, Kanchanbagh, Hyderabad during January 29-31, 2014. More than 200 participants (including IAF service personnel and engineers from HAL, MIDHANI, NFC, DRDO AND DAE) with 80 meritorious undergraduate students have taken part actively in the workshop. A brief summary of the workshop is given in Appendix – 2 and the same will appear in the April Issue of Metal News of IIM

Since it was felt that such workshops / seminars are proving to be a success as they are able to benefit students and faculty as well as working engineers of metallurgy and materials science, it was proposed to organize 2-3 such events every year.

### **3.3. Meetings Held:**

8<sup>th</sup> and 9<sup>th</sup> Meetings of the Board of Trustees of the TRAERF to review and plan various activities of TRAERF were held at Hotel Green Park, Hyderabad and Director's Conference Hall, ARCI, Hyderabad respectively on December 29, 2013 and March 14, 2014. The minutes of these meetings can be found at Appendices 3 & 4.

### **3.4. Fund-Raising & Financial Management:**

The principal source of funds for the Trust is donations received from colleagues, friends, students and well-wishers of Professor TR Anantharaman. The list of donors who have contributed to the corpus fund till date is given in Appendix – 5. Since many others, students and admirers of Professor TR Anantharaman, staying outside India have expressed their wish to contribute funds to the Trust, an application has been submitted to the Government of India for permission to receive donations from NRIs. The application is pending with the Government for the want of a few additional documents.

The required documents will be procured, and the duly modified application will be resubmitted to Ministry of Home Affairs, Government of India for its approval.

The financial transactions and the management of bank account are monitored by M/s Jyothirmayi Associates, auditors for the Foundation. Their audit report for 2013-14 and the budget statement for 2014-2015 are given in a separate document, appended to this report (please see the Appendices – 6 & 7)

### ***3.5. Income Tax Exemption***

The Trust had obtained approval of Income Tax department of Hyderabad for exempting the donors from paying income tax on the donations under section 80G of Income Tax Act, 1961 for an initial period of 2 years. It has been decided to seek extension of this approval for which the Chartered Accountants M/s Jyothirmayi Associates have initiated the necessary formalities.

### ***3.6. Official Website of TRAERF***

The official website ([www.traerf.org](http://www.traerf.org)) of TRA-ERF is constantly updated (thanks to Shri T. Vikram) and the same incorporates the changes suggested by the Trust members. This website is now fully operational and provides all the basic information about the trust and its various activities. Notably, the website features (i) Principal aims and mission, (ii) Web pages about Professor TR Anantharaman, (iii) List of Donors and Mode of making Donations to the Trust, (iv) Photo Gallery and (v) A corner for Recent Events of the TRAERF. Space in the website will be set aside for dedicated on-line advertisements from reputed metallurgical and materials institutions and industries. Effort will be made in the coming year to identify the units for advertisement and the first of such advertisements will be set aside for Sir Dorabji TATA trust free of tariff.

### ***3.7. Proposals for 2014-2015***

- (i) Top ranking students and outstanding teachers of 10 Metallurgical Engineering Departments will be chosen for extending TRAERF support to expose them to learning and research opportunities better than what they may have hitherto experienced.
- (ii) It is proposed to award a maximum of 4 new SDT-TRA faculty fellowships in order to fully utilize the grant of Sir Dorabji TATA trust and thus, giving major impetus for this valuable initiative.
- (iii) 10 Numbers of experimental kits will be assembled and the members of the Trust will pro-actively volunteer to use them for presentation by them at one or more of the selected list of 10 institutions.
- (iv) Following National Seminars / Workshops are planned during 2014-15:
  - **Special Lectures** by select International speakers will be organized under the aegis of TRAERF and the local Hyderabad chapters of IIM and MRSI.

- **Lectures** by Dr. Siva Prasad, NIT, Trichi will be organized at the Metallurgical Engineering Departments of JNTU-Hyderabad, MGIT-Hyderabad and NITs – Trichy & Warangal
- A **5-day School** on METALLURGY FOR NON-METALLURGISTS during September, 2014 at MGIT. Professor Rama Rao suggested giving the ASM publication of the same name as the theme of the School to all the participants.
- A **Short Term Course** (5 to 7 days) on FRACTURE MECHANICS IN AEROSPACE DESIGN during November – December, 2014 by Dr. Samir V Kamat and Dr. M Srinivas of DMRL, Hyderabad and Dr. N Eswara Prasad of RCMA (Mat.), CEMILAC, Hyderabad with participation of engineers from HAL, IAF and DRDO/DAE.
- **3-Day Workshop** and/or National Seminar on an appropriate topic at IISc., Bangalore by Professor TA Abinandanan



## **T R Anantharaman Education and Research Foundation, Hyderabad: *Board of Trustees***

The Board of Trustees charged with the responsibility of administering the affairs of the Trust consists of the following members who have a record of decades of experience in education and research in materials science and engineering.

1. **Dr. P. Rama Rao** is the President of the Trust. He held several top posts such as Chairman of Atomic Energy Regulatory Board (AERB), Mumbai, Secretary to the Government of India in the Department of Science and Technology (DST), and Department of Ocean Development (DOD), New Delhi, Vice Chancellor, Central University of Hyderabad (HU) and Director, Defence Metallurgical Research Laboratory (DMRL), Hyderabad. He has been the President of several professional bodies in science and engineering in the country. He was awarded PADMA VIBHUSHAN in 2011 by the Government of India. He is presently the Chairman of the Board of Governors of the Advanced Research Centre International (ARCI), Hyderabad, Chairman of the Councils of Jawaharlal Nehru Centre for Advanced Scientific Research and Indian Institute of Science, Bangalore. He is a member of Science Advisory Council to the Prime Minister of India and the Atomic Energy Commission, Government of India. Dr. Rama Rao is a Fellow of several reputed national and international societies and bodies – FNAE, FNA, FASc., FNASc., Foreign Associate of NAE(US), FREngg(UK) and FTWAS. ([ramaraop37@gmail.com](mailto:ramaraop37@gmail.com)).
2. **Dr. S. Ranganathan**, IBAE Distinguished Professor and Homi V Bhabha Visiting Professor, Department of Materials Engineering, Indian Institute of Science, & National Institute of Advanced Studies Bangalore. He has made pathbreaking contributions in physical metallurgy, particularly in the fields of field ion microscopy, quasicrystals and bulk metallic glasses which have been acclaimed internationally and have won him several awards. He was the Chairman of the Mechanical Sciences Division of Indian Institute of Science, Bangalore and President of the Indian Institute of Metals, Kolkata. He is a Fellow of IASc, INSA, INAE and TWAS. ([rangu2001@yahoo.com](mailto:rangu2001@yahoo.com))
3. **Dr. V.V. Kutumbarao**, has been associated with engineering education and research for over four decades. He was Head of the Department of Metallurgical Engineering, Banaras Hindu University (BHU), Varanasi, Director of the Jawaharlal Nehru Aluminium RD&D Centre, Nagpur and Pro-Vice Chancellor of Gitam University, Visakhapatnam. He is a Fellow of INAE. ([rao.vvk@gmail.com](mailto:rao.vvk@gmail.com))
4. **Dr. Guntupalli Malakondaiah**, is a reputed researcher with many original contributions to his credit. He was formerly the Director of the Defence Metallurgical Research Laboratory, Hyderabad and presently, the chief controller of R&D for Materials at DRDO HQs., New Delhi. He is a Fellow of INAE. ([gmalak123@gmail.com](mailto:gmalak123@gmail.com))

5. **Dr. Kamanio Chattopadhyay**, is an outstanding researcher of international repute. He was formerly the Chairman of the Department of Materials Engineering and at present the Chairman of the Mechanical Sciences Division at the Indian Institute of Science, Bangalore. He is intimately connected with some of the space research programmes. In recognition of his notable contributions in physical metallurgy, materials science and engineering he has won several awards. He is a Fellow of IASc, INSA and INAE. ([kamanio@materials.iisc.ernet.in](mailto:kamanio@materials.iisc.ernet.in))
6. **Dr. G Sundararajan**, is Director, International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad from September 1997. Previously at DMRL during 1982-97, he made notable contributions in the areas of tribological behaviour of several materials. At ARCI, as its Director, he has made wide ranging contributions to the development, demonstration and commercialization of materials-based technologies. Winner of several awards, he is a Fellow of IASc, INSA, INAE and ASM. ([gsundar@arci.res.in](mailto:gsundar@arci.res.in))
7. **Dr. K. Bhanu Sankara Rao**, is the Steel Chair Professor at Mahatma Gandhi Institute of Technology, Chaitanya Bharati Educational Society, Hyderabad. Previously, during his 32 year tenure at IGCAR, Kalpakkam, he provided excellent R&D support in metallurgy for the development of Fast Breeder Reactor (FBR) Technologies in India. Winner of several awards, he has been editor of International Materials Reviews (1995-2008), Energy Materials (since 2004) and Chief Editor of Transactions of The Indian Institute of Metals (since 2004). He is a Fellow of ASM, INAE, IASc and IIM. ([kbrse@uohyd.ernet.in](mailto:kbrse@uohyd.ernet.in))

A Brief Account of the Three-Day National Workshop on  
**FATIGUE, FRACTURE AND LIFE EXTENSION (FFLE-2014)**  
*Hyderabad, 29-31 January 2014*



Hyderabad, a unit of CEMILAC, DRDO).

A three day National Workshop on “Fatigue, Fracture and Life Extension (FFLE–2014)” was organised by the TR Anantharaman Education and Research Foundation (TRA-ERF) during 29<sup>th</sup> – 31<sup>st</sup> January, 2014 at Hyderabad jointly with the Defence Metallurgical Research Laboratory (DMRL- Hyderabad) and Regional Centre for Military Airworthiness (Materials) (RCMA-

For the first time in India, the deliberations included Life Extension Methodologies and Life Extension Exercises for indigenously developed aero-engine and aircraft structural parts. The rationale for this coverage was the following: (i) the phenomena and micro-mechanisms of Fatigue and Fracture, though complex, are the principal sources of damage in aeronautical structures, (ii) an understanding of these micro-mechanisms is essential for the development of advanced new materials with improved fuel efficiency and (iii) most importantly, extended service life of aero-components and aero sub-systems can result in substantial savings in foreign exchange, which can only be accomplished by studying comprehensively the controlling fatigue and fracture phenomena and using well established life extension technologies. Detailed deliberations on these aspects were held through five structured technical sessions consisting of 17 invited lectures. The proceedings were flagged off with a keynote address on “DAMAGE TOLERANCE: A STRATEGY BASED ON MULTI-DISCIPLINARY SCIENCES AND TECHNOLOGY”, by the internationally recognised expert in the field of fatigue and fracture – Prof. B Dattaguru of Indian Institute of Science (IISc), Bangalore.

This was followed by 17 invited lectures in 5 structured technical sessions namely, (i) Fundamentals of Fatigue and Crack Growth (ii) Fatigue and Fatigue Crack Growth of Engineering Materials, (iii) Fracture and Fracture Based Design, (iv) Damage Evaluation and Life Prediction and (v) Life Extension Technologies. The technical sessions were chaired by eminent aero-material scientists and outstanding structural aeroengineers – Prof. J L Strudel (of France), Dr. P Rama Rao, Prof. B Dattaguru, Prof. Vakil Singh and Dr. K Tamilmani respectively. In his closing remarks Dr Rama Rao traced the history of how Al-Li alloy

research at DMRL started under his guidance during the 1980s, initially with Russian collaboration, but later developed completely in-house. The following speakers delivered invited talks during the technical sessions:

The technical sessions were well attended by over 200 participants that included working engineers of HAL, scientists of DRDO and DAE, Air Force personnel and 80 meritorious students of Metallurgy, Mechanical Engineering and Aero-engineering. A dedicated experimental session was conducted to demonstrate the practical methodologies for the evaluation of fatigue (low cycle, high cycle and fatigue crack growth), fracture toughness properties including elastic – plastic fracture mechanics based  $J_{IC}$  determination, and scanning electron microscopy to determine the fracture mode and quantification of fractographic features such as size and distribution of micro & macro dimples, cleavage facet size and mixed mode fracture features. The technical deliberations and practical demonstrations were aimed at imparting sufficient and essential knowledge to the Workshop participants so that all of them are acquainted with latest developments in the fields of fatigue, fracture and life extension.

In the **Valedictory Session** feedback was taken from the participants. The highlight was a detailed set of suggestions from the airport personnel, summarised and voiced by Group Capt. DV Murali, VSM, CO AFLE (Koraput). They were: (1) The need of the hour is to translate the project studies and papers by the scientists to real time utility on IAF aircraft and aero-engines in terms of reliability improvement programs and life reviews; going beyond the OEM-fixed total life; (2) Establishment of NDT and Material Testing Centers for IAF drawing expertise from DRDO, CSIR, DAE (especially IGCAR, Kalpakkam); (3) Good Life Reviews based on appropriate FOH standards including refurbishment techniques, with IAF acting as the nodal agency with necessary help from CEMILAC, HAL, DRDO/ CSIR Laboratories, and if required, by incorporating adequate private participation; and, (4) Conduct of a few theme oriented Workshops, similar to the present FFLE-2014 to finalize specific programmes on Life Extension.

The Workshop proceedings were finally summarised by Professor Kutumbarao of DMRL, Hyderabad, as: “the technical programme is excellent, the talks were genuinely helpful, informative and outstanding, the sessions were conducted smoothly and within the schedule, organisation was smooth and the logistics were well taken care of”.

The successful conduct of FFLE – 2014 encourages the TR Anantharaman Education and Research Foundation to look forward to arranging similar Workshops, National Seminars, Theme Lecture Series and Focused Research Initiatives in the coming years.

**T R ANANTHARAMAN EDUCATION AND RESEARCH FOUNDATION**  
**8-9-140, Dhatunagar, Kanchanbagh, Hyderabad-500058**

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**Minutes of the 8<sup>th</sup> Meeting of the Board of Trustees held on  
December 29, 2013 at Hotel Green Park, Hyderabad**

The following were present:

- |                              |                      |
|------------------------------|----------------------|
| 1. Dr. P. Rama Rao           | - President, TRAERF  |
| 2. Dr. V.V. Kutumbarao       | - Secretary, TRAERF  |
| 3. Dr. G. Sundararajan       | - Trustee, TRAERF    |
| 4. Prof K. Bhanu Sankara Rao | - Trustee, TRAERF    |
| 5. Dr. N Eswara Prasad       | - Author and Invitee |
| 6. Shri T. Panduranga Rao    | - Author and Invitee |

Leave of absence was granted to Dr S Ranganathan, Dr G Malakondaiah and Prof Kamanio Chattopadhyay, Trustees.

Dr. P. Rama Rao, President of the Trust, welcomed the Trustees and invitees and thanked each of them for not only taking the time to attend the meeting, but also for their (including those not present) dedicated contributions to the TRAERF.

The following agenda items were then taken up for discussion.

***Item 1: Approving the minutes of the 7th meeting held on March 15, 2013.***

The minutes of the seventh board meeting were circulated to all the Members. All the comments of the members have been incorporated and the modified minutes are unanimously approved.

***Item 2: Information items and Donations received***

- Details of the donations received since the last meeting were brought to the notice of the members and the same are listed in *Annexure 1*. Status of the fixed deposits in the SBI branches of Ramanthapur and Chandrayangutta was also brought to the notice of members. The details are given in Annexure 2.
- It was agreed that the interest generated on the FDs can be utilized for Summer Internships to 12 meritorious third year B.E. / B.Tech. students of Metallurgy and Materials Engineering.

***Item 3: Application for accepting donations in foreign currency***

Dr. Rama Rao apprised the members of the efforts made to obtain all the necessary documents and to submit the same to Ministry of Home Affairs, Government of India for obtaining certificate of registration under Foreign Contribution (Regulation) Act, 2010

FRCA). Unfortunately, the application was rejected on the ground that the trust had not spent the minimum specified Rs.10 lakh on charitable activities during the last three years.

Dr. Rama Rao requested Professor Kutumbarao to incorporate all the necessary modifications to the application submitted earlier to the Home Ministry with the help of M/s Jyothirmayi and Associates and resubmit the duly modified application to the Ministry Home Affairs.

***Item 4: Workshops to be held during 2013-2014***

i. Dr. Eswara Prasad described the arrangements made for organizing the TRAERF's 3-Day National Workshop on FATIGUE, FRACTURE AND LIFE EXTENSION (FFLE-2014): Drafting the Tentative Technical Programme, obtaining the consent of all the faculty of the workshop, Printing and Distribution of Brochure for Nomination of Participants and Sponsorships.

- Dr. Prasad was advised to approach DST at the earliest with the duly filled in application form with all necessary documents for financial assistance.
- M/s Jyothirmayi and Associates will help with the proper financial transactions and audit of the same. A sum of Rs. 5,000/- as audit charges for the workshop was approved by the trust members.

ii. Dr. Rama Rao appreciated the suggestions of the members and suggested that conduct of the following workshops / seminars should be pursued vigorously as such activities aid greatly in fulfilling the objectives of the trust:

- 5-day School of METALLURGY FOR NON-METALLURGISTS at ARCI, Hyderabad with Dr. Srikanth Joshi of ARCI and Dr. Bhanu Sankara Rao as coordinators;
- A National Workshop on INTEGRATED COMPUTATIONAL MATERIALS ENGINEERING in association with IIM as a part of its annual NMD/ATM at Pune in November, 2014 with rofessor S Ranganathan as principal advisor.
- 3-day National Workshop on ELECTRON MICROSCOPY at DMRL, Hyderabad with Dr. Partha Ghosal as the principal organizer.
- Dr. Sundararajan suggested conducting Metallurgy / Materials Engineering workshops on Industry - Desired Themes at the noted Industrial Houses. Such units, identified for 2014 are: Tata Steel, HAL Units, Bharat Forge, ADA/CEMILAC of DRDO and Midhani. A draft letter is to be prepared by Dr. Eswara Prasad and the same will be dispatched (after due approval from Professors Rama Rao and Kutumbarao) for the approval of these industrials.

***Item 5: Selection of Summer Internees and TRA Prize at BHUMET***

i. Dr. Rama Rao will write to Professor GVS Sastry, Head, IIT-BHU (MET) to forward the details of the II year topper of the Department, who will be awarded with the TRA Prize for the year 2014.

ii. Dr. Eswara Prasad and Professor Bhanu Sankara Rao will immediately write to the Heads of Metallurgy / Materials Engineering Depts of IIT-BHU, NITs, MGIT and

JNTU to forward their nominations for TRA-ERF Summer Internships. The inputs thus obtained will be submitted to Dr. Rama Rao for final award of Internships.

- iii. Further, Dr. Prasad will identify and obtain the consent of possible mentors for the above students for the summer internship.
- iv. Each of the 10 identified awardees will be informed of their selection and also, the following information:

- The stipend for the summer internship will be Rs. 6,000 for each month for two months.
- The stipend in the form of Demand Draft on the name of the student will be released before the end of the current financial year.
- Travel support will be awarded to the student on recommendation from the mentor for a maximum amount of Rs. 3,000.
- The Head of each of the above Departments will announce the award to the internee and also submit an Internship Summary Report after the completion of the project.

#### ***Item 6: TRAERF - Sir Dorabji Tata Trust Faculty Fellowships***

**[The SOPs for the Fellowship were finalized and are available in the minutes of 7<sup>th</sup> Meeting of TRAERF Trustees]**

- i. Dr. Siva Prasad of NIT, Trichy has been approved for the award of the Fellowship with Prof RS Mishra, University of North Texas, USA as mentor and will commence his Fellowship programme in the month of February 2014. Financial assistance of Rs. 10,400 as visa fee, Rs 10,800 as processing fee and Rs. 85,130 towards international travel Chennai- Dallas-Chennai was approved.
- ii. Similar assistance to the second awardee, Dr. Manoj Chopkar of NIT, Raipur will be given once the formalities are completed.
- iii. Professors Rama Rao and Kutumbarao will write to IIT-BHU (MET), NITs, PSG College, MGIT, JNTU and other similar institutions for selecting the next set of 4 faculty members for the award of the Fellowship.
- iv. Professor S.Ranganathan, Dr. Sundararajan and Professor Bhanu Sankara Rao will identify a pool of Mentors for the above Faculty Fellowship Awardees, who would include:
  - Professor Eduard Arzt, Germany
  - Professor Soma Sundaram, USA
  - Professor Rao Tummala, USA
  - Professor RS Misra, USA
  - Professor Sridhar Sitaraman, Sweden
  - Professor Ajay Kapoor, Australia
  - Professor Gokhale, USA
  - Professor Hans-J. Christ, Germany
  - Professor Benedictus, USA

Dr. Rama Rao will also write to Professor Harry Bhadesia, Cambridge, UK to find out if he would accommodate a second faculty fellowship awardee this year 2014-15.

***Item 7: National Centre for Experimental Metallurgy and Materials Science***

The proposal submitted by PSG College, Coimbatore to Dept of Science and Technology, GoI was rejected on the ground that the College was a private institution. The application submitted by PSG will now be modified by Prof Kamaraj of IIT-M in consultation with Dr. Baldev Raj. It will be finalized by Dr. G Sundararajan for submission from the Metallurgy and Materials Engineering Department of IIT-Madras, Chennai.

***Item 8: Financial Statement for the period April 1 to December 31, 2013:***

The financial statement given in Annexure-3 and Annexure-4 was approved by the members present.

***Item 9: TRAERF website***

- i. Space in the TRA-ERF website will be set aside for dedicated on-line advertisements from reputed metallurgical and materials institutions / industrial units. 6 such advertisements will be obtained in the current year 2013-2014 and the first of the advertisement will be set aside for Sir Dorabji TATA Trust. Professor Bhanu Sankara Rao and Dr. Partha Ghosal will do the needful in arranging the advertisements. A suggested sum of Rs. 1 Lakh per year from each of the advertisers is suggested and the suggestion was approved by the members present.
- ii. A payment of Rs. 10,000 will be made for the website maintenance and updating as well as for design changes that happen from time to time.
- iii. Dr. Eswara Prasad will write to all the trustees for suggestions to modify the present website contents and also, for inputs for new web pages, if any. Dr. Abinandanan will be requested to format the inputs thus obtained in to modified web pages to be included in the website.

***Item 10: Suggestions for Fund raising***

- i. It was unanimously agreed that the corpus fund has to be enhanced to a sizeable amount so that the Trust can support many more activities.
- ii. Members were requested to help in securing an additional sum of at least Rs.15 lakhs from individual donors during the year 2014-15. Members felt the fund generation by way of conduct of seminars / workshops is very appropriate and urged the members to conduct as many as possible.
- iii. On a suggestion from Professor S Ranganathan an Advisory Committee to the TRAERF was constituted to work out all possible means to substantially raise funds for the trust. The following Advisory Committee was approved:

- |   |            |
|---|------------|
| • Dr. Baldev Raj, President, PSG Institutions | - Chairman |
| • Professor J Viplav Kumar, Dean (Res), MGIT  | - Member   |
| • Professor RK Mandal, IIT-BHU(MET)           | - Member   |
| • Professor N Mukhopadhyay, IIT-BHU(MET)      | - Member   |
| • Professor T Abinandanan, IISc               | - Member   |

Dr Rama Rao will write to the members of the Committee to accept to be a member of the Advisory Committee of TRAERF and help in every way possible. This committee would be



requested to approach potential donors. Dr. Rama Rao's recent modified appeal letter will be forwarded to the committee members for follow-up action.

***Item 12: Any other points***

It was unanimously agreed to appoint M/s Jyothirmayi and Associates as the auditor for the year 2014-15 for all the Trust activities. Necessary charges for maintaining and auditing the Trust accounts will be made by the Treasurer.

The meeting concluded with the President of TRAERF thanking all the members for their active and constructive participation.

These minutes are issued with the concurrence of Professor P Rama Rao, President, TRAERF.

Sd. VV Kutumbarao  
*Secretary*  
*TRA Education & Research Foundation*

**T R ANANTHARAMAN EDUCATION AND RESEARCH FOUNDATION  
8-9-140, Dhatunagar, Kanchanbagh, Hyderabad-500058**

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**Minutes of the 9<sup>th</sup> meeting of the Board of Trustees held on March 15, 2013 at  
Director's Conference Hall, ARCI, Balapur, Hyderabad**

The following were present:

- |                              |   |                               |
|------------------------------|---|-------------------------------|
| 1. Dr. P. Rama Rao           | - | President                     |
| 2. Dr. V.V. Kutumbarao       | - | Secretary                     |
| 3. Dr. G. Sundararajan       | - | Trustee                       |
| 4. Dr. G. Malakondaiah       | - | Treasurer                     |
| 5. Prof K. Bhanu Sankara Rao | - | Trustee                       |
| 6. Prof J. Viplav Kumar      | - | Advisor and Invitee           |
| 7. Dr. N Eswara Prasad       | - | Author and Invitee            |
| 8. Shri T. Panduranga Rao    | - | Author and Invitee            |
| 9. Smt. G. Jyothirmayi       | - | Chartered Accountant, Invitee |

Leave of absence was granted to Prof S Ranganathan, and Prof Kamanio Chattopadhyay, Trustees.

Dr. P. Rama Rao, President of the Trust, welcomed the Trustees, invitees and the Chartered Accountant and thanked each of them for not only taking the time to attend the meeting, but also for their (including those not present) valuable contributions to the work of TRAERF.

The Agenda items were then taken up for discussion.

***Item 1: Approval of the minutes of the 8th meeting held on December 29, 2013***

Minutes of the 8<sup>th</sup> Board meeting were circulated to all the Members. All the comments of the members had been incorporated and the modified minutes were unanimously approved.

***Item 2: Action taken report***

Item	Action required	Action taken
<b><i>Item 3: Application for accepting donations in foreign currency</i></b>	Dr. Kutumbarao to help in incorporating the necessary modifications in the application submitted earlier to the Home Ministry with the help of M/s Jyothirmayi and Associates and resubmit the duly modified application to the Ministry Home Affairs.	Discussed with CA Mrs. Jyothirmayi and Dr. Ghosal. CA will prepare the draft application afresh making sure that the deficiencies pointed out are corrected which will then be finalized by Dr Kutumbarao.
<b><i>Item 4: Workshops to be held during 2013-2014</i></b>	• M/s Jyothirmayi and Associates will help with the preparation and audit of the accounts. A sum of Rs. 5,000/- as audit charges for the workshop was approved by the trust members	CA was paid Rs.5,000/- towards her annual fee for 2013-14 and another Rs.5,000/- towards her services to FFLE Workshop.

	<ul style="list-style-type: none"> <li>• 5-day School on METALLURGY FOR NON-METALLURGISTS at ARCI, Hyderabad with Dr. Srikanth Joshi of ARCI and Dr. Bhanu Sankara Rao of MGIT as coordinators</li> </ul>	Proposed to be held in September 2014, but venue may be shifted to another place, possibly MGIT
	<ul style="list-style-type: none"> <li>• 3-day National Workshop on ELECTRON MICROSCOPY at DMRL, Hyderabad with Dr. Partha Ghosal as the principal organizer.</li> </ul>	Action pending
	<ul style="list-style-type: none"> <li>• A draft letter is to be prepared by Dr. Eswara Prasad for conducting Metallurgy / Materials Engineering workshops on Industry - desired themes.</li> </ul>	Action pending
<b>Item 5: Selection of Summer Internees and TRA Merit Prize at BHUMET</b>	<ul style="list-style-type: none"> <li>• Identifying II year topper of Metallurgy Department of IIT-BHU who will be awarded the TRA Merit Prize for the year 2014.</li> </ul>	DD for Rs.10,000/- favouring the selected student Mr. SUBITAM BANSAL has been sent to Head Met, IIT-BHU for giving it away on the next Metallurgy Day
	<ul style="list-style-type: none"> <li>• Selection of Summer Internees for 2013-14</li> </ul>	Dr. Eswara Prasad will report on the status in the 9 <sup>th</sup> Meeting. Revision of stipend amount to be discussed.
<b>Item 6: TRAERF - Sir Dorabji Tata Trust Faculty Fellowship</b>	<ul style="list-style-type: none"> <li>• <b>Status report on the recipients for 2013-14 and action taken on Selection of Fellows for 2014-15</b></li> </ul>	Dr. Siva Prasad has gone to University of North Texas and Dr. Chopkar will go in September / October 2014 to Purdue. Letters, freshly updated by Professor Kutumbarao, have been sent to institutions having Metallurgy/ Materials Science Departments.
<b>Item 7: National Centre for Experimental Metallurgy and Materials Science</b>	The application submitted by PSG, Coimbatore to be modified by Prof Kamaraj of IIT-M in consultation with Dr. Baldev Raj	The proposal has been redrafted with IIT-M as a partner to PSG College.
<b>Item 9: TRAERF website</b>	Dr. Eswara Prasad will write to all the trustees for suggestions to modify the present website contents and also, for inputs for new web pages, if any. Dr. Abinandanan will be requested to format the inputs thus obtained in to modified web pages to be included in the website	Action pending. This item to be discussed again in the 9 <sup>th</sup> Meeting.
<b>Item 10: Suggestions for Fund raising</b>	Dr Rama Rao to write to the members of the proposed Advisory Committee of TRAERF to accept to be a member of the Committee.	All the proposed persons have accepted to be members of the Advisory Committee

### **Item 3: Status of donations to TRA-ERF**

Donations in Indian currency received during the period April 01, 2013 – February 28, 2014, as listed in *Annexure 1*, as well as status of the fixed deposits in the SBI branches of Ramanthapur and Chandrayangutta, as listed in *Annexure 2*, were brought to the notice of the members.

The application for obtaining permission for accepting donations in foreign currency is pending resubmission to Ministry of Home Affairs, Government of India, for want of (i) Annual Report on TRA-ERF activities for the year 2013 and (b) An appropriate audited statement of TRA-ERF with a net expenditure of more than Rs.10 lakhs towards scholarships etc.

**Action Point 1:** *Annual Report for 2013 to be finalised at the earliest. (Action: Dr. Eswara Prasad with advice and help from Dr. Kutumbarao)*

**Action Point 2:** *Necessary financial statements / documents to be revised and modified application to be prepared. (Action: CA Smt. Jyothirmayi with advice and help from Dr. Kutumbarao).*

The application, duly prepared and supplemented with all necessary documents (including the two mentioned above) will be made available to Dr. Rama Rao by April 10, 2014 to proceed with the resubmission.

### **Item 4: Workshops Held during 2013-2014**

President, TRAERF and the members acknowledged with thanks the efforts made by Dr. N Eswara Prasad, Dr. Vikas Kumar and Dr. M Srinivas for the successful conduct of the 3-day National Workshop on FATIGUE, FRACTURE AND LIFE EXTENSION (FFLE-2014) during 29-31 January, 2014 at Hyderabad.

The members heartily appreciated the quality of the technical programme of FFLE. It was felt that such workshops/seminars are proving to be a success as they are able to benefit students and faculty of metallurgy and materials Sciences while also generating surplus funds for TRAERF. It was proposed to organize at least one, if not two, such workshops every year with the help of colleagues and well wishers.

*Annexure – 3* gives a statement of the Revenue and Expenditure of the workshop FFLE-2014. Members approved the suggestion that Rs. 2 lakhs from the savings of the workshop should become part of the corpus fund in the form of a fixed deposit.

Dr. Eswara Prasad informed the members that a brief report on FFLE-2014 will appear in the April, 2014 issue of IIM's Metal News.

### **Item 5(a): Award of TRA Merit Prize at BHU-MET**

Mr. Subham Bansal, 1<sup>st</sup> Ranker of II-Year BTech of IIT-BHU was selected for the TRA Merit Prize 2014. A cheque for Rs10, 000/- and a Certificate have been sent to the Department to be given away to the student at the next Metallurgy Day function at BHU-MET.

### **Item 5(b): Selection of Summer Internees**

Applications received for the award of the 2-month Summer Internships were discussed. The final list of 5 selected students (all first rankers) from a total of 32 applicants is given in *Annexure 4*. In this regard the help extended by Professor K Bhanu Sankara Rao and Dr. N Eswara Prasad was gratefully appreciated. Each of the above 5 awardees will receive a total stipend of Rs 16,000/- for two months and up to Rs 4000/- towards travel support. Dr Partha Ghosal was requested to help with the Bank work, such as obtaining the DDs etc. Dr Rama Rao will send the DDs to Heads of the concerned Depts with the request that they hand over the DDs to the selected students. HODs will also be requested to help in ensuring that the students prepare a report to be forwarded to the President, TRAERF on completion of the period of their internship..

In order to further improve the response to the award of these Internships, it was decided to enhance the stipend to a total of Rs. 16,000/- for two months and the travel allowance to a maximum of Rs.4000/- with effect from the the current 2013-14 academic year.

It was also agreed to consider applications from 2<sup>nd</sup> year B. Tech. students (first rankers only) during the year 2014-15 on a trial basis.

### **Item 6: TRAERF Faculty Fellowship Programme**

- i. It was informed to the members that one of the two awardees selected this year namely, Dr. Siva Prasad of NIT-Trichy, has commenced his work with his mentor Professor RS Mishra at the University of North Texas, USA.in February 2014.
- ii. A sum of Rs. 7.44 lakhs has been received by TRAERF from Sir Dorabji Tata Trust for supporting Dr. Siva Prasad.
- iii. Dr. Siva Prasad has been paid financial assistance of Rs. 7.44 lakhs towards stay in the USA, Rs. 85,130/- towards international travel, Rs. 10,400/- as visa fee and Rs. 10,800/- as processing fee.
- iv. The second awardee Dr Manoj Chopkar of NIT, Raipur, is expected to utilize the award starting in September/ October 2014.
- v. Nominations for the award of Fellowships in 2014-2015 have been invited from the eligible institutions in the month of February itself. Last date for receipt of the nominations is March 31, 2014. So far the response has been slow.

**Action Point 1:** *Heads of these institutions may be personally approached once again to expedite the process of nomination. (Action: Dr. Rama Rao)*

**Action Point 2:** During his forthcoming visit to the US: **Dr. Sundararajan** will explore possible mentors for the Faculty Fellows selected.

- vi. It is proposed to award a maximum of 4 new Faculty Fellowships during 2014-15 in order to fully utilize the grant of Rs.50 lakhs for the period 2013-15 approved by Sir Dorabji Tata Trust. It was agreed that special efforts will have to be made by the TRAERF to arrange for funds to meet the international travel and attendant costs of the awardees. Dr Rama Rao will write to the potential donors suggested by Dr Viplava Kumar.

**Item 7: National Centre for Experimental Metallurgy and Materials Science**

The earlier proposal by PSG Institutions, Coimbatore for establishing this Centre has been modified to include IIT-M, Chennai as a partner (see *Annexure 5*).

**Action Point:** *The modified proposal to be thoroughly vetted before submission to DST.*  
**(Action: Dr. Sundararajan)**

**Item 8: Financial Statement for 2013-14**

The statement given in *Annexure 6* was approved after minor corrections in nomenclature. Approval was also given for transfer of the amount of Rs 2 lakhs donated by the Workshop on FATIGUE, FRACTURE AND LIFE EXTENSION (FFLE-2014) to the corpus of TRAERF.

**Item 9: Budget Estimate for 2014-15**

The Budget Estimate for 2013-14 given in *Annexure 7* was approved.

**Item 10: TRAERF website enhancement**

Space in the TRA-ERF website will be set aside for dedicated on-line advertisements from reputed metallurgical and materials institutions / industrial units. A maximum of six such advertisements will be accommodated in the current year 2013-2014. A sum of Rs. 1 lakh per year was suggested as possible tariff to be sought from the advertisers. The first advertisement will be set aside for Sir Dorabji TATA Trust free of tariff.

**Action Point 1:** *Help in securing advertisements from reputed organizations.* **(Action: Dr. Sundararajan, Prof. Bhanu Sankara Rao and Dr. Partha Ghosal)**

**Action Point 2:** *Update the webpage with necessary changes and also by including the new windows and files* **(Action: Dr. Eswara Prasad** with advice and help from Dr. Kutumbarao)

A maximum amount of Rs. 15,000/- was approved for the website maintenance, updating as well as for changes in its design.

**Item 11: Suggestions for attracting donations**

Members were requested to help in securing an additional sum of at least Rs.10 lakhs from individual donors during the year 2014-2015. Members felt that fund generation by way of organizing seminars / workshops is very appropriate. The following events were identified for the year 2014-15:

- A 5-day School on METALLURGY FOR NON-METALLURGISTS during September, 2014 at MGIT. Professor Rama Rao suggested giving the ASM publication of the same name as the theme of the School to all the participants. **(Action: Prof. Bhanu Sankara Rao, Dr. Srikant Joshi and Prof. Viplav Kumar).**
- A Short Term Course (5 to 7 days) on FRACTURE MECHANICS IN AEROSPACE DESIGN during November – December, 2014 by Dr. Samir V Kamat and Dr. M Srinivas

of DMRL, Hyderabad and Dr. N Eswara Prasad of RCMA (Mat.), CEMILAC, Hyderabad with participation of engineers from HAL, IAF and DRDO/DAE.

- 3-Day Workshop and/or National Seminar on an appropriate topic at IISc., Bangalore. Dr. Eswara Prasad will talk to Dr. T Abinandanan to finalise the details. (**Action: Dr. Abinandan** with help from Dr. Eswara Prasad)

Prof. J Viplava Kumar offered to try to obtain donations from BHU Metallurgy Alumni. The President thanked Prof Viplava Kumar for his offer and promised to write personal appeal letters to the identified donors. (Action: Prof Rama Rao and Prof Viplava Kumar)

***Item 12: Further activities of the trust***

Professor S Ranganathan's suggestion of instituting TRAERF Best Teacher Award is unanimously approved. The TRAERF will finalise the modalities once Professor Ranganathan arranges necessary fund to take care of the finances required for this initiative. (**Action: Prof. Ranganathan**)

***Item 13: Any other item***

It was unanimously agreed to appoint M/s Jyothirmayi and Associates as the auditor for the year 2012-13 and for 2013-14 for all the Trust activities. Necessary charges for maintaining and auditing the Trust accounts will be made by the Treasurer.

The meeting concluded with the President of TRAERF thanking all the members and authors for their active and constructive participation and Director, ARCI for hosting the meeting.

These minutes issue with the concurrence of Professor P Rama Rao, President, TRAERF.

Sd. VV Kutumbarao  
*Secretary*  
*TRA Education & Research Foundation*

**TR ANANTHARAMAN EDUCATION AND RESEARCH FOUNDATION**

**List of Donors (Till March, 2014)**

<i>Sl.No.</i>	<i>Name of the Donor</i>
1.	Professor P. Rama Rao, ARCI, Hyderabad
2.	Professor S. Ranganathan, IISc & NIAS, Bangalore
3.	Professor Kamanio Chattopadhyay, IISc, Bangalore
4.	Professor VV Kutumbarao, DMRL, Hyderabad
5.	Dr. G. Malakondaiah, DMRL, Hyderabad
6.	Dr. K Bhanu Sankara Rao, UOH, Hyderabad
7.	Dr. R. Gopalan, ARCI, Chennai
8.	Shri A. Kailasam, Formerly DMRL, Hyderabad
9.	Dr. V. Chandrasekharan, ARCI, Hyderabad
10.	Dr. Partha Ghosal, DMRL, Hyderabad
11.	India Science Lab, GM Global R&D, GMTCI, Bangalore
12.	Technical Association, Department of Metallurgical and Materials Engineering, MGIT, Hyderabad
13.	Professor C. Suryanarayana, University of Central Florida, Orlando, USA
14.	Professor Shrikant Lele, IT, BHU, Varanasi
15.	Professor B.S. Murty, IIT Madras, Chennai
16.	Dr. P.P. Sinha, VSSC, Trivandrum
17.	Professor VS Raja, IIT Bombay, Mumbai
18.	Professor N.K. Mukhopadhyay, IT, BHU, Varanasi
19.	Dr. Alok Singh, NIMS, Japan
20.	Organizers, International Winter School on Advances in Aeronautical Materials and Technologies (AAMT 2010), Hyderabad
21.	TATA Steel Limited, Jamshedpur
22.	Professor P. Rama Rao, ARCI, Hyderabad
23.	Dr. Baldev Raj, IGCAR, Kalpakkam
24.	Professor GVS Sastry, IT, BHU, Varanasi
25.	Professor VS Raja, IIT Bombay, Mumbai
26.	Dr. S. Ranganath, Chula Vista, CA, U.S.A
27.	Dr. Pradip, Chief Scientist & Head, PEIL, TRDDC, Pune
28.	Dr. G. Malakondaiah, Director, DMRL, Hyderabad
29.	Dr. PVS Lakshminarayana, MGIT, Hyderabad
30.	M/s. Godrej & Boyce, Mumbai
31.	Mazagon Dock Limited, Mumbai
32.	GAIL Training Institute, Mumbai
33.	Mahindra & Mahindra, Mumbai



34. Vasu Chemicals, Mumbai
35. Dr. L.K. Singhal, Jindal Stainless Ltd., Hisar, Haryana
36. Dr. K.M. Chowdary, Guntur
37. Professor J. Viplava Kumar, MGIT, Hyderabad
38. Dr. P.M. Vijayan, Rice University, Houston, TX, USA
39. Dr. K.G. Satyanarayana, Bangalore
40. Five-day School on Surface Engineering Technologies: Research and Applications (SETRA), organized by TRAERF in association with ARCI, Hyderabad
41. Two-day national conference on “Evaluation and Prevention of Corrosion and Failures (EPCF 2012)” organized by TRAERF and SEST of University of Hyderabad in association with ARCI, IIM Hyderabad Chapter and SFA, Hyderabad.
42. Three-day national workshop on “Fatigue, Fracture and Life Extension (FFLE-2014)” organized by TRAERF and DMRL & RCMA (Materials), CEMILAC Hyderabad in association with ARCI, IIM Hyderabad Chapter and SFA, Hyderabad.

**TR ANANTHARAMAN EDUCATION AND RESEARCH FOUNDATION**

**Balance Sheet (As on 31.03.2014)**

**T R ANANTHARAMAN EDUCATIONAL RESEARCH FOUNDATION  
RECEIPTS & PAYMENTS A/C FOR THE PERIOD ENDED 31.03.2014**

<b>Receipts</b>	<b>Amount (Rs.)</b>	<b>Payments</b>	<b>Amount (Rs.)</b>
<b>Opening Balance</b>			
Cash in Hand	0	FDs with SBI	200000
Cash at Bank	207862	Merit Prize	90000
<b>Donations received</b>		Audit Fee paid	5000
for corpus fund	15000	Faculty fellowship Expenses	850330
Others	774001	Website Expenses	5000
Bank Interest	41714	FFLE Workshop Expenses	319956
Workshop Registration fees	514200	Travel Expenses	4681
Workshop Sponsorship fees	135000	Professional Fee	5000
		<b>Closing Balance</b>	
		Cash in Hand	0
		Cash at Bank	207810
	<b>1687777</b>		<b>1687777</b>

Place: Hyderabad

Date: 16.05.2014

**For Jyothirmayi & Associates**

Chartered Accountants

**For TR Anantharaman Education and Research Foundation**

G.Jyothirmayi

Proprietor

M.No.206949

FRN 012063S

(President)

(Secretary)

**T R ANANTHARAMAN EDUCATIONAL RESEARCH FOUNDATION  
INCOME & EXPENDITURE A/C FOR THE YEAR ENDED 31.03.2014**

<b>Expenditure</b>	<b>Amount (Rs.)</b>	<b>Income</b>	<b>Amount (Rs.)</b>
Merit Prize	90000	Donations	774001
Audit fee paid	5000	Bank Interest	41714
Professional fee paid	5000	Interest accrued on FDs	280451
Website Expenses	5000	Workshop Registration fees	514200
FFLE Workshop Expenses	319956	Workshop Sponsorship fees	135000
Travel expenses	4681		
Faculty fellowship Expenses	850330		
Excess of income over expenditure	465399		
	<b>1745366</b>		<b>1745366</b>

Place: Hyderabad

Date: 16.05.2014

**For Jyothirmayi & Associates**  
Chartered Accountants

**For TR Anantharaman Education and Research Foundation**

G.Jyothirmayi  
Proprietor  
M.No.206949  
FRN 012063S

(President)

(Secretary)

**T R ANANTHARAMAN EDUCATIONAL RESEARCH FOUNDATION  
BALANCE SHEET AS ON 31.03.2014**

<b>LIABILITIES</b>		<b>Amount (Rs.)</b>	<b>ASSETS</b>	<b>Amount (Rs.)</b>
As per last Balance Sheet	637052		Cash at Bank	207810
Add: Excess of income over expenditure	465399		Cash in Hand	0
		1102451	Fixed Deposits with SBI	3130000
Corpus Fund		2901001	Interest accrued on FDs	675642
Professional fee payable		5000		
Audit fee Payable		5000		
		<b>4013452</b>		<b>4013452</b>

Place: Hyderabad

Date: 16.05.2014

**For Jyothirmayi & Associates**

Chartered Accountants

**For TR Anantharaman Education and Research  
Foundation**

G.Jyothirmayi

Proprietor

M.No.206949

FRN 012063S

(President)

(Secretary)

*Appendix - 7*

**TR ANANTHARAMAN EDUCATION AND RESEARCH FOUNDATION**

**Budget Estimate for 2014 - 2015**

**T R ANANTHARAMAN EDUCATIONAL RESEARCH FOUNDATION**

**PROVISIONAL RECEIPTS & PAYMENTS A/C FOR THE PERIOD ENDED 31.03.2015**

<b>Receipts</b>	<b>Amount (Rs.)</b>	<b>Payments</b>	<b>Amount (Rs.)</b>
<b>Opening Balance</b>			
Cash in Hand	0	Scholarships	100000
Cash at Bank	405811	Audit Fee paid	10000
<b>Donations received</b>		Faculty Fellowship expenses	995000
for corpus fund	25000	Website Expenses	5000
Others	900000	Workshop Expenses	350000
Bank Interest	45000	Travel Expenses	5000
Workshop Registration fees	500000	Professional Fee	5000
		FD with SBI	200000
		<b>Closing Balance</b>	
		Cash in Hand	0
		Cash at Bank	205811
	<b>1875811</b>		<b>1875811</b>