FROM THE PRESIDENT Prof. Dr. Madhusudan Bhattacharyya

Dear Members,

Friends, you must be feeling good that your Association has regularised the publication of the Association's Journal, twice a year as at present and its *mass* also has gone up. The credit primarily goes to the editor Prof. Dr. Santanu Das; Editorial Board and the Council members could not be belittled with dry and customary thanks.

I take this opportunity to bring to your notice the news item, **'Worries linger after nuke breakthrough'** (The Telegraph, Monday, 9 February 2015). As an engineer you may have food for thought which relates very much to the destiny of our country; please forward your well thought of comments for publication in the next issue of our journal which will be forwarded to the relevant authorities.

As for myself I already opined in our Journal Vol. No. 81, 2001, p. 23; it's not clear whether the manufacturer and installer of a nuclear power plant in India is exempt from any liability, God forbid, even if there occurs an unfortunate accident, say within a short span of time after the plant is synchronized with power grids.

We have received the eighth installment of write up from our illiterate engineer friend as printed below.

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This is my eighth installment of write up. Narrating technical activities alone would be utterly dry and intently uninteresting to go through; that will be a monolithic format: problems and solutions proposed.

An engineer is just like one of you, has ambition, expectation as well as disappointment. He wants a social recognition; but unpalatable though it may sound, a hardcore professional hardly achieves this; the analytical minds easily discern that celebrities by dint of real achievements only are a few the world over while the others are hailed for their wealth and its display, for their muscle power and long hands in running the wheels of administration. How is the administration effective can be judged by the law and order problem across the globe. The vested interests try to project all in terms of regionalism, religions, caste and creeds. The problem they want to conceal is, there are really two classes, haves and have-nots in every country. All what is happening is the conflict between the rich and the poor; the rich have everything to lose, the poor nothing but their poverty. Man's eternal greed is pushing this advanced civilization as if to its total extinction; at least so does it appear to this illiterate engineer. I am at loss to realize how

the overfed and the unfed co-exist. All the governments however are reluctant to admit that peoples are dying in starvation courtesy illustrious advisers who have no idea about the ground reality, neither do they care to know the facts nor refuse to doctor the data as prescribed by the rulers. In India there is enough of cereals in stock @ over 500 gms per capita per day based on 120 crore population, but there are starvation deaths as reported in the Newspapers, but denied by the concerned government; as per official admission the deaths are due to malnutrition? Things may not be different in other countries, only forms vary.

Bhola, a small entrepreneur, runs a small printing press, comes with first proof of journal papers. What's about the new rent of your press-room? I inquire.

The landlady is adamant on doubling the current rent; she won't budge an inch. However, she agrees to allow me to use a xerox printing machine to operate from the premises.

So?

It isn't happening now. I contacted SBI; they are ready to give me a loan against my fixed deposit of the same amount with the bank. If I had the money would I care to approach the bank for loan?

But government is so proactive to encourage small entrepreneurs, I think SBI has misled you.

In the mean time let our democratically elected governments infuse thousands of crores in various public and private big sectors, offer loan waiver, interest waiver schemes for them. "Taxing the poor, paying the rich" seems to be the motto of the ruling dispensation; a huge incentive (subsidy) of about 5 lakh crores to a handful of corporate giants, on miscellaneous counts is tried to be offset by scrapping subsidy on LPG and kerosene to save Rs. 55000 crores. This move will severely hit the poor and the middle class.

Despite the huge subsidy to the supposedly benevolent corporate lobby how many new jobs have been created? (The Statesman, 7 October, 2012)

I have got a soft corner for the Bholas. I mentally perceive how they strive with the odds and we eke out our living with pensions financed by the Bholas and still poorers. No body to finance them; what a mockery of a welfare state!

Why do you think this way? You have earned it.

I am confused totally.

Why do you write all these? Are these pertaining to a technical subject?

If stress management is technical why not? The illiterate engineer vents out his ire this way, he gets a relief though temporarily. Afterall, is there anything permanent in the universe? Yesterday's you and this moment's you are different. So is true for all objects, animate and inanimate.

You are talking like a wise person!

I don't have that audacity.

The airbrake-production is running in full swing. The MNC is happy. Why should I visit the company for no reason? For fee only? It hurts my conscience. I should discontinue visiting lest the company is desirous to replace the imported components by indigenous ones. But the collaborating company, the controlling share holder of the MNC, may not be interested for obvious reasons.

I meet the CMD, Mr. Bhattacharjee and tell him about my decision.

Mr. Bhattacharjee smiles at me and says, Now the time is ripe for import substitution. This, of course, will not be palatable to our principal abroad. But they shall have to look into our field hardships here also. Then he rings up the GM and requests him to meet him then, Here Prof. Satpathy is with me.

Here the machineries are adequate, workers are aplenty, but they are pampered which this MNC can afford since it has monopoly in braking systems in the Railways and the company dictates the pricing and naturally the workers working leisurely here do not adversely tell upon the profitability of the MNC.

Three vendors are chosen and two pass the test. Their supply meets the specification, very few are rejects. By 6/8 months nearly all the mechanical components are manufactured locally at lesser costs. This increases the profit margin of the company.

CMD is well apprised of this, says, Satpathy, what about the relay units?

Sir, I have already studied that being assembled at your Tangra works. The components can be indigenised. Ok then, proceed, CMD says.

These are all getting fine. A new works manager is appointed for the Tangra Works, strict and production conscious. A large section of the workers naturally dislike him much and they grab any opportunity to stall the production of the relay units, only product of Tangra works. Easiest way is to reject the relay coils supplied by outside parties. One of the two parties strikes a deal with the person checking the quality of the relay coils, other party does not. So the latter's supply is rejected. This supplier who standardized these coils, supplies the major chunk and therefore the production drastically falls.

Incidentally, I am honorary Chairman of the latter supplier. Bishu, manager, brings to my notice about enmasse rejection of the coils. I go to the shop, find out whether any deviation in the process of coil-manufacture has been made. No, they haven't. There are more than 250 coils ready for dispatch, not delivered as the two earlier lots of 250 each stand rejected. I start checking the coils using Wheatstone Bridge fitted with a sensitive galvanometer. The galvanometer deflections are all within limits set. Insulation testing with 1200 volt Meggar is also ok. Bishu sighs in relief.

Maamu, probably this is an extortion technique.

I clearly remember how at the request of their management, this small enterprise tried hard to indigenize the relay coils. Bishu, I add, you say money speaks here?

This is what I sense Maamu.

Ok, make are appointment with their WM, Mr. Ganguli. I would like to meet him in person day after tomorrow at 3 PM, you be there also.

Mr. Ganguli knows me by name, offers us tea. Over the cup, he says, I joined only four weeks back and I am in trouble. You know that relay coil assembly is the only production item of this works and its production has gone down so much that I can ill-afford to justify it to my upper management.

How disappointed Mr. Ganguli is! I say, Yes I know, that is because of supply of defective coils from our side; that's why I am here with the manager of my company Bishu, to sort out the problem where our product goes wrong.

Mr. Ganguli sees a ray of light in the chaotic darkness.

We all are in the stores, a large number of coils are on the rack. WM asks his man, Why these are not used?

Those are rejects, says the controller.

Prof. Satpathy is here to find out where the coils go wrong. Show them now, Mr. Ganguli orders.

The checker feels uneasy and quite nervous.

Start checking right now, Mr. Ganguli asserts.

Checking reveals very little deviation, if any, in very few coils. You see Sir.

I add, Mr. Ganguli, I reject the whole lot.

I pass instruction to Bishu to take back the coils and to remake them anew.

Mr. Ganguli is a seasoned electrical engineer. He sees the motive of the stores. None tested is a reject. But he is not prepared for this turn of events. He requests me to come to his chamber.

The inspector realizes that he is caught red handed by his superior boss, says, Sir we will sort out the acceptable ones. Mr. Ganguli looks at him extremely irritated, says, Let these be here, go back Bishu.

Over a cup of coffee, Mr. Ganguli opens his heart. The politics here is very dirty for any gentleman to tolerate. Who knows, the inspector is just but a pawn. Please tell Bishu to supply more if they have some in stock. He drops me at my place.

Bishu rings me this evening, it's 8-30, Have you any difficulty in coming back home, Sir?

No, not at all. Mr. Ganguly gave me a lift. I realize, Bishu is much interested to know something more about the coils; his telephone call is just but an excuse. Bishu, how many coils you can deliver to-morrow? Good, deliver the whole lot. But see that the coils are made exactly

following they same processes in future too. There is no room for any laxity. Let our workers be not complacent. Ok?

I am an illiterate engineer, often led by instant sentiment witnessing what's happening around me. I feel relieved and happy on reading *Kathamreeta* by Sri *Ma* on the life of Ramakrishna who needs no introduction.

Then again environ stirs me. My wife, seven years junior to me, taking six/seven tablets a day (and none withdrawable according to our house-physician), is a changed person altogether; she has lost all interest in life, says, Search for an old-age home.

Why, would you relish the company of the old guys? I have visited one such at least thrice, stayed for hours together in my fifties. No body seemed happy. They were obsessed with the family they left, always talked of their families. It seemed to me, they would prefer to be back there. But, alas, the families had left them!

One nighbour visits us at this juncture. I tell him all that transpired between my wife and me in her presence.

Madam, daadaa will not shift.

That's okay. Here I can't go out for a walk even, such is my health, but still I have to do so many chores and cooking for the last few months.

But you will feel for him.

Not at all.

Okay, my friend, search for her accommodation in a good old-age home, I quip.

In Barackpur, there is one such by the Ganges proper, run by a *Swamiji*. One accommodation may be managed there, says my neighbour. Then he narrates what he saw of the old persons there, they live in the past. Families have deserted them, they haven't. *Boudi*, I want to live in a far away place with my spouse. If our offspring visits us sometimes, those will be very sweet moments.

I feel the presence of Rabindranath; Amit paints a picture of his post marital days with Labonya; each will live in a romantic house separately an island apart. He will meet her on some Fullmoon nights subject to invitation by her. Amit feels, this way their courtship love and attraction will be immortalised. (*Shesher Kabeeta*).

Look my friend, I frantically searched to rent an affordable flat in Kolkata midway between here and my home where my son lives, but to no avail.

You could have purchased one long before, says my wife.

Then I had to take to unfair means for earning.

Ok, carry on between yourselves. I have to do an urgent piece of work, says my neighbour. I laugh, A Brahmin never whiles away his time once he gets what he is for. By that measure,

you have belittled your cast identity.

He says laughingly, We are chakraborty, a Brahmin of lowest grade.

That's not your actual Surname.

Yeah, we are Banerjee.

Anyway, do you carry the holy thread? I inquire.

Yes of course, but for a different reason. He shows his thread, a key tied up there.

A few minutes after his departure, my daughter steps in; she was so long busy coaching students.

Look, your mother wants to shift to an old-age home; she no longer can cope up with cooking. About two hours later, Parul who worked here previously, appears smiling with my daughter.

Again Past becomes vocal. Prince, so called in the locality, approaches me with his technical problem. He owns a small factory, manufactures ERW (electric resistance welded) conduit pipes (used for electrical wirings) from thin mild steel strip by rolling and subsequent resistance welding. He has been in the line for quite a few years successfully. But now, he is in trouble, his supply is being rejected by the present dispensation.

What do they say?

Your supply does not conform to BIS (Bureau of Indian Standards).

Write to the university for testing of your conduits. Enclose a copy of the IS specifications. University will advise you of the test fee for payment in advance.

No problem Soduda. Please help me, I am in soup, I am really undone.

Bring three specimens of about 15 inch long from each lot of the rejects.

I study the specifications and wonder why 24 percent elongation is the minimum required for conduit.

The specimens are tested, percentage elongation hovers around 22 for each lot, ultimate tensile strength ok.

On the test reports, I give a remark, why so high percentage elongation is required for a conduit? These days of course, polythene pipes are mostly used for electric wiring, concealed wiring in particular.

A few days later, Prince meets me smiling. Soduda our problem is solved. Thank you very much for your help. Of course......

Incidentally, faced with a similar situation, a small factory owner manufacturing bi-metallic dial type thermometers, meets me again at the university.

I look at him inquisitively.

Sir, our thermometers are rejected by the PSU manufacturing locomotives. They ask for test

reports for not only vibration testing, but also weather testing (testing in dust chamber and testing under water-spray so far as I reminisce four decades past).

Have they given you the specifications?

Yes Sir; they have given two pages specifying the type of testing along with duration of each test to be carried out for the thermometers, in addition to vibration testing. We are ruined, Sir. Our whole capital is blocked. We have to close down our factory.

How are the PSU carrying on their production? I quip.

They are using our old supplies for which they have already released payment.

But soon their stock will be exhausted, then what?

They are planning for import, Sir.

Well Mr. Harare, how long have you been supplying them these thermometers?

More than 3/4 years last.

I see clearly their plan. Mr. Hazare, have they complained to you earlier about the malfunctioning of your thermometers?

No Sir, not even once. Please help us.

How can I help you, weather testing facility is not available at the university. Let me think over. You better write to us along with a photocopy of the test specification. Also write to the PSU informing that you have approached the university for necessary testing as desired by them.

A morose Hazare leaves my room.

I appreciate his state of mind. But can I be of help to him!

Mr. Hazare deposits the meagre test fee to the university and brings me 3/4 thermometers.

But what's then. I torment my brain cells for days together. I can see the evil design of the PSU. Suddenly I get a lightning flash, *the idea* strikes me.

I write a letter to the PSU (a copy sent to the ministry of Small Scale Industries, Govt. of India, attention : The Director known to me) desiring to know why weather testing is desired for the thermometers. However, my university is committed to help the small scale industry and the test will be arranged at my lab, for which a setup has to be designed, manufactured and installed entailing a substantial cost which the small industry can't simply afford. I wonder whether with financial assistance from your side we can make the testing infrastructure at the university.

No reply I receive from the PSU.

About 15/20 days later Mr. Hazre comes to me. His body language indicates that he got a favourable response from the PSU.

Sir, we are indebted to you so much.

What for? I haven't done any favour to you.

No weather testing is to be done, Sir.

I feel, you have to.....

Yes Sir, a little more percentage......

I wonder whether money talked or my letter or both in tandem.

I get a telephone call from Ajoy. I am afraid of his call now-a-days. Each time he calls me for the last two years he conveys departure of some of our friends and this time also, no exception.

Ajoy, it's but a natural phenomenon with our age-group. We have to embrace the inevitable with all grace. I only pray to the Almighty, take me on your lap all of a sudden.

Daadu, see this problem; I have done it.

Wrong here. Parentheses taken out, but you have not multiplied this number to all the figures within the parentheses. Be a little careful, you can do all the problems yourself.

Experiments requiring steam in Mechanical and Chemical Engineering Departments are suspended for more than a year. The water tube Babcock Willcock Boiler is in ill health. This is the boiler which had been supplying electricity via a turbine to this Engineering Institute for many a years. Its hey days are gone, now power comes from commercial thermal power stations. But the students are suffering, who cares? The teacher bothers much about the UGC guidelines on promotional advancement. So many are busy with research to churn out papers in series, joining conferences and seminars in India and abroad, taking out classes at the private engineering colleges to earn extra, corresponding with different research funding entities and travelling far distance to meet them in person. With so much energy spent on these counts, tired and exhausted teachers often fail to attend their classes allotted by the university which pays them a fat salary. To add to these great (!) attributes, they many a time run coaching classes at the university within the duty hours and beyond. And the authority? Lesser said the better. Look at the India corporate. Under this back drop, all messiahs in the teaching community can not be expected in this society of failing integrity.

All these don't matter. Our governments know how to set up worldclass institutions by declaration alone!!

Will you go like this?

I am not, my pen betrays. It predominates over me. I know, I should tame it. At times it's argumentative even; a veil of satire wins over me completely.

I poke my nose in the boiler affair. While many prefer white collar virtual research on computer, I the real life jobs. I am practically a computer illiterate and not ashmed for this debility of myself, rather reasonably content with what I do.

All the water tubes need change. A reputed company quotes Rs. 13 lacs for this job only.

There are quite a few other accessories and mountings which have to be reconditioned to commission the boiler.

I decide to get the whole job done under my supervision; this is my maiden attempt. Friends discourage me.

This is a risky job. Don't play with our students' lives, say my colleagues.

Why are you so afraid? You are teaching all these and in the real life you recede! You should have confidence on yourselves, otherwise teaching is futile.

I split the work in phases, estimate the cost at Rs. 4 lac. One teacher, my younger colleague, joins me. So, we are two alone.

I write to the Vice-chancellor for sanctioning the sum which the University Council approves.

We engage one young man, a diploma holder in mechanical engineering, who recently started working on fabrication of structure in a small way.

Sir, did you send for me?

Yeah; Mukherjee have you worked on boiler repair?

No Sir, I am not affiliated to the Boiler Directorate.

Never mind, that's our headache. Do you have a good welder and a skilled fitter?

Yes Sir, reasonably good.

That will do; as per our instruction you will work. Ok?

Right Sir,

Seamless tubes are procured. It takes us a month. In the mean time the boiler is totally overhauled.

Mukherjee is cold bending the tubes as required. I check the bend, a few pieces have only been bent. At the bend ovalinity is more than permisible as per code.

Stop bending, these few pieces are reject, I pronounce.

Sir, we are working as per your instruction.

No, I am sure something is wrong somewhere. Bring one piece of a straight pipe made ready for bending.

The pipe piece is brought. I notice, it is filled with sand loosely. This won't do. Ram the sand by stoking the pipe with a wooden piece. Look, the level of sand goes down the tube due to compaction. Additional sand is poured, the pipe is struck with a wood piece till the sand level stands upto the mouth of the tube. A round wooden tapered piece is driven hard to close the open end of the pipe.

I suppose Mukherjee, you haven't sand-filled those tubes this way.

Mukherjee stands in silence.

Now let's bend this tube. The ovalinity at the bend is much lesser now; it's within the permissible limit.

Mukherjee, follow our instruction in totality.

I will, Sir.

Now somehow the workers in the Power House seem interested. They approach me.

Welcome friends; you see there is lot to do in the revitalization work. Nearly all the components need attention; the variable speed hydraulic drive of the chaingrate, the feed pump (which has to be really made anew, so to say), the valves, the water drum, the steam drum, the dysfunctional manhole etc. We are free after quarter past five, so we can devote ourselves whole heartedly only in the evenings. You have to work beyond office hours and no overtime for that. We look at them.

They agree readily.

We feel, the workers joining our team merrily means the job is eighty percent already done. A large section of the departmental teachers and stuff runs a gossip campaign : Prof. Satpathy is wasting money this way, so I am informed by the other associated teacher.

Weeks pass, months pass, the job can not be hurried through. Each and every tube prior to fitting is being hydraulically tested. The valves, most of them need replacement of some components, need patience for quality job. Feed pump needs a new cast header piece and so goes the renovation work. Drums and headers need thorough cleaning, both inside and outside; thickness gauging of them is done by scanning them with ultrasonic thickness tester. Tubewelds are XY tested by radiography using isotope, *Iridium 235*.

My mobile is buzzing a musical tune. How are you Sunil?

I am alright for our age. I am so sorry, I couldn't complete the review of the book; you know my failing eyesight is a hindrance in.....

Ok Ok, take your time, don't strain your eyes much. By the way, have you gone through today's The Statesman?

Yeah, but only the headlines. My reader hasn't come as yet, he reads out for me.

I read out the relevant portion of How to stop corruption. Get it Sunil?

Beautifully straight forward write up it is.

So, what Sunil?

You told me the other day, the government business would run as usual. I am completely with you.

But good that a jolt is wreaking so much before the public, I add.

Do you think Sodu, this massive anticorruption movement will yield no result?

No my friend, it will have some effect positively. But heaven will not descend on earth. Even if so, heaven itself is not full of virtues only, piety wanes there at times too.

Back to boiler renovation. One day I am passing beside the boiler house in the morning at about 10.30. Radiographer is taking shots. The area is cordoned to keep away people from getting irradiated. I call the radiographer, Where is your filmbadge or dosimeter?

He keeps mum.

You know more than me, this is not permissible. I can't allow you to work this way. Stop working. Begin the work only when you follow the safety norms. I instruct our men accordingly.

As Head of the department, I have much to do in the department in addition to my normal teaching load; as per university's norms for Heads I have not discounted my teaching loads since I relish teaching. When I think at this late seventy, if I had done anything right in my whole life, that is my switching over to the teaching profession from industry though I never got patronage from the university administration as I was never never their 'yesman'.

My wife complains so many times against this decision of mine! I simply smile.

See your friends, your students working in industries, move on car.

They are worth more than me.

But you are second ranker, she says.

But they have so much of other acumens. Everybody gets the post he deserves, that's equally true for me.

At this ripe old age also I hear, Look at the professors now suited booted, mostly car owners and you?

They are rich professors, we are poor ones.

My wife leaves at this point aghast.

It's already 5.30 in the afternoon. Goutam comes to my room, Sir, one gentleman has been strolling on the corridor since noon. He wants to meet you.

Oh, you!

Take your seat.

Sir, my company has given me a film badge, I don't wear it.

But why? You are risking your life for what! How much you are irradiated can not be assessed then.

Sir, the camera I am working with is manually operated, this is banned now. Our company has also remote operated ones, a few of them; all are busy elsewhere. So.....

But how a banned isotope camera is possessed by your company bypassing eyes of the regulatory authority! I wonder, then realise what a great *idiot* I am! What does money fail to do in India?

Sir.

Oh yes, tell me what you have come to me for?

Sir, allow me to work without filmbadge, that is retained by my company.

Tell your management what happened to you to-day.

He sits with his head down, shows no sign of leaving the spot.

Sir, I know I have already been subjected to heavy dose of radiation. My finger tips, my nose are already deformed. Sir, I have to choose between immediate starvation death of my whole family and my personal safety in workplace. What shall I do, Sir?

I feel hapless. Ok, do as you like. Oh God, forgive me, my conscience pricks this poor creature.

We often work in the boiler house beyond 8.30 in the evening. Every body feels hungry; I do my bit personally.

When the job is completed it's time to be certified by the Boiler Directorate. Their Chief has taken professional NDT certification course under me. He himself comes to our department. What shall I test on the boiler Sir? The job has been done under your supervision and I know how quality conscious you are. You can not compromise on safety of your students, in particular these days of one or two offspring-parents.

That's ok, but this will give our people a wrong signal. You better test the boiler as per rule. Right Sir, I have never thought this way; in fact the certificate is ready.

Let's go down to the Boiler House.

He instructs our boiler people what to do. In fact all the, tests needed have been done by us already save the steam pressure drop test. The boiler is fired at about 4 pm as hydraulic test took long hours.

We two are tensed since we have not fired the boiler without a fit certificate from the competent authority, in pocket. Our departmental teachers and staff are waiting to **witness our failure.**

At half past five, I along with Chief Inspector come upstairs in the department. Over a cup of tea, the chief hands over the certificate to me duly sealed, referenced through their dispatch.

Sir, I came prepared. You have also taught me a great lesson to day that rules must be followed, at least where safety is concerned.

Those days were so nice, so eventful, so enjoying!

To-morrow is the 66th Independence Day; the same gorgeous parade in the State Capitals and at New Delhi spending so much from public coffer with vacuous speeches when the entire country save a privileged few grapple for mundane existence.

When will our leaders realize, the empty stomach only appreciate food and not promises of a bright future. Friends, **Present** is more vital than even a rosy **Future**.

Hot topic these days in whole of India among the elites is setting up of institutes of excellence by legislation and a mentor group of experts to guide. The more the distance, the member of the mentor group/high power commission comes from, the more competent he is! Very often than not, the member of the soil is more foreign than the foreigner and advocates the remuneration structure of the teacher at par with his foreign counterpart considering the exchange rate; this, he thinks, is necessary to lure good professors. (The sincerity of a teacher is directly proportional to remuneration!!). But what about the living cost index abroad!

What happens to the existing educational institutes, in particular those having track records of excellence? Why can't you reinforce their infrastructure? After all any new giga project has a dazzling charisma, sizeable initial and settingup expenditure, possibility of lucrative appointments to be distributed conveniently; job generation financed from state bourses are the net outfall depriving the welfare of the poor tax payers! The influential ones target the bull's eye and rest litterateurs look greedily at what trickles down. Of course, there are a few exceptions for whom India finds a place in the comity of nations. This engineer illiterate bows down his head with high esteem for these noble souls. With them India has great future indeed.

More next time probably.

Sd/- Sadananda Satpathy Illiterate Engineer

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Wishing you all a prosperous and happy new year and with regards and best wishes to you and your families,

February 10, 2015

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Sincerely yours Sd/- Madhusudan Bhattacharyya

The Centenary Year of The A E I is 2018–2019 Members to kindly advise on *How to celebrate the contenary year*