

TRAERF

# Annual Report 2013

*(April, 2012–March, 2013)*



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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# Third Annual Report 2012-13

(April, 2012 – March, 2013)

## 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 – 1]*

### 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 leading R&D institutions and industries.

Further, TRAERF aims to extend financial support to select teachers of Metallurgy/Materials Science belonging to non-top-tier institutions in India. This support is intended to enable them to spend one full semester at a leading international institution. While international travel expenses are defrayed by TRAERF, Sir Dorabji Tata Trust has agreed to meet living expenses of the selected candidates, while they are abroad, for a period of up to 4 months. During this period the teacher will be associated with a well known professor engaged in imparting instruction in subjects of interest to the teacher. Such selected teachers are called **“Sir Dorabji Tata Trust – TRAERF Faculty Fellows”**.

In addition to the above, training workshops are conducted every year.

### 3. A Brief Report on the Activities of TRAERF during 2012 - 2013

#### 3.1. Fellowships and Scholarships:

- (i) **Professor TR Anantharaman Merit Prize:** Mr. Karthik R Laddha, 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 was given to Mr. Laddha on the occasion of the Metallurgy Day 2013 of the Department.
- (ii) **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 Awardee	Affiliation	Mentor
1.	Km. Pranjali Sharma	IIT (BHU) Varanasi	Raja Ramanna Centre for Advanced Technology, Indore
2.	Mr. Sai Phaneendra Bachu	IIT (BHU) Varanasi	Defence Metallurgical Research Laboratory, Hyderabad
3.	Mr. Saurabh Pandey	IIT (BHU) Varanasi	National Metallurgical Laboratory, Jamshedpur
4.	Mr. Amit Maroo	NIT Warangal	Bhabha Atomic Research Centre, Mumbai
5.	Km. Soundarya Srinivasan	NIT Tiruchirapalli	National Aerospace Laboratory. Bengaluru
6.	Mr. Sandeep Awasthi	NIT Tiruchirapalli	Tata Steel, Jamshedpur
7.	Mr. N Vinod Kumar	Andhra University, Visakhapatnam	Indian Institute of Technology, Chennai
8.	Km. V Akhila Krishna	JNTU College of Engineering, Hyderabad	Defence Metallurgical Research Laboratory, Hyderabad
9.	Km. C Tina Mouni	MGIT, Hyderabad	International Advanced Res. Centre (ARCI), Hyderabad
10.	Km. Lakshmi Sravani	MGIT, Hyderabad (B.Tech. Part II)	Defence Metallurgical Research Laboratory, Hyderabad

Each of the above 10 students has been awarded a one-time grant of Rs. 12,000/ and Travelling Allowance at actuals subject to a maximum of Rs. 3000/.

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

(i) **5-day School on “Surface Engineering Technologies: Research and Applications (SETRA-2012)”**

This was conducted by the International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad during August 27-31, 2012. Several renowned scientists and technologists delivered the course contents to 60 enthusiastic participants comprising scientists, engineers, research scholars and teaching faculty. The technical programme and logistics were ably provided by the team led by Dr. Srikanth V Joshi, Associate Director, ARCI, Hyderabad,

(ii) **Two-day National Conference on Evaluation And Prevention Of Corrosion And Failures (EPCF-2012)**

This was held at the School of Engineering Sciences and Technology, University of Hyderabad, Hyderabad on November 29th & 30th, 2012. It was jointly organized by SEST faculty and Members of RCMA (Materials), Hyderabad. The technical programme and logistics were ably provided by the team led by Dr. K Bhanu Sankara Rao of SEST, UoH, Hyderabad.

(iii) **Lectures delivered**

- A 2-Part Lecture Series on *Experimental Evaluation Of Elastic Modulus* by Dr. P Rama Rao and Dr. V Chandrasekharan at DMRL, Hyderabad.
- Lectures delivered by Profesor Ramapada Manna of Indian Institute of Technology (Banaras Hindu University):
  - “*Bulk Ultra High Strength Metals by Severe Plastic Deformation*” at DMRL, Hyderabad on 26.12.2012
  - “*Bulk Nanostructured Superbainite for Armour Applications*” at DMRL, Hyderabad on 27.12.2012
  - “*Mitigation of Residual Stress in Submarine Hulls & Demonstration of Rich Website of Prof. Bhadeshia*” at DMRL, Hyderabad on 27.12.2012
  - Two lectures based on the research exposure that Professor Manna has got while at Cambridge, UK (facilitated by TRA-ERF) at JNTU, Hyderabad on 28.12.2012.

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

6<sup>th</sup> and 7<sup>th</sup> Meetings of the Board of Trustees of the TRAERF to review and plan various activities of TRAERF were held at Director’s Conference Halls at DMRL and ARCI, respectively on August 2, 2012 and March 15, 2013. The minutes of these meetings can be found at Appendices 2 & 3.

### ***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 – 4. Since many others, students and admirers of Professor TR Anantharaman, staying outside India have expressed their wish to contribute funds to the Trust, it has been decided to start the process of obtaining Government of India permission for receiving donations from NRIs. The Treasurer has ensured the completion of the task of opening a separate bank account for NRI donations.

The financial transactions and the management of bank account are monitored by M/s Jyothirmayi Associates, auditors for the Foundation. Their audit report is given in a separate document, appended to this report (please see Appendix – 5).

### ***3.5. Official Website of TRAERF:***

The official website ([www.traerf.org](http://www.traerf.org)) of TRA-ERF is constantly updated 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.

### ***3.6. Proposals for 2013-2014:***

- (i) In a major initiative, two outstanding young faculty members of Metallurgy and Materials Science background will be selected for the **SIR DORABJI TATA – TRAERF FACULTY FELLOWSHIP**, under which programme the two selected faculty members will undergo extensive academic exposure and training in a select advanced subject / course / specialization at a renowned school of Metallurgy or Materials Science in advanced countries. The TRAERF board trustees in consultation with Sir Dorabji Tata Trust have recently finalised the modalities of selection and award of this prestigious fellowship. The first batch of two faculty members will be commencing their sabbatical on this fellowship programme in the year 2013-2014.
- (ii) Top ranking students 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.
- (iii) 10-20 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 2013-14:

- A 5-day workshop/school on **METALLURGY FOR NON-METALLURGISTS** will be organized at ARCI, Hyderabad. This will be the first of a series called the “TR Anantharaman Continuing Education Workshops”.
- A National Seminar on **FATIGUE AND FRACTURE MECHANICS** will be held during 2014 at DMRL, Hyderabad.
- **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. Rampada Manna of IT-BHU will be organized at the Metallurgical Engineering Departments of various NITs of India.



## **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 and Jawaharlal Nehru Centre for Advanced Scientific Research. 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.  
([pallerama\\_rao@yahoo.co.in](mailto:pallerama_rao@yahoo.co.in))
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))

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

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**Minutes of the 6<sup>th</sup> meeting of the Board of Trustees held on August 2, 2012 at Director's  
Conference Hall, DMRL, Kanchanbagh, Hyderabad**

The following were present:

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

Leave of absence was granted to Dr 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 ) dedicated contributions to the TRAERF.

The Agenda items were then taken up for discussion.

***Item 1: Approving the minutes of the 5th meeting held on March 10, 2012.***

The minutes of the fifth 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: Donations received and activities planned***

The donations received till date are listed in *Annexure 1*. The action points are:

1. It was decided that the web page containing the list of donors needs to be updated.
2. Following National Seminars / Workshops are planned during 2012-13:
  - **Workshop on Corrosion:** This workshop will be held at the University of Hyderabad during November, 2012 on the lines of the one held at IIT Bombay by Professor V S Raja of IIT-B. Prof K. Bhanu Sankara Rao, UOHYD, has kindly consented to be the Coordinator for the workshop. Further details of the workshop

will be worked out together by Professors Raja and Bhanu Sankara Rao. The recommended registration fee for the two-day event is Rs 8,000/.

- **Continuing Education Scheme on Surface Engineering:** A 5-day workshop will be organized on Surface Engineering at ARCI, Hyderabad during 27-31, August 2012 by Dr. Shrikant V Joshi. The workshop will be called as “TRA Continuing Education Scheme Workshop”.
- **Workshop on Fatigue and Fracture Evaluation:** A two-day National Workshop on Fatigue and Fracture Evaluation of Engineering Materials will be conducted at DMRL. Dr Vikas Kumar of DMRL will be the Co-ordinator. The modalities of the workshop and the schedule of the same will be finalized by Dr. Vikas Kumar in consultation with Dr. G Malakondaiah.
- Based on the experience of the IIT-Bombay workshop on Corrosion, it was recommended that the Coordinator/Convener may open a workshop/seminar account in a nationalized bank for all the transactions of that particular workshop/seminar and any savings will be transferred to the TRAERF account as donation. ARCI have already done that and other coordinators are also requested to follow that same.
- A lecture series by Dr. Ramapada Manna of BHU, who went to the UK for training using the funds provided by TRAERF, has to be arranged at Department of Metallurgical Engineering, JNTU, Hyderabad. Dr. Markandeya, Head of the Department has t b formally requested to make the necessary arrangements as also to raise the required funds from JNTU and other sources as far as possible. Dr. Malakondaiah has been requested to write the formal letter inviting Dr. Markandeya to take up the organization of this event.

### **Item 3: Preparing the application for accepting DONATIONS in foreign currency**

The Board of trustees was informed that it was necessary to obtain a certificate of registration from the Ministry of Home Affairs, Government of India for obtaining certificate of registration under Foreign Contribution (Regulation) Act, 2010 FRCA), before receiving any foreign contributions by the Trust.

The rules and documentation requirement along with the draft resolution prepared for filling up the forms for permissions required to be obtained in order to accept donations in foreign currency to TRAERF from friends and well-wishers residing abroad are discussed. The resolution reads as follows:

“RESOLVED THAT the necessary application be made to the Ministry of Home Affairs, Government of India.”

“RESOLVED FURTHER THAT Dr Palle Rama Rao, President of the Trust and Dr G Malakondaiah, Member of the Trust be and are hereby severally authorized to sign and submit the application to Ministry of Home Affairs, Government of India for obtaining necessary Certificate of Registration under the Foreign Contribution (Regulation ) Act, 2010 and to do any other things in connection for and on behalf of the Trust.”

“RESOLVED FURHTER THAT Dr Palle Rama Rao, President of the Trust and Dr G Malakondaiah Member of the Trust be and hereby severally authorized to sign all other

papers in this connection as authorized/required by the Ministry of Home Affairs, Government of India, for and on behalf of the Trust.

***Item 4: Opening a separate bank account in SBI for the purpose (3 above) and its approval by members***

The Board of Trustees was informed that it was necessary to open an exclusive bank account to receive foreign contributions; particulars of which have to be stated in the application to the Ministry of Home Affairs.

The members supported and agreed to the proposal and the following resolution was passed:

**“RESOLVED THAT** a current account in the name of the trust be opened with SBI, Chandrayangutta Branch, Hyderabad, and that the said bank be and is hereby authorised to honour all Cheques, Bills of exchange, Negotiable Instruments, Promissory Notes and other orders of payment drawn, accepted or made on behalf of the trust by Dr Palle Rama Rao., President of the Trust and/or Dr G Malakondaiah Member of the Trust, to act on any instructions so given relating to the account whether the same be over drawn or not or relating to the transactions of the Trust.”

**“RESOLVED FURTHER THAT** a certified true copy of this resolution along with the specimen signatures of by Dr Palle Rama Rao., President of the Trust and Dr G Malakondaiah Member of the Trust and a copy of the declaration of the trust be delivered to the said bank.”

***Item 4: TRAERF body to be associated with a professional body with similar objectives: preliminary discussion***

President, TRAERF discussed with President, INAE for the possibility of having a MoU between the two bodies, which have many common objectives and platform. The members deliberated and it is decided to have a draft MoU be made by Dr G Sundararajan and Dr VV Kutumbarao before further discussions can be held to finalize the procedure and steps to be taken. Any other agency apart from INAE can be also be considered if any member happens to find one with similar objectives.

***Item 5: TRAERF Scholarships***

It is decided that TRAERF would invite the first rankers from all institutes and colleges who have Metallurgical and Materials Science branches all over the country except IITs and IISc. We can support from 10 to 25 candidates (mostly toppers) for their summer internship. Professor VV Kutumbarao, Dr G Malakondaiah and Professor BhanuShankar Rao would pursue the matter and submit the recommended list of students by December, 2012 for further action. Professor Bhanu Sankara Rao would write to the colleges.

Reports from the students supported by TRAERF for the summer internships for the year 2011-2012 are to be collected and the same are to be included in the Annual Report-2012 of the TRAERF.

### ***Item 6: TRAERF website***

Members have seen the live website of the TRA-ERF during the meeting and were appreciative of the efforts of Dr. N. Eswara Prasad and his team in creating an impressive TRAERF website. A few suggestions were made for enhancing the content of the website and for further enrichment of its information. The following are the action points:

1. Teaching material on “Dislocation Theory and Applications”, is to be obtained from Professor VV Kutumbarao and included in the website downloads.
2. Update the biodata information of the Trustees of TRAERF that is on display of the website.
3. Incorporate captions for the photographs displayed in the Gallery webpage.
4. The webpage on Contact Us should include the new Email Id: [traerf@gmail.com](mailto:traerf@gmail.com) .
5. Include UPDATES as scroll items.

### ***Item 6: Annual Report 2011-12***

Members present appreciated the format and content of the previous annual Report and the same was then suggested for the year 2012 . Dr N Eswara Prasad will get all the data and inputs from others and compile the same.

### ***Item 7: Suggestions for Fund raising***

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.

Members were requested to help in securing an additional sum of at least Rs.15 lakh from individual donors during the year 2012-2013. Dr. Rama Rao will strive to secure larger sums as donations from Sir Dorabji TATA Trust (SDTT). Initial discussion and formal letter addressed to Shri Muthuraman, Member SDTT, is circulated to all members. The matter will be pursued further.

### ***Item 8: Any other point***

All members, unanimously agreed to appoint M/s Jyothirmayi and Associates as the auditor for the year 2012-13 for all the Trust activities.

The meeting concluded with the President of TRAERF thanking all the members for their active and constructive participation and Director, DMRL for being the host of this meeting.

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 7<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, 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. Dr. Partha Ghosal         | - | Author and Invitee            |
| 7. Smt. G. Jyothirmayi       | - | Chartered Accountant, Invitee |
| 8. 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, 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 ) dedicated contributions to the TRAERF.

The Agenda items were then taken up for discussion.

***Item 1: Approving the minutes of the 6th meeting held on August 02, 2012.***

The minutes of the sixth 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***

The details of the donations received for the period of April 01, 2012 – February 28, 2013 are brought to the notice of the participants and the same are listed in *Annexure 1*. The lists and status on the fixed deposits in the SBI branches of Ramanthapur and Chandrayangutta are also brought to the notice of members present. The details are given in Annexure 1.

***Item 3: Preparing the application for accepting DONATIONS in foreign currency***

The Board of trustees was informed that it was necessary to obtain a certificate of registration from the Ministry of Home Affairs, Government of India for obtaining certificate of registration under Foreign Contribution (Regulation) Act, 2010 FRCA), before receiving any foreign contributions by the Trust. Dr. Eswara Prasad will do the needful to obtain the CERTIFICATION OF REGISTRATION.

Ms. Jyothirmayi will do pursue all the further required paper work to submit the application to Min. Home Affairs. Ms. Jyothirmayi is also advised to refer and use the contents of last minutes of the meeting, if require to complete the formalities.

#### **Item 4: Workshops Held during 2012-2013**

President, TRAERF and the members noted with thanks the efforts made by Dr. Srikanth V Joshi and Professor K Bhanu Sankara Rao for the successful conduct of the two seminars / workshops on behalf of TRA-ERF:

- (a) 5-day School of SURFACE ENGINEERING TECHNOLOGIES: RESEARCH AND APPLICATIONS at ARCI , Hyderabad and
- (b) 2-day National Conference on EVALUATION AND PREVENTION OF CORROSION AND FAILURES, at SEST, UoH, Hyderabad.

The members have also appreciated the quality of the technical programmes of these two events and expressed their desire that such workshops / seminars should be conducted on a regular basis for the benefit of students and faculty of Metallurgy and Materials Sciences.

#### **Item 5: Lectures Delivered:**

- (a) On Elastic Modulus on December 10, 2012
- (b) Magnetic Materials to be delivered in July, 2013

#### **Item 6: Selection of Summer Internees and TRA Prize at BHUMET**

- (a) Mr. Kartik R Laddha, 1<sup>st</sup> Ranker of II-Year BTech of IIT-BHU will be awarded in the Metallurgy Department's Annual Day Celebrations with the TRA PRIZE of Rs. 10,000.00 and a CERTIFICATE OF COMMENDATION. Professor GVS Sastry will do the needful on advice from Dr. P Rama Rao.
- (b) Annexure 2 will the summary of the applications received for the award of TRA-ERF Summer Internship and the merits of each of the applicant were discussed and following students have been selected for the award. The efforts of Professor K Bhanu Sankara Rao and Dr. N Eswara Prasad for this initiative are appreciated and Dr. Eswara Prasad is asked to act as the CONVENER for this activity and do the further needful.

1.	Pranjali Sharma	III Year BTech	IIT-BHU, Varanasi
2.	Saiphaneendra Bachu	III Year BTech	IIT-BHU, Varanasi
3.	Sarvesh Mundra	III Year BTech	IIT-BHU, Varanasi
4.	Amit Maroo	III Year BTech	NIT, Warangal
5.	Srinidhi M	III Year BTech	NIT, Warangal
6.	Soundarya Srinivasan	III Year BTech	NIT, Tiruchirapalli
7.	Sandeep Awasthi	III Year BTech	NIT, Tiruchirapalli
8.	Shrivani Gour	III Year BTech	NIT, Nagpur
9.	Arihant Jain	III Year BTech	NIT, Durgapur
10.	Vinod Kumar N	III Year BE	AU, Visakhapatnam
11.	Akhila Krishna V	III Year BTech	JNTU, Hyderabad
12.	Tina Mouni C	III Year BTech	MGIT, Hyderabad
13.	Lakshmi Sravani M	III Year BTech	MGIT, Hyderabad



Further, Dr. Prasad will identify and obtain the consent of possible mentors for the above students for the summer internship.

Each of the above 13 awardees will be informed of their selection and also, the following information:

1. The stipend for the summer internship will be Rs. 6,000.00 for each month for two months.
2. The stipend in the form of Demand Drafts on the name of the students will be released at the end of each month of the internship by the mentor.
3. Travel support will be awarded to the student on recommendation from the mentor for a maximum amount of Rs. 3,000.00.
4. The head of each of the above departments will announce the award to the internship and also, submit a Internship Summary Report after the completion of the project.

**Item 7: SOPs for Selection of Faculty to benefit from Sir Dorabji TATA Trust:**

Firstly, all the members have expressed their desire to place on record their deep appreciation to Dr. P Rama Rao for dedicated and earnest effort in obtaining the sanction of FUNDS from Sir Dorabji TATA Trust for the noble initiative of FACULTY FELLOWSHIP PROGRAMME. Detailed deliberations (both in person and by correspondence) have resulted in the following:

1. Name: Sir Dorabji TATA – TR Anantharaman Faculty Fellowship (SDT-TRA-FF)
2. Duration: One Semester and 4 months, whichever is earlier
3. Selection: By the committee comprising of President and Secretary of TRAERF and a Member, Nominated by Sir Dorabji TATA Trust, based on the Nominations made by HODs of reputed of Indian Schools of Metallurgy and Materials Science. Suitable advertisements will also be published in IIM's Metal News and Current Science. Professor Kutumbarao will do the needful and Dr. Eswara Prasad will help.
4. Fellowship: US \$ 3,000.00 pm, Fully Supported by Sir Dorabji TATA Trust
5. Travel: To and Fro Travel fair by Economy Class for the Fellow, Fully Supported by TRAERF
6. Visa Fee: For the Faculty Fellow Selected, Fully supported by TRAERF

Details of the Initiative for 2013-2014:

1. Professor Eduard Arzt of University of Saarland, Saarbrucken, Germany will be the approached to accept the honor of mentoring one outstanding Indian Faculty to host SDT-TRA-FF in the specific area of A COURSE ON ADVANCED FUNCTIONAL MATERIALS. Professor Rama Rao will write the request letter. Professor Kutumbarao and Dr. N Eswara Prasad will do the needful preliminary work.
2. Professor S Ranganathan, Trustee, TRA-ERF and Professor, IISc., Bangalore will be requested to accept the honour of mentoring one outstanding Indian Faculty to host SDT-TRA-FF in the specific area of A COURSE ON ELECTRON MICROSCOPY. Professor Rama Rao will write the request letter.

Dr. Rama Rao will also write to the following Internationally Acclaimed Teachers / Professor for mentoring the SDA-TRA-FFs for the years 2014-15 and later:

1. Professor Subhash Mahajan, USA

2. Professor Soma Sundaram, USA
3. Professor Rao Tummala, USA
4. Professor Hans. –J. Christ, Germany
5. Professor K Hono, Japan

Dr. Rama Rao will also write to Shri AN Singh of Sir Dorabji TATA Trust on these initiatives and also, request for the grant of funds as and when required.

#### ***Item 8: National Centre for Experimental Metallurgy and Materials Science***

The proposal (see Annexure – 3) of PSG Institutions was discussed in detail and the members present have approved the proposal. Professor Kutumbarao has suggested that the TRA-ERF should decide on the course(s) content and also, should be a proactive part of Selection of Faculty for the Centre. Dr. Bhanu Sankara Rao had suggested subsequent development of MGIT at Hyderabad as the second centre of this initiative, which will be considered in immediate future, once MGIT also sends a proposal.

Dr. Rama Rao will discuss the details of the first national centre at PSG Institutions, Coimbatore with Dr. Baldev Raj and finalise the details of the experiments (curriculum), faculty and funding for the facilities etc.

#### ***Item 9: TRAERF website***

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 catered for in this current year 2013-2014 and the first of the advertisement will be set aside for Sir Dorabji TATA Trust. Dr. Sundararajan, 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 advertisement is suggested and the suggestion is approved by the members present.

A payment of Rs. 12,0000/- will be made for the website maintenance and updating as well as for design changes that happen from time to time.

#### ***Item 10: TRAERF body to be associated with a professional body with similar objectives: preliminary discussion***

President, TRAERF discussed with President, INAE for the possibility of having a MoU between the two bodies, which have many common objectives and platform. The members deliberated and it is decided to have a draft MoU be made by Dr G Sundararajan and Dr VV Kutumbarao before further discussions can be held to finalize the procedure and steps to be taken. Any other agency apart from INAE can be also be considered if any member happens to find one with similar objectives.

#### ***Item 11: Suggestions for Fund raising***

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.

Members were requested to help in securing an additional sum of at least Rs.15 lakh from individual donors during the year 2013-2014. Members felt the fund generation by the way of conduct of seminars / workshops is very appropriate and urged the members to conduct as many as possible. Two seminars are identified for the current year:

- (a) 5-Day School on METALLURGY FOR NON-METALLURGISTS during July – September, 2013 by Professor K Bhanu Sankara Rao, Dr. Srikant V Joshi and Dr. N Eswara Prasad.
- (b) 3-Day Workshop-cum-National Seminar on FATIGUE AND FRACTURE MECHANICS during November – December, 2013 by Dr. Vikas Kumar, Dr. Samir V Kamat and Dr. M Srinivas of DMRL, Hyderabad.

Dr. Rama Rao has agreed to finalise the course contents for the above two technical events and would also suggest the faculty members, to be drawn from various national centres.

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

All members unanimously agreed to appoint M/s Jyothirmayi and Associates as the auditor for the year 2012-13 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 and Director, ARCI for being the host of this meeting.

These minutes are issued 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 31, 2013)**

<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.

**TR ANANTHARAMAN EDUCATION AND RESEARCH FOUNDATION**

**Balance Sheet (As on 31.03.2013)**

**T R ANANTHARAMAN EDUCATIONAL RESEARCH FOUNDATION  
RECEIPTS & PAYMENTS A/C FOR THE PERIOD ENDED 31.03.2013**

<b>Receipts</b>	<b>Amount (Rs.)</b>	<b>Payments</b>	<b>Amount (Rs.)</b>
<b>Opening Balance</b>			
Cash in Hand	2790	FDs with SBI	630000
Cash at Bank	35757	Scholarships	130000
<b>Donations received</b>		Audit Fee paid	5000
for corpus fund	645000	Kit Expenses	1290
Others	287000	Registration Expenses	2000
Bank Interest	36023	Event expenses	10000
		Travel expenses	20418
		<b>Closing Balance</b>	
		Cash in Hand	0
		Cash at Bank	207862
	<b>1006570</b>		<b>1006570</b>

Place: Hyderabad

Date: 18.07.2013

**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 31.03.2013**

<b>Expenditure</b>	<b>Amount (Rs.)</b>	<b>Income</b>	<b>Amount (Rs.)</b>
Scholarships	130000	Donations	287000
Audit fee paid	5000	Bank Interest	36023
Professional fee paid	5000	Interest accrued on FDs	217567
Kit Expenses	1290		
Registration Expenses	2000		
Event expenses	10000		
Travel expenses	20418		
Excess of income over expenditure	366882		
	<b>540590</b>		<b>540590</b>

Place: Hyderabad

Date: 18.07.2013

**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 31.03.2013**

<b>LIABILITIES</b>		<b>Amount (Rs.)</b>	<b>ASSETS</b>	<b>Amount (Rs.)</b>
As per last Balance Sheet	270170		Cash at Bank	207862
Add: Excess of income over expenditure	366882		Cash in Hand	0
		637052	Fixed Deposits with SBI	2930000
Corpus Fund		2886001	Interest accrued on FDs	395191
Professional fee payable		5000		
Audit fee Payable		5000		
		<b>3533053</b>		<b>3533053</b>

Place: Hyderabad  
Date: 18.07.2013

**For Jyothirmayi & Associates**  
Chartered Accountants

**For TR Anantharaman Education and Research Foundation**

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

(President)

(Secretary)



**TR ANANTHARAMAN EDUCATION AND RESEARCH FOUNDATION**

**Budget Estimates for 2013 - 2014**

**T R ANANTHARAMAN EDUCATIONAL RESEARCH FOUNDATION  
BUDGET OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31.03.2014**

<b>Particulars</b>	<b>Amount (Rs.)</b>	<b>Particulars</b>	<b>Amount (Rs.)</b>
Scholarships	100000	Donations	1000000
Experimental kits	10000	Interest received	200000
Printing & Stationery	500		
Miscellaneous expenses	500		
Bank Charges	500		
Conveyance	800		
Meeting expenses	1500		
Website maintenance charges	5000		
Events & Activities expenses	5000		
Fixed Deposits with SBI	1000000		
Professional fee	5000		
Audit Fees	5000		
Excess of income over expenditure carried to Balance Sheet	66200		
	<b>1200000</b>		<b>1200000</b>