



The Scholar's Magazine

2014-15



Reflection  
Reflection

- 
- ❖ *Art*
  - ❖ *literature*
  - ❖ *Personalities*
  - ❖ *Memories*
  - ❖ *Enclave Chronicles*

Indira Gandhi Centre for Atomic Research

## Musings from the Editor's Desk

*You don't always need a plan. Sometimes you just need to breathe, trust, let go and see what happens. And this was the beginning of our voyage to the magazine. We feel much appraised in upbrining the first ever Research Scholar's Enclave Magazine "Reflection".*



Every beautiful story should start with a beginning. The idea of this magazine was impregnated way-back in the Enfest' 14 by our group. We worked, some financially contributed, some offered their valuable time and few came up with interesting ideas. A beautiful canvas consumes plenty of time before the painter gives his final touch; same is true with the current magazine. The magazine in your hand will give you a glimpse of little beautiful poetry, paintings, photography, and little outstanding research done by our enclavians.

This magazine has a fundamental idea of bringing up those hidden talents in young researcher's which often goes unnoticed and finally dwell in the journey of life. The idea in this very first edition is not about bringing the perfection in their art, but to offer every researcher an opportunity and a platform where they get some time apart from research to revitalize themselves with these activities so as to work with full potential in their research. We strongly believe that a good poem, a good art and a good book had changed the life of millions in the past, many in the present and yet will do for generations next to come.

Many hands joined for the successful edition of this magazine. Many of them are well known in their chosen research field, but may be a novice in the field of poetries, story writing, drawings, paintings and photography. Nevertheless, we have a great group of unsung researchers who readily accepted the offer to spare some time from their busy schedule of research for designing different pages of the magazine with very less reward. They are: Veerendra, Balaji, Jagapati, Sithara, Alaka, Behera, Shiva, Siva, Sahoo, Poddar, Saikumaran, Jayanthi, Aditi, Suresh, Raghvendran, Anuj, P.Sahoo, Parida, Arpita, Nagendra, Teena, Biswa, Aneesha, Amit, Anil. U, Harimohan, Murali and Saritha. We believe that our coming batches will be the heir to our spirit and will endure our tradition. We thank Avinash for his valuable suggestion.

In the penultimate the editor would like to offer special thanks to Mr. K. Varathan who readily agreed to the less rewarding and time-consuming task of type set of various pages of the magazine. We are thankful to the Almighty, who foster this idea in our mind which today we see in this present form.

So, be ready to experience the thrill and joy of Reflection.

Go ahead with the issue and flood our mailboxes with your much-awaited feedback. "Create, Communicate, Contribute remains our mantra.

(Magazine Committee)



Aditya



Chandan



Rohith

# Reflection

REFLECTION

❖ <i>Note from AD, RMG</i>	2
❖ <i>Dean Message</i>	3
❖ <i>To the Alma Mater</i>	4
❖ <i>Enclave diaries</i>	6
❖ <i>Wings of Poesy</i>	10
❖ <i>Au Revoir</i>	16
❖ <i>Moments of Joy</i>	19
❖ <i>Publications</i>	21

## Note from AD, RMG



Dr. M. Sai Baba  
Associate Director, Resource Management Group  
IGCAR, Kalpakkam

*Dear Enclavians,*

I am happy that research scholars are continuing the tradition of welcoming the fresher's who have joined the Centre for pursuing their doctoral programs. Also, appropriately the occasion is being used for felicitating the seniors who have submitted or in the process of submitting their thesis. Students from all parts of the country join the Centre to pursue research and take up challenging research problems. All of you bring freshness to the Centre both in terms of ideas and enthusiasm. While academics are important, pursuing hobbies and things you like, is also equally important. I always believed that doing well in one field would have catalytic effect in other domains. In that context, the get together being organised is significant. Over the years I have seen the immense talent all of you have and aglimpse of the same was displayed in the functions like this. I am sure it would be no different this time. Personally I felt very satisfying to have got an opportunity to play a role in the domain of research scholars. A role assigned to me has a challenge in terms of satisfying the aspirations of young minds but still follow the rules and regulations set by the system. I have the satisfaction that I could play this role in a reasonably successful way and certainly to my satisfaction.

I take this opportunity to wish success to all those seniors who are on the verge of taking up challenging assignments as a stepping stone to bright careers. Wish the newly joined enclavians a comfortable stay at the enclave and successful tenure as a scholar at the Centre. It is my pleasure to reiterate all the support from me and my colleagues.

Wish you all good luck for success in your careers and for successful conduct of the get together.

*M. Sai Baba*

## Dean Message



Dr. G. Sasikala,  
Dean Academics - Engineering Sciences  
Homi Bhabha National Institute, Kalpakkam

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I am quite pleased to learn that the research scholars of HBNI at Kalpakkam are bringing out a House Magazine. This medium, I am sure, will serve in letting the outside world to know about the literary talents of our research scholars and nurturing their hidden skills and strengths.

HBNI activities at IGCAR is reaching a milestone, entering its tenth year and this, definitely, is the most opportune time to launch such an activity. The strength of an Institution like HBNI cannot be measured based only on the usual statistics of the routine qualifiers such as the quality and quantity of the Degrees, research papers, or patents or the achievements of the alumni in their profession. Of course, these are clear indicators of the professional competence of the Institute. But the creations of the students, while at the Institute, speak volumes not only about their creators, but also of the Institute in terms of the ambience it provides for such creativity. I expect the contributions to this magazine to be of very high standard and quality. I hope this provides a forum to exhibit the potential and fulfill the need for self expression not only to the research scholars, but the faculty too.

I am extremely happy that our young researchers are finding time to pursue their talents in various arenas; literary skills, innovative ideas, sense of humor etc. The magazine is an illustration of their imagination, social responsibility and commitment, and I wish these be not lost in the journey forward. Let these young minds be able to uphold the values in life and thus the esteem of HBNI and their own.

My hearty congratulations to the team behind this initiative and look forward to future editions of this. I wish this venture all the success.

*G. Sasikala*

## Message to Fresher's

I am missing the memorable moments you are spending tonight. I envy you all, knowing how joyful it would be, after all, I stayed here for six years attending all parties without fail. From bottom of my heart, I wish all new scholars' happy and productive days ahead. Welcome to research scholars community of Kalpakkam.



Friends, in days and year to roll from here, in Kalpakkam or any other place you live, you would see all kind of people with different opinions such as good, bad, ugly about other people, groups, institutes, etc. etc. But, my dear friends, you are young scientists, you just started your career, so, never get carried away by what you hear. For example, as Gottfried Schatz said, when a newspaper carries news mentioning Cadmium content increase in your city water, you don't fly in panic like an ordinary person, but, questions "what is its absolute level...?, and what are the toxicity limits...?" You question and find the details. It should be of the same scientific temperament you should carry in dealing with others' opinions.

Friends, having met numerous research students, for that matter even scientists, in different institutes across the country, today I can guarantee you that it is very very rare you hear all praise about their own institutions. Today we are trained to look UP, and only UP, and aim it as a reference. So, we keep expecting. Perhaps, that is how it should be. But, it should not disappoint us showing us at low. Friends, you question in detail and find, whether what you wanted is what you are getting...? Do the same for other institutes before you make up your mind. Mountains at a distance look greenish, after all, it is made up of similar stones as we are looking from. I don't say, you sacrifice your dreams, if you really don't like what you are doing. Let me quote from the then Director, IGCAR, Padma Shri Baldev Raj, who told this during a similar party on Nov. 24th 2010,

"If one person doesn't full fill your ambitions, please go to another person, please go to another person. Please leave this place if your ambitions are not full filled. Your time is very precious. My time is not that precious today, your time is so precious. This 4-5 years whatever you do can make you Einstein or you can become a very dull scientist or a very dull person. It may turn you to a great entrepreneur depending on whatever you discover here. I think, don't sacrifice your dreams. Please, nobody should come in the way of your dreams. Don't allow anybody to come in the way of your dreams. If someone comes in the way of your dreams, he is not your friend."

What I mean to say is, when you need a change, the reason for leaving your current status, in any part of your life, should not be that you don't like that already exist with you, but, you like that what you would try to get it. The reason should be that you like something much more and hence, you leave the existing one. So, don't run away from what you don't like, but, chase what you like.

Friends, I wish you all again, a very best and great time ahead in Kalpakkam. You can mail me for any help that I can do for you. I would be delighted to hear from you.

The truth is that problems and setbacks happen more frequently than we would like. You can be in any place. New challenges arise and new objectives. Face the challenges. Reach the objectives. One cannot always do only what one likes, but to those who like what they do and are proud of always doing better, make more progress day by day.

Wish you all the Best. Thank you.

- Hari Babu Sata (Alumnus)

# My Experience



Kodaikanal trip



With Prof. Guruswami Ravichandran, whom I admire more for his benchmark studies in the area of thermomechanics using infrared radiometry, during SEM 2014 in Greenville, U.S.A



Munnar trip



With Prof. Xavier Maldague, second from the right, a pioneer in infrared thermography, whose book is often considered as bible in the area of thermal NDT, during 14th APCNDT in Mumbai



With Prof. Michael Sutton, one of the pioneers to develop Digital Image Correlation methodology what we have today, during SEM 2014 in Greenville, U.S.A

I am glad to experience my doctoral research at Indira Gandhi Centre for Atomic Research, an institute with international recognition in the area of Materials Science & Metallurgical Engineering. During my tenure, although there were some issues with respect to academic procedures for students, the centre always maintained excellent momentum in research activities thereby motivating its students. I carried out my thesis work in Quality Assurance Division focusing on Nondestructive characterization of inhomogeneous deformations in steels. There were many crests and troughs in the progress of the work. In fact, the incubation period pertaining to setting up the basic facilities to initiate the work lasted up to third year. However, I was so determined to attempt the best from my side, as I always believed, "Giving Up is the Biggest Weakness of a Researcher". I was not spoon fed and was allowed to frame & experiment my own ideas independently by my thesis advisor, Dr. Venkatraman. This practice has laid confidence in me to initiate any work from its scratch, as I do now. During tough times/setbacks in the work, I always cherished the nice company of my friends, although limited, who shared not only the pain but also some coffee/tea in our branded shops at the centre. When work progresses very well or does not progress, I always gathered friends sailing on the same boat for a trip. Such tours/trips were not just enjoyable moments but refreshed our minds to hit our research problems back with full driving force. During the first three years, I made myself technically prepared and identified the appropriate gap areas to attack, which made me publish my works immediately & successively when facilities were made available to me. Being on the safer side and fulfilling the essential requirements to graduate, I faced my final year with full confidence focusing on winding up the pending manuscripts & thesis writing. I must thank my doctoral committee chaired by Dr. A.K. Bhaduri for the inputs in shaping the work and ensuring timely completion of academic procedures.

Finally, I thank Indira Gandhi Centre for Atomic Research / Homi Bhabha National Institute for providing me a platform to prepare as a professional researcher towards achieving my short & long term goals. I wish to see more number of doctoral students graduating from IGCAR under the stamp of HBNI with flying colors and promote its standard & reputation internationally.

-N. Srinivasan (Alumnus)

# PhD Life is not dogmatic

It was September 1, 2010, me and my batch registered for PhD and started attending course work which was the part of PhD. First year (2010-Sep 2011) went well with lot of enjoyment, both at residence (Enclave) and lab. We enjoyed the birthday parties, festivals, tours, scientific discussions on projects and problems, team work on home assignments. So far, so fine. I think it's a characteristic of every doctoral student and his/her batch. But, there the journey took different path, never imagined. May be, that's also a constituent of the same characteristics.



Every one of our batch started their PhD projects. Every buddy was busy in understanding their respective fields. We tried to find the facilities for starting the "Re-search". The one, who had a senior in lab, was lucky to feel the experience. Everybody thought research is something unique to their own fields. So, no scientific discussions with in our batch. No information on facilities, funds, formalities, forums to discuss. No idea how to proceed in PhD life. By time, frustration buildup, we had no celebrations, no tours. Sometime we see each other once in a while may be days and even weeks, both at home and lab. 6 months passed like 6 minutes. Slowly, the gap among the batch mates enhanced. One day I had a discussion with my seniors about the situation. They explained me the philosophy of PhD life and concluded the situation as same characteristics, what I was talking earlier. But, I was not convinced with that philosophy. Thought, let's try some experiment in that regard. I could convince one of my friends who had similar thoughts, for planning the experiment. Worked out together and came up with some plan. We thought to implement the experiment plan, first with in our batch. We could convince our friends too. Now we are a team. A team for an experiment to prove the assumed characteristic is just a 'dogma'. However, we believed not only science but also PhD life is not dogmatic. We thought to name the experiment. In what circumstances we had to do this experiment, from the same circumstances I could get a name for our experiment.

It's "HOMELAB-IIIE", started on 04-05-2012. A bridge between 'HOME' and 'LAB'. The term 'IIE' stands for, a lab of 'Information', 'Ideas', and 'Experience', for all and forever. The motto of our experiment is simple, "Know about your home (Home of PhD) completely, before you leave out". We performed the experiment in 3 phases on every Thursday of the week. The strategy of the experiment is structured below, have a look into it. We did this experiment for one year; Phase-I for 3 months (July 2012), Phase-II & III for 9 months (Apr, 2013).

After one year, May 2013, the results and report of the experiment were ready. We were mesmerized by the report. You know why so? The 3 phases of our experiment could prove that, one of the scenarios of PhD life was not actually a characteristic rather it's dogmatic. By the end of our experiment, we came to know about all the facilities within our labs, our friend's labs at the institute and even their friend's labs at other institutes (Result of Phase-I). We came to know our friends experience in their field of research and shared each other. We exchanged the ideas among the team, no matter whether it is worth or not. We shared the information which we know about conferences, funding agencies, official formalities, other institutes, soft skills, of course it's not just scientific but we did also for life of PhD (Phase-II). Phase-III was a mixture of fun and scientific zone. We shared our success and happiness among each other, whether it is an experiment in lab, publication, and an award in conference or a birthday. We practiced viva-voice, presentations, and of course invited talks by "Just Dr." and seniors. Fine!

What next? 'Product'. The product of our experiment "HOMELAB". But at this stage, we failed. We failed to extend the experiment beyond our team to bring out the product. I don't know why it's so. May be 'time'. The time may be the answer. Hope to see the product with time.

HOMELAB-IIIE -A lab of 'Information', Ideas, Experience		
Motto 'Know your home (Home of PhD) completely, before you leave out'		
Phase-I	Phase-II	Phase-III
<ul style="list-style-type: none"> <li>➤ Know about all the laboratories at the institute, including the facilities and research.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Share information about conferences, funding agencies, official formalities, other institutes, soft skills, and even for life of a PhD.</li> <li>➤ Share ideas and experience</li> </ul>	<ul style="list-style-type: none"> <li>➤ Share your success story of an experiment, publication, and an award.</li> <li>➤ Share your happiness like birthday.</li> <li>➤ Practice viva-voice, seminars, presentations and invited talks by experienced Dr.</li> </ul>

-Avinash Patsha

# Experiences at IGCAR

Sweet Memories: D:D



Every icon has its own meaning connected with my wonderful times spent in the JRF Enclave!!!!



“Music” icon for the songs we played in Enclave during celebrations, “the question mark icon” for the ‘?’ on our faces during some classes (course work - Leona and Me) , “TV” icon for the galatta in TV room in hostel (Cricket matches), “The bread, spoons, hot tea in cup, coffee mug”-all these related with the times in mess with my friends (Leo, Kalyan & Prasanna), “home” icon shows we were like a family , “Temple” icons for the pleasant visits to temples I had in and around Kalpakkam with my friends (Thanks to Kalyan and Prasanna) “Umbrella” is for our sweet walks in the rain n sun.., “Star n the moon” icons for the night talks, late night discussions and capturing the milky way @ JRF Enclave, “Computer” icon for the enjoyment we had in our enclave in the name of Saturday movies....”Mobile” icon for all the mob chats at nite everyday.. “Badminton” icon is for the refreshment we had in the badminton court,” Bus, Flight, Train, Car, Boat, Bike” icons for the thrilling trips I enjoyed with my friends by road, sea and sky (Best part of my days @ IGCAR) “ Crackers and Cake” icons for the jollity which we had in the name of BIRTHDAY parties and festivals at Enclave. “ Giant wheel and games” icons for the fun we had in Carnival, “Icecream” icon for the good time which we had in Icecap, fruit zee, Hot & Chill “ “Sun” icon for the scorching heat we experienced in Kalpakkam....etc. etc.....DONT MISS THE “FIRST” AND THE “LAST” ICON....every moment has been captured in these two icons.....SO SWEEET MEMORIES.... MISS U ALL Buddies!!!!

- Anbumozhi

“சாதலின்இன்னாததில்லைஇனிததூஉம்ஈதல்இயையாக்கடை” - Tirukkural

Nothing is more unpleasant than death: yet even that is pleasant where charity cannot be exercised



No more words to describe about this statistics...We, Research Scholars of IGCAR, want to contribute a small amount from our stipend and started donating to one such home “KAAKUM KARANGAL” located at Thiruvanniyur, Chennai. Totally, it has six homes housing 250 old aged citizens, 150 school going orphan children, and 10 infants. Every month, we collect our contribution and donate them. We are doing this for the past one year and contributed approximately Rs. 30,000/-. We are also donating other needy accessories for school going children and used cloths. Hope our small contribution helps them a lot and we continue the same in future.



- SumathiGokul

# Enclave. Enigma. Eclectic

The cradle where I dwell is the place where the ties are served and severed. From a hooligan hoodwinked to being humble the stay has been encouraging. The calm surroundings initially seemed weird with myriad of researchers coming from all walks of life. I grew with the adage “Unity in Diversity“, which has been proved and factually reinstated over and over again, I LOST COUNT. Sometimes it’s our taste in movies / television serials / cultural background / academics / lack of OPTIONS. Oh! And how did I forget the quality of mess food. Procrastinating with BADMINTON in the rain to having thoughts of being responsible (lately) things have changed, life has taken a turn with friends opting to find their knack elsewhere, the show goes on! Well the only thing we have in excess is hard work, crushes, enclave pets (consistently increasing functions). It’s safe to say the faces of researchers residing here have a story of their own and they remind me of every short yet fascinating conversations I chanced to have struck with them. This in a nutshell is the tell- tale for me and I sure it does strike a chord with many researchers living here, I have a “home“ here away from my “home“. What I do expect, doesn’t matter, IT gets better (I have learnt it here). What I except from others, wouldn’t serve any purpose! What I want to convey,



“Never doubt a group of few people can change the world, infact it’s the only thing that ever has – MARGARET MEAD“

Oh and I know I am guilty as charged of disturbing people with my taste of MUSIC!

- Ronit



- Balaji



-Teena

# Enclave Memories

We think of yesterday with pride,  
tomorrow with hope and live today peacefully.

Enclavians hoped for

5 years of happiness,  
60 months of fun,  
260 weeks of success,  
1825 days of good health,  
43800 hours of comfort,  
2629800 minutes of joy,  
And every moment of gladness.

But times are changing and we are  
changing with them.  
Somehow we tumble in

5 years of experiments,  
60 months of data analysis,  
260 weeks of discussions,  
1825 days of presentations,  
43800 hours of conferences,  
2629800 minutes of meetings,  
And every moment of pressure.

This world is with people, who  
Smile in your presence,  
Abuse in your absence,  
Praise in your presence,  
Criticise in your absence,  
Share nothing and hide everything.

Nevertheless, the moment we think of giving up, we  
should think of the reason why we held so long.  
Of course, life is too precious to compromise.  
If we want to have which we have never had, we have  
to do something which we have never done.

We understand that waking up at 5 a.m. is difficult  
than studying till 5 a.m.  
We appreciate to have group discussions and mock-  
ups for our exams and presentations.  
We learn to organise the data to gain GBs of space in  
hard drive.

Enclave has gifted us with friends, who forgive,  
before we say sorry,  
Understand, when we forget,  
Wait, when we say a minute,  
And stay, when we say leave.

Enclave is deluge with juniors who sweeten our lives,  
brighten our joys and lighten our sorrows.  
Lives of our seniors remind us that we can make our  
lives sublime; and, while departing leave behind foot  
prints on the sand of time.

Closest relations in the world have fought more  
battles than enemies; so fight with close ones to  
become closer.

There are some words without vowels.  
Indeed, there are hardly few words without \* and #  
in our chats and e-mails.

Whatever may be the wrath!  
Either it is delivered in Cricket!  
Or smashed in Badminton!  
It bursts out in birthday bumps  
and blasts out in enclave festivals.  
Finally, it melts down in Saturday night shows.

No one can do everything, but everyone can do  
something.  
It feels good to stand on ground and watch up high  
at our aim: But it feels great when we stand up high  
and others watch us as their aim.

Hard work with positive attitude is achievement.  
It is in the end, the time for a real celebration and to  
enjoy the rewards of our hard work.

There are two ways of spreading light: to be the  
candle or the mirror that reflects it.  
Being a Scholar, today we might be a mirror, but we  
mould into a glowing candle in future.

- Compiled by Benadict Rakesh K

## Serenity

“Serenity!!!

Serenity is the thing we lose  
When we are unaware of the present  
When our thoughts swing from past to the future  
But never notice THE moment  
For in the heart of THIS moment  
Lies Serenity!! Lies Eternity!!

Serenity is the thing we destroy  
When we throw tantrums  
Though we know  
That the loss is all ours

Serenity gets hit badly  
When we get attached  
The root of all sadness  
Alas! We can't help it.  
We are mere mortals

Serenity won't prevail  
If we are not aware  
Of Impermanence  
The Ultimate truth, The Noble Truth.

Serenity shall prevail! It must.  
If we realize  
That this moment shall pass!!  
This!! “This” and “Now” are sources of Serenity  
No matter good or bad, it will pass.

Now!!  
'Now' is the only source, only refuge  
Through which you can Embrace Eternity.  
There is something over there.

I guess  
Something  
Beyond right and wrong  
Beyond Love and Hatred  
Beyond Reality and Illusion  
Of course, that 'Something' must be Serene.....”



(Radhikesh)

## காலம்

காலம்பொன்அல்ல  
திரும்பபெற !

காலம்அதுஉயிர்போல  
போனால்திரும்பவராது !

இறந்தகாலத்தைஎண்ணி  
நிகழ்காலத்தைவருத்தி  
எதிர்காலத்தைஇழந்து விடாதே !

காலம்உன்காலடியில்இருக்கட்டும்  
காலத்தைநீதுரத்தாதே  
காலம்உன்னைதுரத்தட்டும் !!!

-கோபிஇரகுபதி (Gopi)



# மீள்வருகை



நீர்க் குடத்தில் உதிர்த்த மானுடம்  
குருதி ஆற்றில் குளிப்பது  
கோடையின் கானலாய் நித்தமும் நிகழ்வது.....  
தேசிய உணர்வோடு தேகம் பற்றி எரிவது  
தெருவிற்குத் தெரு நடப்பது..  
அதிலும் அந்நியருக்கு எதிராக  
எனில் கட்டாயக் கடமைகளுள் ஒன்று  
தண் நீரும் கொதியமிலமாவது...  
பல அடுக்குகளாய் பகுக்கப்பட்ட சமூகத்தில்  
பற்றி எரியும் பிரச்சனைகள் ஏராளம்.....  
உள்முரண்பாடுகள் தாராளம் என்பதால்  
இங்கு தண்ணீரும் எரிதலே நிதர்சனம்  
ஆயினும் ஆண்டவனின் மனம்  
அத்தனை பண்படாதது அல்ல  
ஆயிரம் ஆண்டுகளுக்கு ஒரு முறை  
ரத்தச் சகதிகளைச் சுத்தம் செய்ய  
அன்பின் வடிவாய் அவனே நிகழ்கிறான்  
அதிலும் கிழக்கே அதிகம் திகழ்கிறான்....  
உலெகெங்கும் அரசியல் கொலைவாளால்  
உறுதிசெய்யப்பட இங்கு மட்டும்  
கொல்லாமையால் பண்படுத்தப்பட்டது  
அடக்குமுறையின் மொத்த வடிவையும்  
அங்கீகரித்த அரசினை தியானமும்  
அன்பும் ஆயுமின்றியே சீர்திருத்தின....  
அன்பின் ஆளுகை மேற்கில் அழிய  
அன்பிற்காய் தன்னைத் தந்த  
தனையனாலது மீட்டெடுக்கப்பட்டது....  
ஆயுத அரசியலில் அன்பின் அரிச்சுவடியை  
அகிலம் துறக்க எந்தை காந்தியே உம்மாலது

ஆயுதந்தரித்த அரசுகள்- நின்  
அன்பின் வலிமையில் அண்டு போயின  
உலைக்களத்தில் உருவான ஆயுதங்கள்  
உன் உண்மையின் முன் அமைதியாயின  
அழிப்பதையே ஆண்மையென எண்ணியோர்  
அஹிம்சையின் முன் அகம் நாணினர்  
பழம்பெரும் மதம் தன்னைப் புதுப்பித்து தன்  
பெருந்தவறுகளைத் திருத்திக் கொண்டது  
உலகப் பெரும் பேரரசு அரையாடையணிந்த  
உம்மிடம் மட்டுமே அச்சத்தொடு உரையாடியது...  
மானுடத்தின் மகத்துவம் மதிநுட்பமல்ல  
மனித நேயமே என மானுடமறித்தது....  
அறியப்படும் எதுவுமே எதையும் அழிப்பதற்கல்லவென  
அறிவியல் உம்மால் அறிந்தது.....  
ஏறத்தாழ பாதி உலகம் உம்மைக்  
கொண்டாடியது -மீதி உலகம் அதெற்கெனக்  
காத்திருந்து கனித்தது.....  
அறவியல் அறிவியலையும் பொருளியலையும்  
அரசியலையும் உம்மால் ஒருசேர ஆண்டது  
உலகப் பெரும்போரின் இடையேயும் உம்  
குரலுக்காக உலகம் தவித்திருந்தது  
வேறுபாடுகள் கொண்டாடப்பட்ட காலம்  
உம்மால் ஆனது - அவை  
பிரிவினைகளான போது உம்முயிர் போனது....  
நிகழ்கால உலகம் கந்தகக் காற்றில்  
நித்தமும் துயில்கிறது  
அமில மழையில் அமைதி கொள்கிறது  
சுரண்டலாலான சொர்க்கத்தைப் படைக்கிறது  
வெறுப்பினாலான விண்ணுலகைச் சமைக்கிறது  
இன்னொரு ஆயிரம் ஆண்டுகள்  
இப்படியே இருக்க எம்மால் இயலாது  
நின் வருகையன்றி வேறெதுவும்  
எம்மைக் காத்தருள முடியாது  
நிகழட்டும் நின் வருகை இந்த  
இருபத்தியோராம் நூற்றாண்டிலும்.....

--- மு. தங்கம்  
(முதுநிலை ஆராய்ச்சி மாணவர்,  
இயற்பியல்)

## == THAT WINTER MORNING..... ==

I go to bed early these winter nights,  
With the hope of an early morning sights.  
My early morning alarm makes me rise,  
I wear my tracks of XXL size.  
I have a habit of going for a morning walk,  
But this winter, it's altogether a new talk.  
After few minutes of brisk walk, I reached my nearest bus-stop,  
With a hope, "At least today my plan does not go flop".  
It was an early Monday morning,  
Flowers were wet as the dew was pouring.  
Today also, I was early to my destination,  
Hoping for a miracle, but truly it was a big tension.  
Ahhh, here she comes, the girl from a distance,  
I could figure her out without any assistance.  
Wearing a pink dress, she was looking like an angel,  
It was divine as she was looking so very beautiful.  
The air around also played its part by blowing hard,  
Making her wet hairs fly, leaving me mad.  
Normally she walks as if she is running,  
This is only because she fears of her college bus missing.  
But today I guess there is some other reason,  
As she is not hurrying rather feeling this wonderful season.  
Very soon the distance between us closed up,  
She came near me rather than the bus stop.  
My heart was beating as a high speed train,  
In few secs I shall collapse as all my energy had drained.  
As the distance between us decreased,  
The duration of my pulses increased.  
At last she stood in front of me with a smile,  
For which I would not hesitate to die for a while.  
With all my confidence I kept on looking at her eyes,  
She, with that smile, looked as she has just fallen from the skies.  
Counteracting with all my strength, I said "Listen miss....."  
Everything came to a standstill when she ended with a kiss.  
Suddenly a sound disturbed the whole atmosphere,  
It was the alarm ringing saying "Wake up ...Dear".  
I knew I was enjoying the sweetest moment in my dream,  
But hope this morning would break that loosing stream.



-Manas

# I hate you because I hate you

I hate you because I hate you,  
I hate you because there is no reason to hate you,  
I hate you because I hate you the first time I saw you,  
I hate you because I wonder why I hate you,  
I hate you because you're everything I ever wanted,  
I hate you because I don't know when you became so important to me,  
I hate you because I don't know anything about you but still I hate you.  
I hate you because you are so beautiful,  
I hate you because you are innocent,  
I hate you because you are simply you,  
I hate you because you make me believe in the impossible,  
I hate you because you're in every dream I had since I met you,  
I hate you because I miss you in every beats of my heart,  
I hate you because I smile for no reason,  
I hate you because when I see you the world stops in front of me,  
I hate you because when I see you my heart beats faster than anything,  
I hate you because when I see you there are no thoughts or worries,  
I hate you because when I see you smile I stop breathing,  
I hate you because of your silence,  
I hate you because the way you react when you see me,  
I hate you because you broke my heart,  
I hate you because I still hate you with all the broken pieces of my heart,  
I hate you because I feel sad when you walk away from me,  
I hate you because I know you hate me but I hate you more than you do,  
I hate you because I hate you...



-Nidhin



-gopi



-Veeru

## आज फिर से याद आयी है

जी चाहता है कि, फिर से फरिस्ता बन जाऊ,  
माँ से ऐसे लिपट जाऊ कि, बच्चा बन जाऊ ॥

बचपन कि वो छोटी-छोटी यादें, जाने कब खो गई किन् किताबों में,  
गावों के वो मेले, मेलेके वो झूले, वो जिलेबिया, वो इमरतिया, जाने अब खो गई किसी ज़माने में,  
वो माँ की ममता, पिता का लाड, अब बसा है बस मेरी यादों में,  
बचपन कि वो छोटी -छोटी यादें, जाने कब खो गई किन् किताबों में॥

वो मिटटी के घर, घरोंदे, वो कागज़ की कस्ती,  
वो दो आने की जिद्द, वो साहूकार की दूकान,  
वो रो कर जिद्द मनवाने की खुशी,  
बड़ी-बड़ी आँशुओं का माँ के पल्लू से सुखाना,  
पापा के डाट से डरकर माँ के पल्लु में जाकर छुप जाना॥

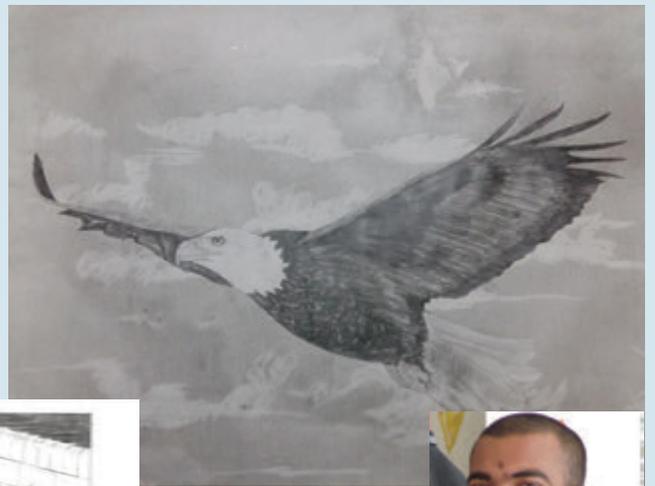
जी चाहता है कि, फिर से फरिस्ता बन जाऊ,  
माँ से ऐसे लिपट जाऊ कि, बच्चा बन जाऊ॥

जब जब बिजली कड़कती थी, तो मैं डर जाता था,  
जब भी कोई गलती हो जाए तो, पापा की डाट से मैं सहम जाता था,  
वो टीचर का कान पकड़ कर खींचने से मैं रो देता था,  
औए इन सबसे बचने के लिए, मैं माँ की गोद में जाकर छुप जाता था,  
और फिर से माँ का प्यार पाके, मैं खुशी से उछल जाता था ॥

अब सिर्फ यादें हैं और कुछ भी नहीं,  
पर माँ से एक शिकायत है मेरी कि,  
मुझे बड़ा क्यों होने दिया और,  
अगर अब बड़ा हुआ तो, अकेला क्यों होने दिया ॥



-Aditya N Singh



-Bala Sundaram

# “जीनेदोखुदा, अबतोजीनेदो”

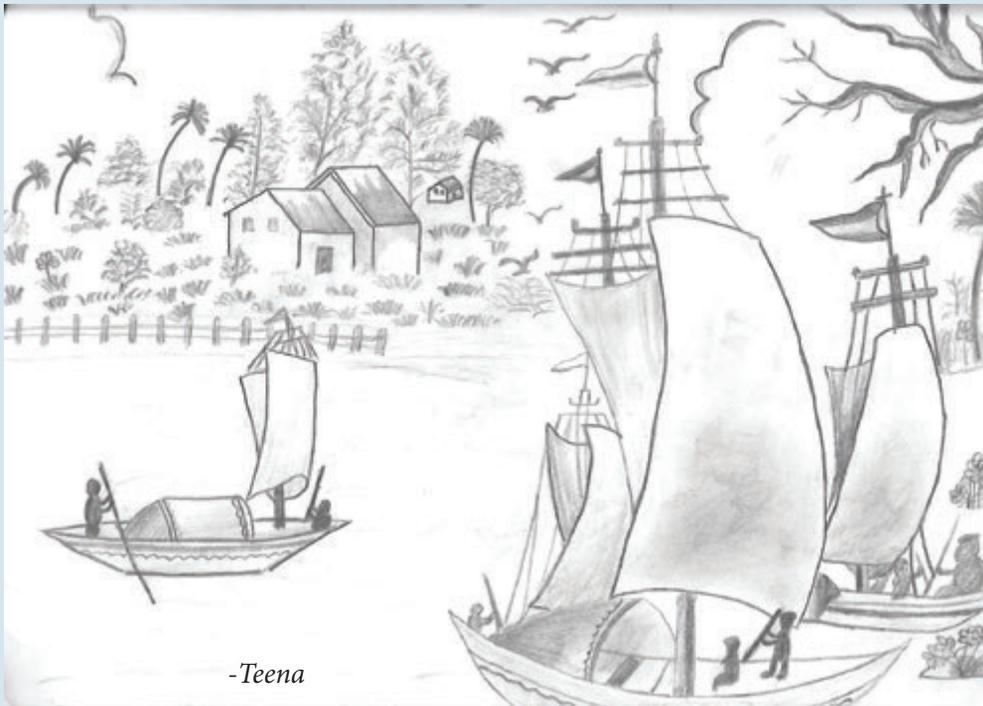
थोड़ी सी खुशी दो या थोड़ा थोड़ा गम दो  
जीने दो खुदा मुझे अब तो जीने दो,  
लोग यहाँ लड़ते तेरे ही एक नाम से  
देखता है तू बैठा कितने आराम से,  
जिसको बनाया तूने उसने तुझे ही बना दिया  
बिकता है तू इन दुकानों पे दाम से,  
आके अपनी दुनिया तू खुद ही सवार लो  
जीने दो खुदा मुझे अब तो जीने दो !



-Abhilash

कुछ न दिखे मुझे सब धुँआ ही धुँआ हैं  
कैसे मैं चलू आगे खाई पीछे कुआँ हैं,  
ये कैसी जमी तेरी जहाँ दर्द ही दर्द भरा हैं  
ये कैसा आसमा तेरा जहाँ से बारूद ही बरसा हैं,  
ये कैसी नदी तेरी जिसमें खून ही खून बह रहा हैं  
ये कैसा जहाँ तेरा जहाँतेरे सिवा सबकुछ रहताहैं,  
येकैसीरची लीला तूने की तेरा ही बच्चा  
हर एक से तेरा ही पता पुछता हैं,  
मेरे दुआओं का कुछ तो मोल दो  
जीने दो खुदा मुझे अब तो जीनेदो !

हर लब्ज मेरे तुझ तक पहुंचे  
पर तुझको कोई खबर नहीं,  
हर जखम रोये और अशक गिरे  
पर होता कोई शोर नहीं,  
तू है या तू है ही नहीं  
या तुझकोमेरी फिकर नहीं,  
डूब रही जग की कश्ती  
खुदहीआकर इसकोथामलो  
जीनेदोखुदामुझे अबतोजीनेदो !



-Teena

# Engineering Sciences

(Batch 2010-15)



## Shri Anil Kumar Soni, NDED

Discipline : Engineering Sciences

Eddy Current Methodologies for Reliable Detection and Rapid Imaging of Sub-surface flaws in Stainless Steel under the guidance of [Dr. B. Purna Chandra Rao](#)



## Shri Ravi. L, RDG

Discipline : Engineering Sciences

Thermal Hydraulic Investigations on Total Instantaneous Blockage in a Fuel Subassembly of Fast Reactor under the guidance of [Dr. K. Velusamy](#)



## Shri B Krishna Srihari, CG

Discipline : Engineering Sciences

Modeling the electrorefining process and the effect of cathode design in a molten salt electrorefiner under the guidance of [Dr K Nagarajan & B Prabhakara Reddy](#)



## Shri Varun Hassija, RDG

Discipline : Engineering Sciences

Development and Application of PSA Methodologies for estimating Risk associated from Nuclear Power Plants under the guidance of [Dr. Velusamy K](#)



## Shri Ashutosh Misra, RDG

Discipline : Engineering Sciences

Ratcheting of thin shells under thermo-mechanical loading\_Development of a code for predicting ratcheting of main vessel of a sodium cooled fast reactor,taking into account in phase and out of phase effect of thermo-mechanical loading under the guidance of [Dr. Chellapandi P](#)



## Shri Sadu Venkatesu, MMG

Discipline : Engineering Sciences

Design and Development of Out-of-pile version of Instrumented Capsule for Online Determination of Uniaxial Creep behavior in Structural Specimen under the guidance of [Dr. S. Venugopal](#)

## Shri Deepak. Ch, EID

Discipline : Engineering Sciences

Study of Synchro and Development of Synchro-to-Digital Converter under the guidance of [Dr. G. Amarendra & Sri. G. Venkat Kishore](#)



## Shri Kalyan Phani Makkuva, NDED, MMG

Discipline : Engineering Sciences

Quantitative mapping of elastic properties in nickel and titanium base alloys at nano scale using atomic force acoustic microscopy under the guidance of [Dr. Anish Kumar](#)

## Engineering & Physical Sciences

(Batch 2010-15)



### Shri Nandha Gopan L, SIRD,RMG

Discipline : Engineering Sciences

Semantic Information Retrieval and Knowledge Representation under the guidance of Dr. M.Sai Baba



### Shri Prasanna G, EIRSG

Discipline : Engineering Science

Micro controller based sensor development under the guidance of Dr. Amarendra G



### Shri Mahendra Chinthala, CTD/FRTG

Discipline : Engineering Science

Separation of cesium from simulated high level waste using electro dialysis ion exchange under the guidance of Dr. Satya Sai P.M



### Ms. S. Anbumozhi Angayarkanni, SMARTS

Discipline : Physical Science

Factors Influencing the Thermal Properties of Nanofluids and Phase change Material under the guidance of Dr. John Philip



### Shri Avinash Patsha,MSG

Discipline : Physical Science

Effect of Impurities on Physicochemical Properties of Nonpolar GaN Nano wires under the guidance of Dr. Sandip K. Dhara



### Shri Bonu Venkataramana, MSG

Discipline : Physical Science

Growth and Physicochemical Properties of Semiconducting SnO<sub>2</sub> Nanostructures under the guidance of Dr. A. K. Tyagi



### Shri V. Mahendran, SMARTS, MMG

Discipline : Physical Sciences

Direct Measurement of Colloidal Interactions under the guidance of Dr. John Philip



### Mrs. Sabeena, PMG

Discipline : Physical Sciences

Phase transformation in Ti-Mo alloys under the guidance of Dr. M. Vijayalakshmi

# Physical & Chemical Sciences

(Batch 2010-15)



**Shri T. R. Devidas, MSG**

Discipline : Physical Sciences

Investigation of Transport properties of the Topological Insulator system Bi<sub>2</sub>Se<sub>3</sub>. under the guidance of Dr. Awadhesh Mani & Dr. A. Bharathi



**Mrs. Leona J Felicia, MMG**

Discipline : Physical Sciences

Rheological Properties of Nanofluids under the guidance of Dr. John Philip



**Ms K. Kamali, MSG**

Discipline : Chemical Sciences

High pressure Raman spectroscopic studies on anomalous thermal expansion materials under the guidance of Dr. T. R. Ravindran



**Ms. Meera A V, CG**

Discipline : Chemical Sciences

Phase diagram studies on Bi-Fe-O and Bi-Cr-O systems under the guidance of Shri T. Gnanasekaran and Dr. Rajesh Ganesan



**Mrs. K. R. Rasmi, CSTG**

Discipline : Chemical Sciences

Synthesis of noble metal nano coatings on titanium for electrode application under the guidance of Dr. U. Kamachi Mudali

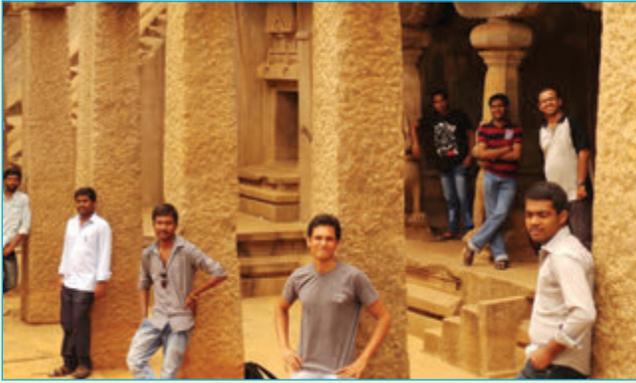


**Shri Benadict Rakesh K, CG**

Discipline : Chemical Sciences

Evaluation of tri-iso-amyl phosphate as an alternate extractant to tri-n-butyl phosphate for nuclear materials processing under the guidance of Dr. P.R. Vasudeva Rao

# Sweet Memories



# Sweet Memories



# List of Publications

1. Baldev Raj, S. A. Angayarkanni and John Philip, "Nanofluid for efficient heat transfer application", Book Chapter, Submitted
2. S. A. Angayarkanni & John Philip, "Review on Thermal Properties of Nanofluids: A Recent Development". *Adv. Colloid Interface Sci.* 225, 146-176 (2015)
3. S. A. Angayarkanni & John Philip, "Thermal conductivity measurements in phase change materials under freezing in presence of nanoinclusions", *J. Appl. Phys.* 118, 094306 (2015)
4. S. A. Angayarkanni, Vijutha Sunny and John Philip, "Effect of Nanoparticle Size, Morphology and Concentration on Specific Heat Capacity of Nanofluids", *J. Nanofluids*, 4, 1-8 (2015).
5. S. A. Angayarkanni & John Philip, "Tunable Thermal Transport in Phase Change Materials Using Inverse Micellar Templating and Nanofillers", *J. Phys. Chem. C*, 118, 13972–13980 (2014).
6. S. A. Angayarkanni & John Philip, "Effect of Nanoparticles Aggregation on Thermal and Electrical Conductivities of Nanofluids", *J. Nanofluids*, 3, 17-25 (2014).
7. Anil Kumar Soni, B. Sasi, S. Thirunavukkarasu and B. Purna Chandra Rao 'Development of eddy current probe for detection of deep sub-surface defects', *IETE Technical Review*.
8. Anil Kumar Soni, S. Thirunavukkarasu, B. Sasi, B. Purna Chandra Rao, T. Jayakumar, 'Development of a high sensitive eddy current instrument for detection of sub-surface defects in stainless steel plates', *Insight-Non-Destructive Testing & Condition Monitoring* Vol. 57, No. 9, pp. 508-512, September 2015.
9. Anil Kumar Soni, S. Shuaib Ahmed, S. Thirunavukkarasu, B. P. C. Rao and T. Jayakumar, 'Multi-Sensor Image Fusion for Enhanced Detection of Sub-Surface Defects by Eddy Current Testing', 14th Asia Pacific conference on Non-destructive Testing, 2013.
10. Anil Kumar Soni, B. P. C. Rao, B. Sasi, Saji Jacob George, T. Jayakumar, 'Development of a Low Frequency Eddy Current Instrument for Non-destructive Evaluation', *National Symposium on Instrumentation (NSI-38)*, 2013
11. "Localized Tip Enhanced Raman Spectroscopic Study of Impurity Incorporated Single GaN Nanowire in the Sub-Diffraction Limit", Avinash Patsha, S. Dhara, A.K. Tyagi, *Appl. Phys. Lett.*, 107, (2015), 123108.
12. "Localized Charge Transfer Process and Surface Band Bending in Methane Sensing by GaN Nanowires", Avinash Patsha, P. Sahoo, S. Amirthapandian, A. K. Prasad, A. Das, A. K. Tyagi, Monica A. Cotta, S. Dhara, *J. Phys. Chem. C*, 119, (2015), 21251.
13. "Nonpolar p-GaN/n-Si heterojunction diode characteristics: A comparison between ensemble and single nanowire devices", Avinash Patsha, R. Pandian, S. Dhara, and A. K. Tyagi, *J. Phys. D: Appl. Phys.*, 48, (2015), 395102.
14. "Effect of substrate heating and microwave attenuation on the catalyst free growth and field emission of carbon nanotubes", R. Kar, S. Sarkar, C. Basak, A. Patsha, S. Dhara, C. Ghosh, D. Ramachandran, N. Chand, S. Chopade, D. Patil, *Carbon* 94, (2015), 2565.
15. "Optically confined polarized resonance Raman studies in identifying crystalline orientation of sub-diffraction limited Al-GaN nanostructure", A. K. Sivadasan, A. Patsha, S. Dhara, *Appl. Phys. Lett.* 106, (2015), 173017.
16. "Optical Properties of Monodispersed AlGaIn Nanowires in the Single-Prong Growth Mechanism", A. Sivadasan, A. Patsha, S. Polaki, S. Amirthapandian, S. Dhara, A. Bhattacharya, B.K. Panigrahi, A.K. Tyagi, *Cryst. Growth Des.* 15, (2015), 1311.
17. "Direct Evidence of Mg Incorporation Pathway in Vapor-Liquid-Solid Grown p-type Nonpolar GaN Nanowires", Avinash Patsha, S. Amirthapandian, R. Pandian, S. Bera, A. Bhattacharya, S. Dhara, *J. Phys. Chem. C* 118, (2014), 24165.
18. "Raman Spectral Mapping of III-V Nitride and Graphene Nanostructures", Avinash Patsha, K. K. Madapu, S. Dhara, *MA-PAN-JMSI* 28, (2013), 279.
19. "Influence of oxygen in architecting large scale nonpolar GaN nanowire", Avinash Patsha, S. Amirthapandian, R. Pandian, S. Dhara, *J. Mater. Chem. C* 1, (2013), 8086.
20. "Probing crystallographic orientation of a single GaN nanotube using polarized Raman imaging", Avinash Patsha, P. Sahoo, S. Dhara, S. Amirthapandian, A.K. Tyagi, *J. Raman Spectrosc.* 44, (2013), 651.
21. "Raman imaging on high-quality graphene grown by hot-filament chemical vapor deposition", S. Kataria, A. Patsha, S. Dhara, A.K. Tyagi, H.C. Barshilia, *J. Raman Spectrosc.* 43, (2012), 1864.
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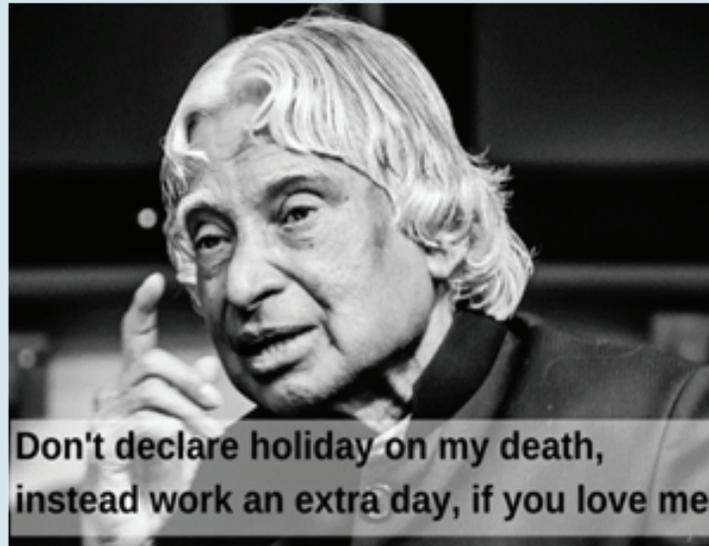
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# About Dr. A. P. J. Kalam



Dr. Kalam, fondly called the 'People's President', scientist, the 'Missile Man of India', was one of the most celebrated scientists of this century. Among his many accolades, including honorary doctorates from over 40 universities, he was honoured with the 'Padma Bhushan', 'Padma Vibhushan', and the 'Bharat Ratna', the highest civilian award of India.

Life was hard and challenging for little Kalam but he never bow down before challenges. His life was a masterpiece of hard work, dedication to the goal, inspiration, care, responsibility, and more over a loving human being and a true hero of India. The small town of Rameswaram had no electricity, only kerosene lit lamps. His mother used to save kerosene so that Kalam could study late into the night. He used to distribute papers to houses to help support the family. Despite a challenging upbringing, Kalam's hard work paid off and he became an aeronautics engineer from the Madras Institute of Technology. Here, Dr. Kalam was regarded as the master brain of India's missile project. For Kalam, hard work and determination was the key to his success:

"Have courage to think differently, courage to invent, to travel the unexplored path, courage to discover the impossible and to conquer the problems and succeed. These are great qualities that they must work towards."

Work till death and if possible even beyond that. Man needs his difficulties because it is necessary to enjoy his success. The former President also wrote his autobiography, Wings of Fire, which tells readers about unlocking their inner potential. He elaborates his own life journey in detail, particularly how he kindled and kept the fire alive within himself:

"Dream is not that which you see while sleeping it is something that does not let you sleep."

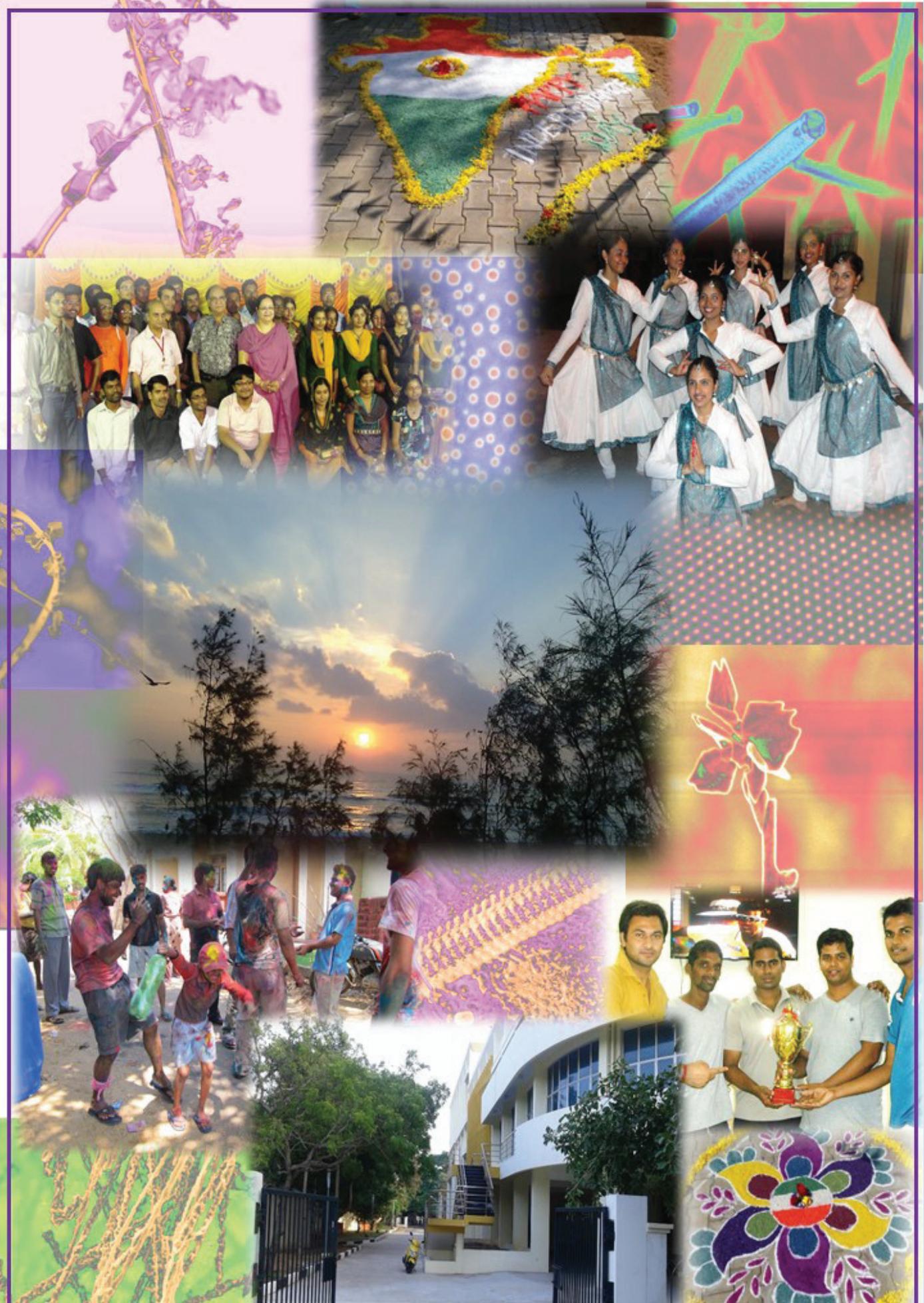
In his book, My Journey: Transforming Dreams into Actions, Dr. Kalam writes:

"Over the years I had nurtured the hope to be able to fly to handle a machine as it rose higher- and-higher in the stratosphere was my dearest dream, I had failed to realise my dream of becoming an air force pilot," he writes. "It is only when we are faced with failure do we realise that these resources were always there within us. We only need to find them and move on with our lives." Dr. Abdul Kalam was a visionary dreamer. He was a man who believed that great ideas can change the world. But he believed that such change is possible only when attitudes also change:

"All Birds find shelter during a rain. But Eagle avoids rain by flying above the Clouds."

We are proud to be born in Kalam's Age, the people of this era will be remembered as people who dreamt their vision and realised it in their own life time. Kalam steered the idea that if you work hard no matter how big your dreams is you are bound to realise it.

"We are not burying a man, we are planting a seed of inspiration."



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