

A BRIEF ACCOUNT OF IASST HISTORY



INSTITUTE OF ADVANCED STUDY IN SCIENCE AND TECHNOLOGY (IASST)

(An Autonomous R & D Institute under Department of
Science and Technology, Govt. of India)

Vigyan Path, Paschim Boragaon, Garchuk
Guwahati - 781035, Assam, India

A BRIEF ACCOUNT OF IASST HISTORY

A compilation of write-ups of persons associated with the growth and development of the IASST, Guwahati, before taking over by DST, Govt. of India.

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Neelotpal Sen Sarma



Institute of Advanced Study in Science and Technology (IASST)

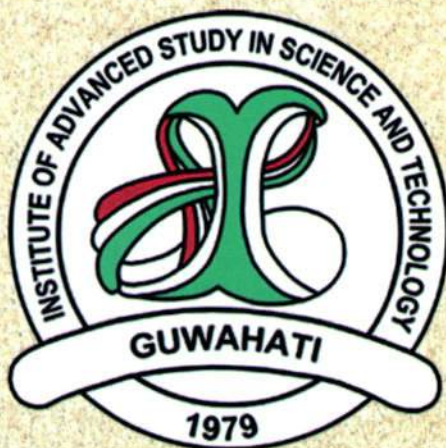
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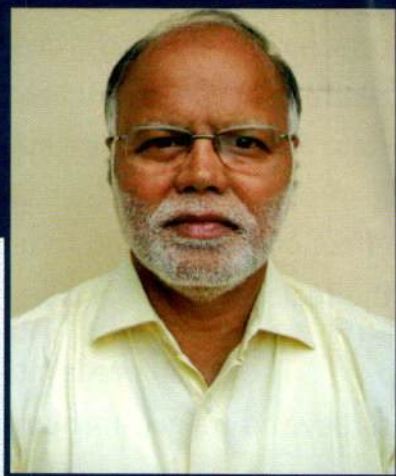
VIGYAN PATH, PASCHIM BORAGAON, GARCHUK

GUWAHATI - 781035, ASSAM, INDIA

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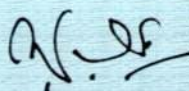
Preface



This publication is personal accounts of untiring efforts, dedication and association of distinguished academicians, scientists and science administrators of Assam in the long journey that began in Nov 3, 1979, the day of birth of IASST under Assam Science society to March 9, 2009, the day of its coming as a full-fledged national research and development institute of multidisciplinary studies. Institutions are product of human intellects which have played crucial role in shaping evolution of values, morals, organisation, tools, structure in the dynamic human civilization. Science and technology institutions have been directly responsible for acceleration of progress of civilization and quantity and quality of institutions can certainly be criterion for comparison of magnitude of development among communities

and countries. The publication of this unique effort of these personalities with strong dedication to science and to start a science centre of advanced studies as a platform for young talents of the state and the region is a humble effort of IASST staff to show the mark of respect. We also hope that this effort will have a stimulating effect on present and future generation of science fraternity of the region.

The region needs more science and technology institutions to develop trained manpower and to generate technical know-how for transformation of its rich resources to accelerate progress and to catch up with other developed states, regions and nations. We are confident that these personal accounts as brief history of IASST will continue to witness expanded values through dedicated efforts of present and future workers of IASST to increase quality of research and its applications towards this goal.



(N.C. Talukdar)

Director

BRIEF ACCOUNT OF THE FORMATION STAGE OF INSTITUTE OF ADVANCED STUDY IN SCIENCE & TECHNOLOGY, GUWAHATI

JAMINI MOHAN CHOUDHURY

The idea of initiating advanced study and research in Applied Science was first suggested by me in the Presidential Address at the Annual General Meeting of the Assam Science Society held at Jorhat in 1964. At that time A.S.S. was emphasizing development, study and research in basic and fundamental science. During the later part of 1970s A.S.S. drew up an ambitious plan for the establishment of a science Museum, a Planetarium and a Research Institute. The State Govt. of Assam granted several bighas of land at Khanapara for this purpose. However the Planetarium and the science Museum were later taken up by Govt. of India for establishment. In the meantime, the CSIR granted one senior and one junior Research Fellowship to undertake higher advanced research in theoretical Plasma Physics. However, in course of time, the Plasma Physics Research got delinked from the A.S.S. and got separate funds directly from the state govt. The Institute of Advanced Studies was first started in a rented part house in Fatasil, Uzanbazar, Guwahati in 1979. President of India Dr. S. Reddy came to inaugurate the whole scheme of A.S.S. in 1979 at Khanapara Complex. At that period, the A.S.S. had no office building of its own. At the rented part house two part time research workers started advanced study in Bio Physics. I was appointed part time Honorary Director since I was working as the Vice Chancellor of Gauhati University at that time. Since the accommodation at the rented part house at Latasil was found to be very insufficient the A.S.S. shifted the Research Laboratory to Khanapara where Assam Agriculture University (Vet: Complex) provided adequate space free of charge. Once the Institute wanted to be a separate



entity from the Assam Science Society since it was receiving separate budget allotments from the govt. But since the IASST did not frame rules and regulations for the purpose, the matter was not pursued further State govt. allotted a few bighas of hillside slope land for the institute at Narangi, VIP Road in Eastern Guwahati, but the IASST did not occupy it as the place was not suitable for research laboratory. During these years more and more research scholars joined the institute to do research in Applied Sciences.

I was relieved of the post of part time Honorary Director in 1984 by the Assam Science Society.

BRIEF BIO-DATA

Name	–	Jamini Mohan Choudhury
Date of Birth	–	03 August, 1920
Place of birth	–	Tezpur Town, Sonitpur, Assam.

EDUCATION

B.Sc. (Hons. in Geology), Presidency College, Kolkata, 1941.

M.Sc. Geology 1st class-Banaras Hindu University, 1949.

Diploma from Imperial College of Science, London

PhD Geology, London University 1956.

Field training in Geological Survey under Geological Survey of India, 1949-50.

EXPERIENCE

Lecturer-Reader-Professor, Dept. of Geology,
Gauhati University 1950 to 1979.

Dean of Faculty of Sciences

Vice-Chancellor, GU, 1979-86.

Emeritus Professor, GU.

Past-President of Assam Science Society.

Part time-honorary Director, Institute of Advance Study in
Science & Technology, Guwahati.

RESEARCH

- Published a number of research paper on geology of Assam in different Scientific Journals.
- Ten research scholars received PhD degree of GU working and doing research under my supervision.
- Under Cultural-Exchange Scheme between Govt. of India and Poland, I attend the Geological Institute of Warsaw University and Geology Dept. of Cracow University, Poland for a month in 1977.

TERM MEMBER OF THE FOLLOWING ORGANISATIONS

1. United States Education Foundation in India (USEFI)- selection committee.
2. Indian Institute of Science, Bangalore- Board of Management.
3. Tezpur Central University-BOM.
4. North Eastern Hill University, Shillong-Ex. Com.
5. Manipur University, Imphal-BOM.
6. Association of Commonwealth Universities-ACU Council Member.

HISTORY OF THE IASST: MY ASSOCIATION WITH THE INSTITUTE

PROFESSOR JYOTIPRASAD MEDHI

A society called Guwahati Science Society was born on February 13, 1953. It was named Assam Science Society on November 19, 1956. This was the only regional society of its kind in India. It was through the initiative of the Society, the plan for establishment of an Institution in the name of Institute of Advanced Study in Science & Technology was taken by the Assam Science Society. Myself (Dr. J. Medhi) was the president of



of the Society in 1979 and Dr. Anil Kumar Goswami was the Secretary and Late Dr. Binoy Kumar Tamuly was the Assistant General Secretary then. Most of the Science Faculties of Gauhati University and Cotton College took active part in the Society. Some of the active workers were Late Binoy Kumar Tamuli, Late Harish Kumar Goswami, Late Pratul C. Goswami, Late Narendra Nath Siddhanta, Dr. Minodhar Borthakur and Dr. Jamini Mohan Choudhury, Dr. Bhumidhar Choudhury, to name a few.

The Institute was formally inaugurated on 03 November, 1979 by a renowned British scientist Dr. Dorothy Mary Crowfoot Hodgkin, Nobel Laureate in Chemistry. It was then under the aegis of the Assam Science Society.

The first Honorary Director was Dr. Jamini Mohan Choudhury and I was (Dr. J. Medhi (1985-87) was the second Honorary Director.

The Institute started, at first, with a Division of Mathematical Sciences.

The members of the Assam Science Society and those associated with the Institute left no stone unturned to get approval of the Department of Science & Technology (DST) of the Govt. of India. The Mathematics

Division of the Institute was finally approved and the Division was sponsored by the DST, Govt. of India. Then after some time, **the Institute of Advanced Study in Science & Technology** came to be sponsored by the DST, Govt. of India.

Here, it needs mention that the then Head of the DST, Govt. of India (Late) Dr. B. Devdas Acharyya, a reputed Mathematician, took interest in the matter, visited the Institute in its initial state and impressed upon the DST, that Assam certainly deserves such as Institute and that DST should take over the Institute.

Many other important personalities visited the Institute and finally the building and other infrastructures etc. came up in handed made over by the Govt. of Assam and an Autonomous R&D Institute under the DST, Govt. of India was thus established.

Then, the DST, considered appointment of a regular Director of the Institute. A Selection Committee (SC) was formed for selecting (after interview etc.) a candidate; the SC included 2 (two) very reputed Scientist associated with well known Scientific Association (attached to DST). I was also appointed as a member of the three member Selection Committee meeting in the DST office, New Delhi this was perhaps in recognition to the services I rendered for establishment of the Institute.

Now, IASST has a number of research workers in several areas of Science & Technology.

Myself, I have been associated with the Institute as a Honorary Professor in Mathematics & Statistics Division. A nonagenarian, I have been now publishing research papers (last one in 2013 in a reputed US Journal) and also a research level book in 2014: I have indicated my affiliation to the Institution (as Honorary Professor) in these works, and wish to continue that way.

PROFESSOR JYOTIPRASAD MEDHI {A PROFILE}

Professor JyotiprasadMedhi an **Internationally Renowned** scholar of Mathematics and Statistics with a brilliant academic background, a tireless crusader in establishing a centre of repute for the study of

Mathematics and Statistics in India and a dedicated citizen to its social and academic advancement.

Jyotiprasad earned his Master's degree in Pure Mathematics from the reputed University of Calcutta, with two **Gold Medals** in 1947 (University Gold Medal for standing First in First Class and D.N. Gangopadhyay Gold Medal for securing Record Marks in the subject); earlier in Degree course also he earned two gold medals (Sundmerson Gold Medal awarded by Cotton College, Guwahati & RajaniKanta Barat Gold Medal awarded by Calcutta University).

He obtained Master's degree in Statistics (through Dissertation) from the University of Manchester, UK. Thereafter earned a **Diplome de Langue Francais** from Paris (*avec mention HONORABLE*).

The Doctorate degree (Dr-es-Sc) was awarded to him in 1956 in Probability and Statistics, by the University of Paris in 1956 carried "**TRES HONORABLE**", distinction, being the highest distinction awarded in French awarded in French academic system.

He joined the University of Guwahati as Lecturer in Mathematics in 1949 and rose to Full Professor level in 1963 and retired there from in 1985.

He was invited as Visiting Professor in a number of Universities in Canada and USA. Notwithstanding several distinguished offers of tenure from Universities abroad, he did not leave GU, the State and India. The Department of Statistics, GU, where he worked began drawing international attention in terms of alumni and quality of research.

He continued to carry on excellent research in some interesting aspects of Probability and Statistics. His research papers, published in International Journals, influenced scholars in carrying out **follow-up research in places as distinguished as MIT(Massachusetts Inst. Of Technology) USA, University of Toronto, Canada** and so on. Some Ph.D thesis at those Universities has significant references to the research done by him and his research students here.

A paper by a researcher under him published in a Local Journal, J. Assam Science Society, Guwahati, is cited in a paper in a reputed US Journal in 1960S by a scholar from MIT, USA.

He has authored **three** advanced level text books for students and professionals. His Books have been published abroad by **International Publishers** of repute (such as Academic Press Inc. USA, J. Wiley & Sons, Inc. USA and New Age Sc. Ltd., UK).

The books have run into a number of editions; one book (**Stochastic Processes**) published by J. Wiley & sons, UK in 1982 and already 3 (three) editions and the fourth edition is being readied.

Another book (**Stochastic Models in Queuing Theory**) published in 1991 by the Publishing giant Academic Press, Inc., U.S.A. has got a 2nd Edition in 2003.

The Third Book (**Statistical Methods**), published in UK and India has run into 2nd Edition. A new (3rd) edition is under preparation (is in final stage).

These books are used **throughout the World** (Europe, USA, Canada, Australia, and so on) by students of advanced level as well as by research students and Professionals and also in Russia, Japan, S. Korea by Researchers in these subject areas.

Book Reviews in International Journals have very highly **recommended** these books.

It is a matter of great honour that (Professor Erol Gelenbe, a distinguished Chair Holder (Denis Gabor, NL Chair), Professor of the well known IMPERIAL COLLEGE, London (ranked number 2 in World Ranking Universities/Institution this year) even made an offer to publish Medhi's **Stochastic Processes** through IMPERIAL COLLEGE PRESS, London (which could not be pursued due to COPY-RIGHT problems).

A nonagenarian, he is still active in research and advanced writing. A research paper of his appeared in 2013 (in a reputed US Journal) and a new book in 2014.

He has also attracted attention of a Corporate Giant, **MOTOROLA, Inc. USA**. In their prestigious IRIDIUM Project (for connecting through phone from any corner of the world to another), they needed Queuing Theory expert.

One of their Senior Functionary, on learning that Medhi was in USA (With his two elder children after serving as Visiting Professor in Canada)

with a tourist visa, contacted him with an offer. The Motorola approached USA Government for an appropriate visa for him (Medhi's) to work as Scientific Consultant in their Head Office in USA. Medhi was happy to be there in that capacity for quite some time; were able to solve of their problems (related to 'Queuing').

He had steadfast dedication for development of the region where he continued to live, in the course of which he used his expertise in conducting a large number of statistical surveys (sponsored by Govt. of Indian Agencies) that have resulted in some social and economic development of the region.

He was President of Indian Science Congress Association (Statistics Section in 1978-79) and President, Indian Society of Probability and Statistics in 1992-94.

He was the First Awardee of National Teacher Award (by K.C. Das Commerce College Trust) in 2007.

His scholarship and devotion have been recognized by some of the reputed Institutions in India like IIT, Guwahati (the only Institution (of a less than 50 years)/ University of India) to come within the first 100 in the LONDON TIMES HIGHER EDUCATION RANKING.

He has been awarded D.Sc. (HonorisCausa) by IIT, Guwahati in 2014; earlier D.Sc. (Honoris Causa) was awarded to him by Tezpur (Central) University in 2001 and Dibrugarh University in 1997.

His biography "Life and Works of J. Medhi" (authored by Dr. C.K. Chetia) has been published in 2007 by VigyanPrasar (An autonomous Institute under Department of Science & Technology, Govt. of India).

Medhi is one of the very few Indians, based in India, whose works (in Science & Technology specially in Mathematical Sciences) have been sought after and published by reputed International Publishers (like J. Wiley & Sons, New York and Academic Press, Inc. Boston). These have made him well known the world over in his chosen field.

Even at this advanced age, Medhi has been academically very active in research and advanced writing, in preparing and presenting invited

papers for International Conferences, reviewing research papers for reputed International Journals, undertaking project work on areas relevant to Govt. and participating in various other activities of like nature and so on.

VISITING ARRANGEMENTS:

- Visiting Professor, University of Montreal, Canada (1967-69);
- Visiting Professor, Mc Master University, Canada (1984);
- Visiting Professor, University of Wisconsin, USA (1985);
- Visiting Scientist, Mc Master University, Canada (1984);
- Visiting Research Fellow, University of Toronto, Canada (1982,1987,1990);
- Visiting Fellow (Exchange Visitor), U.K. (1979); (under British Council Programme);
- Visiting Fellow, Mc Master University, Canada (1993);
- Scientific Consultant, USA (in the R&D Division of the giant Multinational Corporation, MOTOROLA, Inc. AZ, USA (1993).
- **He delivered invited lectures (also lecture series) at a number of Universities in USA, Canada, Britain and France besides some IITs and some Universities in India.**
- On a private visit to China, he delivered a lecture at the MATHEMATICAL Sciences Department of Shanghai University of Science "& Technology, Shanghai, China (at their invitation).

BRIEF HISTORY OF IASST AND MY INVOLVEMENT WITH IT

PROFESSOR K.M. PATHAK

Institute of Advanced Study in Science and Technology (IASST) is a premier scientific research organization in the north-east region, conceived and nurtured by the Assam Science Society in its initial years. The institute was inaugurated by Nobel Laureate Dorothy C. Hodgkin on 3rd November, 1979.



As a past president of the IASST, I was deeply involved with IASST from the very beginning. Initially the institute was started with some research departments in an old building belonging to Assam Science Society at Khanapara, Guwahati. Few other departments were in some rented houses near the old building. The departments started at the beginning were:

1. Plasma Physics
2. Life Sciences
3. Mathematics and Statistics
4. Resource Management and Environmental Sciences

Later on, the departments were renamed as:

1. Physical Sciences Division.
2. Life Sciences Division:
 - (a) Biological and Chemical Science Division.
 - (b) Resource Management & Environment Section.
3. Mathematical Sciences & Computation Department.

Since 1991-92, the Government of Assam provided a lump sum annual grant-in-aid to the IASST to carry out research in frontier areas of

Science and Technology. Unfortunately, the payment from the state govt. was not very regular and the amount paid was inadequate as well.

From 1998 onwards Sri Homen Borgohain took initiative and played a key role in developing the IASST and promoting this pioneering Institute in the North-Eastern Region as a centre of excellence. The Institute could overcome many bureaucratic interferences and funding constraints with the help of his guidance and suggestions.

However, the Scientific Community of Assam has been trying its best to establish the IASST as a financially viable research institute with a national character with adequate support from the central govt. This idea has arisen as a national aspiration of the scientists of Assam which was reflected as one of the demands agreed to under clause 7 of the Assam Accord.

A preliminary project document for setting up of an Institute for Advanced Research in Science & Technology as envisaged in the Assam Accord was prepared by the Assam Science Society with the assistance of the Science, Technology & Environment Department, Govt. of Assam and the same was submitted to the Ministry of Science & Technology, Govt. of India. This was examined in the Planning Commission and the State Govt. of Assam was advised by Prof. M.G.K. Menon, the then Scientific Adviser to the Prime Minister and Member, Planning Commission to set up a high level Task Force with the representatives from the Central Agencies such as DAE, DBT, DST, CSIR, UGC, NEC etc. to work out the details of the proposed institute including financial implication for the entire project. The state govt. accordingly constituted a Task Force in 1989 with Sri P.C. Misra, IAS, the then Special Commissioner & Special Secretary to the govt. of Assam, Deptt. of Science, Technology and Environment as the Chairman. The Task Force, after through discussion and interaction had recommended that "... the proposed National Institute to be set up under the Assam Accord should be nucleated around the existing IASST, founded by the Assam Science Society with suitable structural and organizational set up". The Task Force recommendations, accepted by the state govt. were forwarded to the Govt. of India for necessary action on the same. An interministerial meeting on the Task Force Report was held at Technology Bhawan, New Delhi on November 4, 1991 under the aegis of the DST, Govt. of India and the meeting was attended by the representative from the Central Agencies/

Departments like DST/DBT/ICMR, DAE, Planning Commission, Ministry of Home Affairs as well as from the State Govt. of Assam and the IASST.

The major decision's taken in the Inter ministerial meeting were:

- (a) It was recognized that in Assam, scientific activities should be enhanced through the various recommendations in the Task Force Report. To start with, research activities should be grown around the existing IASST. These activities could be eventually enlarged and considered in the form of the Institute for Advanced Research in Science & Technology.
- (b) It was felt that the provision for enhancing the Science & Technology activities through the IASST should be projected by the Assam Govt. in their 8th Five Year Plan with specific emphasis on the need for institutional infrastructure for Science & Technology.
- (c) Agencies such as ICMR, DBT, DRDO as well as DST and Deptt. of Environment could consider supporting scientific programmes in the areas of Oncology, Bio-Sciences, Material Research and Environment and Ecology etc.

After repeated presentations and discussions with the Secretary, DST and other personalities in the Central Govt., ultimately the IASST was taken over by the DST (GoI) on 9th March, 2009. The Secretary, DST visited the Institute in January, 2009 and the Prime Minister announced about taking over of the Institute in the Science Congress at Shillong.

The Central Finance Minister also sanctioned the required budget for the Institute (2009-2010).

Since then, all round development of the IASST has been going on.

It is a pleasure to mention that Late Hiteswar Saikia, the then Chief Minister of Assam allotted to IASST a plot of land, about 60 bighas, at West Boragaon area. The IASST constructed its own building at West Boragaon with the fund received from the State Govt. of Assam. The IASST was shifted to its new campus at West Boragaon in 2004. The then Chief Minister, Hiteswar Saikia, laid the foundation stone of the Academic cum Administrative building in 1995 in the new campus.

In 2004, the road "Bigyan Path" connecting the Institute at the West Boragaon and the High Way (NH 37) was constructed by the then S&T Minister, Dr. Himanta Biswa Sarmah.

VISIT OF THE PRESIDENT OF INDIA

His Excellency the President of India, Dr. A.P.J. Abdul Kalam visited IASST on 31 December, 2004 to interact with the scientists and research workers of the IASST. In his speech to the scientists of IASST, he emphasized on the importance of Biotechnology, Nanotechnology on the National scenario, and urged the scientists of the IASST to take active part in the Nation building process. He emphasized on the full utilization of Natural and Human Resources of the Region to meet the demand of the modern society.

MY INVOLVEMENT WITH IASST

I was an active member of the Assam Science Society since its establishment in 1953 at Guwahati. I was Secretary as well as President of the Assam Science Society. I gave active support for the establishment of IASST at Gauhati. After my retirement from the Tezpur University in 1999, I was appointed as the Honorary Chairman of the IASST from July, 2000 to March, 2009.

- (i) As a Chairman of the IASST, I was to look after overall functioning of the Institute.
- (ii) To chair the important meetings of the IASST.
- (iii) To help development of the IASST as an advanced level Research Institute.

In discharging my responsibilities as the Chairman, I received full support and help from the Directors of the Institute as well as from all the faculty members.

Prof. K.M. Pathak
Ex-VC, Tezpur University &
Ex-Chairman, IASST.

MY ASSOCIATION WITH IASST

PROFESSOR NIRMAL KUMAR CHAUDHURY

My association with the Institute of Advanced Study in Science and Technology, Guwahati began long before I had the honour of holding the position of the Chairman of its council from 29th July 1997 to 29th April 2000 in fact, I was present in the very meeting of the Assam Science Society in which the birth of the Institute was announced. It is a brain-child of Dr. Anil Goswami, the indomitable crusader of Science movement in Assam, who also wonderfully got a piece of land with a big house (built for an exhibition) in Khanapara area of the city from the Assam Government for the Science Society. The Institute started functioning from this house.



I established close association with the Institute during my tenure as Director of Technical Education, Assam from March 1986 to January 1991. For the purpose of technical manpower development I arranged funds from the state government to enable the institute to conduct an academic programme for Post-graduate Diploma in Computer Application. Prof. Dr. Pratul Goswami was the Director of the institute at that time. I also used to take interest in its research projects and I continued to do so more when I became the Vice Chancellor of Gauhati University in January 1991. The project on Indoor Rearing of Muga Silkworm was of particular interest to me, while the works on Plasma Physics, Herbal Medicine and Environmental Science also drew my attention.

I became directly associated with the Institute when I was made the Chairman of Council for one term. Prof. Kamal Barua, Former Rector of Dibrugarh University, was the Director then. By that time the research activities of the Institute had grown so much that to provide the requisite space a reinforced concrete building had to be built in the Khanapara land

and a nearby building had to be taken on rent. In the mean time the Assam Government, at the initiative of the then Chief Minister Hiteswar Saikia, had allotted the plot of land where the Institute is situated now. The Institute was then running with the help of financial grant from the State Government and whatever project grants it got from Central Ministries and other sources. The State Government had some plan for providing building grant for the new site and had accordingly constituted a high power Construction Committee. However, the building grant did not materialize and even the maintenance grant was found inadequate. It was then decided to try for grants from the Government of India (Gol), the Department of Science and Technology (DST) of which encouraged the Institute with research grants. Finally, through the Assam Government request was made to Gol to take over the Institute. We in a delegation, comprising the Chairman, the Director and the Registrar, visited New Delhi and met the Minister of State (MoS) and the Secretary, Ministry of Science and Technology and also other officers. Prof. Alagh, MoS was positive in his response and the then Secretary of the Ministry was highly supportive to our request. In this connection, I must place on record my appreciation of the untiring efforts made by Dr. Mahanta Kalita, the Registrar.

The first result of our request to Gol was a grant for construction of buildings on the Institute's land at Paschim Boragaon area of the city. Since the grant came directly to the Institute it was decided to start the construction ourselves. Accordingly, the Institute constituted a Building and Works Committee, as in IIT Guwahati and requested the Assam Government to dissolve the construction committee meant for expected grants from it.

The institute appointed one Project Engineer and started the construction works. My term as the Chairman of Council ended before the construction was completed, but I continued to help the new Chairman, Prof. K.M. Pathak, in completing the same.

Once the building grant was received I was sure that the institute would be taken over by Gol, although we had to wait for some more time to see that happen.

BRIEF BIO-DATA

Name	–	Nirmal Kumar Chaudhury
Date of Birth	–	29 May, 1936
Place of birth	–	Nalbari District, Assam.

EDUCATION

B.Sc. (Hons. in Physics), Gauhati University, 1954.

B.Sc. (Civil Engg.), BHU, 1960

M.Sc. Tech. in structural Engg., Manchester University, 1964.

PhD in structural Engg., Manchester University 1966.

EXPERIENCE

Professor, Civil Engg., Assam Engg. College.

Principal, Regional Engg. College, Silchar.

Director of Technical Education, Assam.

Vice-Chancellor, Gauhati University

MY MEMORABLE DAYS AT THE IASST

(From 04.12.1982 to 31.03.1991)

PROFESSOR SARBESWAR BUJARBARUA

I am now extremely happy to see that there are a number of research programmes namely 1) Basic and Applied Plasma Physics, 2) Advanced Material Science, 3) Bio-Diversity and Eco-System Research, 4) Traditional Knowledge based drug development and delivery and 5) Mathematical and Computational Sciences at the Institute of Advanced Study in Science and Technology (IASST), Guwahati, doing commendable research work and IASST has become a premier National Research Institute under the Department of Science and Technology, Govt of India. But the journey of IASST to this stage was not always very smooth specially the initial period of its journey. I, being the first full time scientist to have joined IASST on 4th of December, 1982 to start a plasma physics division, had gone through the most difficult days that the IASST saw in its life time till today. In this short write-up, I would like to narrate, how I joined IASST, what situations I faced after my joining IASST and my scientific and other contributions towards the development of research at IASST until I left it in March, 1991



At the time of establishment of the IASST by the Assam Science Society in the year 1979, I was in Germany doing my post-doctoral research in theoretical plasma physics. After coming back from Germany in March, 1981 to join my permanent post of lecturer ship at the Dibrugarh University, I came to know about the establishment of IASST. The news of the establishment of a research institute at Guwahati to do advanced level research delighted me very much at that time, because having worked in a national research institute viz. Physical Research Laboratory, Ahmedabad for my Ph.D. degree from 1972 to 1976, I knew the good research culture of

such an institute. Also I felt at that time that the IASST once developed, would be the first of its kind to pursue fundamental research in the entire NE region. In those days, I was very active in plasma research and I strongly felt that people like us need to come forward to start basic research in plasma physics and in other important branches of science at the IASST for sustenance and future development of the institute. However, the task of starting a research division at IASST was rather difficult as I came to know that IASST did not have proper fund as well as infrastructure to start any meaningful research. The activity of the institute at that time was mainly confined to organizing some scientific lectures once in a while. Nevertheless, I made up my mind to take a risk and to join IASST if given a chance. I discussed the matter of starting a plasma physics division with some of the council members of IASST viz. late Prof. Binoy Kr. Tamuli and others. Prof Tamuli encouraged me in this regard and he suggested me to send a proposal to the then Honourary Director of IASST, Prof Jamini Choudhury (who was also the Vice Chancellor of Gauhati University at that time) indicating my eagerness to join IASST as a full time scientist to start a plasma physics division. Accordingly I submitted my proposal to the Director, IASST towards the end of 1981.

Around the same time, I also wrote a theoretical research project entitled "Theory of Double Layers in Space" and submitted the same to Indian Space Research Organization (ISRO) through Dibrugarh University (DU). The project was for a period of three years incorporating therein the positions of one Research Associate, two Research Fellows and one Office Assistant besides some expenditure like travel, books and journal etc. The project was sanctioned by ISRO and the first year's fund of the project was received by DU in about middle of 1982. Anticipating my appointment at IASST within a short time, I decided not to start the project at DU and to get it transferred to IASST once I join there.

In August, 1982, I saw an advertisement in the Assam Tribune asking application from interested scientists for appointment at IASST as a Fellow for a period of one year only on a consolidated salary of Rs. 2000.00 per month, in one of the several research areas like Material Science, Electronics, Bio-Science, Theoretical Physics etc. The essential qualification for the post was several years' of outstanding research work in the subject together with leadership quality to start a research division at the IASST.

Seeing the advertisement, I immediately sent my application with my detailed bio-data to the then Secretary, IASST, Dr. Anil Kr. Goswami. After sending my application I was somewhat confident of getting the post and therefore I prepared my mind to leave DU and to join IASST. At that time Dr. Joyanti Chutia, who was my classmate in our B.Sc. (Honours) classes in Cotton College, was working as a Post-Doctoral Fellow in Solid State Physics in the same department. One day, while telling her about my possibility of joining IASST, she expressed her keen interest to work in plasma physics and requested me to provide her an opportunity to work at the IASST.

In the month of November, 1982 I received a letter from the Secretary, IASST calling me for an interview for the said post. After a few days, I was interviewed and in the second half of November, 1982, I got the appointment letter, appointing me temporarily as a Fellow at IASST on a consolidated salary of Rs. 2000.00 per month for a period of one year only.

After receiving the appointment letter, I resigned from my permanent post of Recturership at the Dibrugarh University and joined IASST on the 4th December, 1982, leaving my wife Dr. Deepali Bujarbarua, who was at that time a lecturer of D.H.S.K. College, Dibrugarh and my one year old daughter at Dibrugarh. Before joining IASST, I brought a letter from the Registrar, Dibrugarh University stating that DU authorities had no objection to the transfer of my ISRO project from DU to IASST. On the first day of my joining i.e. 4th December, 1982, I went to the Assam Science Society (ASS) office housed at the old Assam type building of the Anthropology Department of Cotton College and submitted my joining report to the Secretary, IASST (remember IASST was directly under ASS at that time). The same day, I also wrote a letter to the ISRO through the Secretary, IASST, Dr. A. K. Goswami, along with the no objection letter from DU authorities, requesting ISRO to transfer my project from DU to IASST. As there was no accommodation for doing research at IASST at the time of my joining, I kept going to the ASS office every day, writing letters to the well-known plasma physicists of the country like Prof P.K. Kaw (the then Director of Plasma Physics Program (PPP), which later on became Institute for Plasma Research (IPR), Gandhinagar), my Ph.D. supervisor Prof. Abhijit Sen of PPP, Prof. A.C. Das of Physical Research Laboratory (PRL), Ahmedabad and others informing them about my new position and requesting them to help me in my new endeavor of starting a plasma physics division at IASST.

After about a week of my joining IASST, Prof. B.K. Tamuli, the then Head of Mathematics Department of Gauhati University made some accommodation available to me in a room in his Deptt. to do my theoretical research work. I started my research in that room with my part-time Ph.D. student Mr. S.N. Sarma who was a lecturer of M.C. College, Barpeta and with my research collaborator, Prof. M. Nambu of Kyushu University, Japan. I had many personal books on physics, mathematics and plasma physics. Moreover, I brought from Germany a large number of reprints of research papers on topics of my research interest together with a small type writer. With the help of these, we could carry out our research on nonlinear waves viz. Solitons and Double Layers and on Plasma Maser Effect. Within a month of my joining IASST, we wrote two research papers and submitted to standard international journals for publication. It goes without saying that in the absence of an Office Assistant, I had to type the research papers and other necessary typing works in my type writer myself (remember, in those days there was no computer facilities for typing). Anticipating that my ISRO project would be transferred to IASST shortly, we put an advertisement in Assam Tribune in January, 1983 for the posts of one Research Associate, two Research Fellows and one Office Assistant. We received many applications for the posts but we could not hold the interviews for the posts immediately because of the delay in the transfer of the project.

In March, 1983, IASST authorities arranged some accommodation in six rooms in an old and abandoned Assam type house of the Anatomy Department of the College of Veterinary Sciences, Assam Agricultural University at Khanapara, Guwahati to carry out our research activities. Shri Umesh Deka, a temporary helper who joined IASST before me was attached to me for our various services.

In the same month, I received a letter from Prof. P.K. Kaw wherein he suggested that along with theoretical research work, I should consider setting up of a small experimental group dealing with experiments in basic plasma physics. He further added, "For this you will have to utilize the services of some reasonably good experimental physicist who is interested in settling down in Assam. Such a physicist could easily be trained in PPP if one could identify the person". After receiving Prof. P.K. Kaw's letter suggesting me to identify an experimental physicist who could take up training in PPP in experimental plasma physics, the first name that came

to my mind was that of Dr. Joyanti Chutia who requested me earlier to provide her an opportunity to work at IASST, I informed Dr. Chutia who was then stationed at Dibrugarh about the proposal. She agreed to my proposal and came down to Guwahati, and accordingly I made a request to Prof. Kaw to provide her an opportunity to work at PPP, and also to give her some financial support during her stay at PPP as IASST did not have any fund at that time for such a purpose. Prof. Kaw consented to my proposal and provided her financial support for six months. Accordingly Dr. Chutia joined PPP in November, 1983 for her research training.

Meanwhile, after my ISRO project was transferred to IASST, Mr. Prabodh Deka was appointed in the project in June, 1983, as Office Assistant, Mr. Kalyan Sindhu Goswami as Research Fellow in September, 1983, Dr. M.K. Kalita as Research Associate in February, 1984 and Mrs. Sushmita Sutraddhar was appointed as Research Fellow in June, 1984.

Realizing that to start a reasonably good group of plasma physics, we needed more fund and therefore in June, 1983, I wrote a detailed research proposal covering both theoretical and experimental plasma program and had incorporated therein a few faculty positions (viz. Professor, Associate Professor and Assistant Professor) and some technical staff with provisions for laboratory equipment and other necessary facilities in order to support the first research division at IASST viz. the Plasma Physics Division. The proposal named Basic Research in Plasma Physics (BRPP) was submitted to the Department of Science Technology and Environment (DSTE), Govt. of Assam through IASST and the same was sanctioned by the DSTE in March, 1984 with a total amount of more than 13 lakh for a period of five years. After getting the approval, I was appointed, in March, 1984, as an Associate Professor and Project Director to supervise the overall activities of the division. As the six months training of Dr. Chutia at PPP was nearing completion, I sent a proposal to the Director, IASST to create a temporary position of a Research Associate in the BRPP project (which was not there in the original proposal), and got his approval. Thus Dr. Chutia was appointed temporarily at IASST as a Research Associate in July, 1984 and in the same month she was again sent to join PPP for a period of one year for her further research training.

The first year of the BRPP project which started from 1st April, 1984 went very smoothly and we published more than 10 research papers in

standard international journals during the first year. But the problem started in the second year starting from April, 1985 when our proposal to start experimental plasma research was cut down by DST, Govt. of Assam. Meanwhile, Dr. Chutia who returned from PPP in February, 1985 was continuing in the capacity of a Research Associate, but was not able to do any experimental work because of the prevailing situation. Under such a hard pressed condition, I requested Prof. Kaw to intervene in the matter which Prof. Kaw so kindly agreed and in his letter of November 1985, written to the DSTE, he strongly advocated the necessity to start the experimental programme in plasma physics at the IASST and urged upon the Govt. to sanction the experimental part of the BRPP project. He further suggested that the experimental programme may be allowed to start under the supervision of a monitoring committee comprising of Prof. Y. C. Saxena of IPR, Dr. H.C. Pant of BARC and Prof. V. K. Tripathi of IIT, Delhi. The Govt. of Assam agreed to Prof. Kaw's suggestion and the Review and Monitoring committee met for the first time at Guwahati on 09.02.1986. The committee recommended to start the experimental programme and enhancement of fund allocation from Rs. 13 lakh to over Rs. 16 lakh for a period of 5 years. After that in September 1986, Dr. Joyanti Chutia and Dr. S.N. Sarma were appointed as Assistant Professor in the plasma experiment and theory group respectively and Mr. Debojyoti Misra and Mr. Mukut Deka were appointed as Technical Assistant and Laboratory Assistant respectively under the BRPP project. Besides that, we also purchased plasma laboratory equipment and laboratory furniture worth Rs. 8 lakh within the next two years under the BRPP project. Moreover, Prof. Kaw had very kindly donated us a plasma chamber from his laboratory in order to immediately start our plasma experimental program. That is how I started the plasma physics division at the IASST. I may mention here that we were able to publish a large number of research papers in theoretical areas although the pace of experimental work was quite slow for the first few years. In the year 1987, another division of Bio-Sciences was started at IASST by Dr. Pratul Goswami, the then Director of IASST. After successful completion of my first ISRO project viz. "Theory of Double Layers in Space", another ISRO project entitled "Plasma Maser Effect in Space Plasma" was sanctioned to me by ISRO in the year 1988 which was started at the IASST in the year 1989. Under this new project Dr. K.S. Goswami joined as a Research Scientist and Mrs. S. Sutradhar and Mr. B. K. Saikia joined as Research Fellow. Again,

after the resignation of Mr. Debojyoti Misra and Mr. Mukut Deka from the BRPP project, Mr. Pratul Deka joined in the same project as a Laboratory Assistant in the year 1988. In January, 1989, the plasma physics division moved to a new building constructed by Assam Science Society adjacent to the original permanent building of Assam Science Society at Jawaharnagar, Khanapara, Guwahati.

The five years term of BRPP was to be over in March, 1989 and on my insistence, the DSTE, Govt of Assam had constituted a four member Review Committee. Two members from the committee viz. Prof. S.N. Sengupta of SINP, Kolkata and Prof. Y.C.Saxena of IPR, Gandhinagar attended a Review Committee meeting held at the IASST on 29.09.1988. The committee was much satisfied with the quality and quantum of work done and recommended an annual grant of Rs. 8.00 lakh for the continuation of the plasma division. The committee on a long term basis had further recommended that "Assam Govt. may plan for establishment of a Centre of Plasma Physics as an autonomous Institute with the present group under Dr. S. Bujarbarua as the core group. Dr. S. Bujarbarua may be asked to submit a detailed proposal towards this."

Accordingly I submitted a "Proposal for Establishment of Centre of Plasma Physics" to the Govt. of Assam in March, 1989. In the meantime the Director, IASST terminated the services of the staff members of BRPP project viz. myself, Dr. J. Chutia, Dr. S.N. Sarma and Mr. PratulDeka on 3rd March, 1989, considering the fact that the term of the BRPP would expire on 31.03.1989. However, in accordance with the Review Committee recommendation, Govt. of Assam sanctioned the following year's fund of the BRPP starting from April, 1989, on 18.03.1989. Thereafter the BRPP members were reinstated on 12.04.1989. Dr. S. N. Sarma, however, resigned from IASST immediately after that and joined in his permanent position of lecturer ship at M.C.College Barpeta.

The proposal for the establishment of Centre of Plasma Physics was lying with the Assam Govt. for a long time. Finally with the active persuasion of the then Secretary and Commissioner to the Govt. of Assam, Department of Education, late Ashok Saikia for over a year, the Centre of Plasma Physics was ultimately established as an Autonomous Research Institute under the Education Department by an Executive Committee decision (equivalent to cabinet decision in an elected Govt.) in March, 1991, and I had to leave

IASST to take the overall charge of the newly born institute on 1st April, 1991. Along with me, Dr. K.S. Goswami, Ms. S. Sutradhar, Mr. B.K. Saikia, Mr. Pratul Kr. Deka and a temporary helper Mr. DwijenKalita joined Centre of Plasma Physics at the same time.

During my eight and half years stay at the IASST, I wrote about 45 research papers with my co-workers and published them in standard international journals, besides executing 3 research projects successfully. Thus I was responsible for generating most of the fund for the plasma physics division at the IASST. Also, besides the two regular research scholars viz. Mr. K. S. Goswami and Mrs. S. Sutradhar, three other part time scholars viz. Mr. S. N. Sarma, Mr. R. N. Khaoundand, Mr. Monojyoti Dey got their Ph.D. degree under my supervision during my stay at the IASST. I was also conferred the Vikram Sarabhai National award in 1989 for my outstanding contribution in the field of Space Sciences and the Doctor of Science (D.Sc.) degree for my Thesis entitled "Theory of Kinetic Solitons and Double Layers", for the first time by the Gauhati University in February, 1991, while I was at the IASST.

Over and above my academic activities, I was also involved in other developmental activities of IASST. I was a member of the Governing Council, the highest policy making body of IASST, from 1985 to 1988 as a representative of the academic staff of IASST.

I also attended the meetings of the Governing Council held before 1985 as a Special Invitee. Besides, I was a member of the Administrative Committee and Finance Committee of the IASST for most of the time of my stay at the IASST. In the year 1985, the Governing Council of the IASST constituted a committee to formulate a detailed proposal for the overall development of the IASST to be submitted for funding to the Govt. of Assam. The Chairman of the committee was Prof K.M. Pathak of GU., with myself as the convener of the committee and Prof. H.L.Duora of GU, and few others as the members. As the convener of the committee, I wrote to active scientists working in different Universities and institutions of Assam to send their research proposals to me for inclusion in our proposed scheme. I received a number of such proposals from different scientists, but we could select only two such proposals to be included in our scheme- one on Polymer Chemistry submitted by Prof. N.N. Das of Dibrugarh University and the other on Solid State Physics submitted by Dr. J. Hatibarua

of GU. I wrote a detailed scheme including three research divisions' viz. plasma physics, polymer chemistry and solid state physics. The total fund requirement of the scheme was over 11 crore of rupees for the first five years which included salaries of both administrative and scientific staff, laboratory equipment, books and journals, buildings etc. The scheme was submitted to the Department of Science, Technology and Environment, Govt of Assam for funding in 1986 but no positive response from the Govt. was received in this regard. Moreover, I visited different locations like Gotanagar area near Maligaon and near Narengi area of Guwahati, as a member of the IASST team, to look for the permanent site of IASST: but both the sites were later on abandoned for various reasons.

With these words, I would like to conclude my write-up, wishing IASST a very bright future in days to come.

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MY ASSOCIATION WITH THE INSTITUTE OF ADVANCE STUDY IN SCIENCE AND TECHNOLOGY (IASST), GUWAHATI

PROFESSOR K.C. BARUA

The Institute of Advance Study in Science and Technology was the brain child of the Assam Science Society. I was associated with the IASST as a nominee to the Council from Dibrugarh University for a few years. The IASST was housed in a part of the building belonging to the Assam Science Society at Khanapara. Cardboard partitions were used to accommodate the Offices, laboratories etc., only the Plasma Physics section had some sort of separate house with two to three rooms. All the research activities were carried out in these buildings.



Prof. K.M. Pathak and Late Prof. B.M. Das requested me to join the Institute as a Director and Dr. Joyanti Chutia and Dr. Mahanta Kalita persuaded me to come and help the institute, as according to them the Institute had been passing through a crucial State! I could not turn down the requests and decided to join the institute for one to two years only. I realized that the scientific staff was competent and very hard working. They came from different colleges leaving aside their permanent jobs in the interest of doing some scientific work and contribute towards the development of scientific research in the state. This was something I liked the most.

During my short tenure, I devoted my full time to streamline the administration, such as drafting of the "Memorandum of Association, ISST", regular payment of salaries, employees' benefits and assurance of annual grants from the State Government, encouraging research activities etc. During this period we submitted a proposal through the Govt. of Assam to the Secretary, Department of Science and Technology, Govt. of India (DST,

Gol) to support IASST under the 9th plan period. A Central Govt. team headed by the Secretary, DST visited IASST in April 1998 and interacted with the scientists. The Secretary DST, Govt. of India also had a discussion with the Chief Secretary, Govt. of Assam regarding the proposal sent to the DST.

A Delegation led by Dr. Nirmal Kumar Choudhury, Chairman, IASST, I and a few members of the IASST went to Delhi for a discussion with the Secretary, DST, Govt. of India about the sanction of grants to the institute. The DST (Gol) was kind enough to sanction a grant of Rs. 10.86 crore for the construction of building component in its new campus. During this period, four major research projects in four branches of IASST were funded by the DST (Gol) for the development of infrastructure as well as research facilities.

We, without any loss of time took all the necessary steps to start the earth filling at the site, employed architecture for the preparation of plans for the IASST, etc. However, at this stage on expiry of my lien period I had to leave the IASST to join Dibrugarh University.

Now I am happy that the dream of the Assam Science Society has been materialized and the Institute has been taken over by the DST (Gol) and it has own permanent campus with all the necessary facilities to carry out high standard of scientific research. I wish that the younger generation would avail these facilities and work hard for the enhancement of knowledge and create a scientific atmosphere so that the Institute grows further and becomes a leading institute of India.

Dr. K.C. Barua

Former Director, IASST and
Retired Professor of Physics,
Dibrugarh University, Assam.

HISTORY OF GROWTH AND DEVELOPMENT OF THE INSTITUTE OF ADVANCED STUDY IN SCIENCE AND TECHNOLOGY, GUWAHATI

DR. MAHANTA KR. KALITA

Ex-Registrar, IASST

The scientific community of Assam had long been demanding institutional facilities for carrying out and sustaining high quality research in emerging areas of basic and applied sciences which will have significant bearing on the resources and potentialities of the state. Realizing this aspiration of the scientific community, the Assam Science Society, the scientific academy of the state, adopted a resolution in 1959 for setting up a fundamental research laboratory in Guwahati with adequate facilities for carrying out advanced research in basic and applied sciences. However, it took a couple of decades for the resolution to be materialized in 1979 with the establishment of a research institute named 'Institute of Advanced Study in Science and Technology (IASST)'. The Assam Science Society constituted a governing council for the management of the institute nominating Prof. Jamini Mohan Choudhury, then Vice-Chancellor of Gauhati University and Prof. Anil Kumar Goswami, then Professor of Physics, Cotton College, as its Director (Honorary) and Secretary (Honorary) respectively. The idea of setting up a research institute in Guwahati had been approved in principle by the State Government of Assam providing an annual grant of Rs. 1 lakh only to the institute since 1980 for its management from the Education Department, Govt. of Assam. The state government also allotted a plot of land measuring 16 (sixteen) Bighas at Narengi, Guwahati, but the land came to be encroached by some people due to inability of the institute to secure the occupation of the same because of its financial constraint.



Thanks to the sincere efforts made by Prof. A.K. Goswami, the IASST was graciously inaugurated by Prof. Dorothy C. Hodgkin, the Noble Laureate, on the 3rd of November, 1979. A seminar on "Molecular Structure and Biological Functions" was also held to mark the occasion.

At the initial stage due to lack of infrastructural facility the institute had to get its research projects conducted through some other institutions. In 1982, Dr. Sarbewar Bujarbarua, a Plasma Physicist and then Lecturer of Physics, Dibrugarh University hinted to Prof. A.K. Goswami about his desire to be a part of this budding institute and appreciating his gesture, Prof. Goswami told him that the institute would be glad to have him as a regular faculty. But it could not be materialized immediately due to financial constraint of the institute. Prof. Goswami, therefore, suggested that some donation be collected to enable the institute to appoint Dr. Bujarbarua as a regular faculty. Responding to his suggestion, I, as a member of Assam Science Society, collected an amount of Rs. 3000.00 (Rupees three thousand) only as donation from some benevolent people of Nalbari (at that time I was a lecturer of Nalbari College) and handed over the same to Prof. Goswami. Dr. Bujarbarua was then appointed as an Assistant Professor at the IASST. Thus, towards the fag end of 1982, formal research activities in theoretical Plasma Physics were initiated at the institute by a small group of research workers headed by Dr. Bujarbarua in a assam type house benevolently provided by the authority of the Assam Agricultural University at Khanapara campus, with the financial assistance from the Indian Space Research Organisation (ISRO), Govt. of India under a project titled "Theory of Double Layers in space" of which Dr. Bujarbarua was the Principal Investigator. With the joining of Dr. Bujarbarua as a regular faculty, a new era had been initiated in the growth and development of the institute. On 4th February, 1984, I also joined the IASST as a Research Scientist under the said project. Subsequently, as advised by Shri BhaskarBarua, then Commissioner, Planning & Development, Govt. of Assam, a delegation consisting of Dr. S. Bujarbarua, Dr. (MS) Joyanti Chutia, then Lecturer of Digboi College and myself called on Hiteswar Saikia, then Honourable Chief Minister of Assam and requested him to provide fund for carryingout fundamental research in both theoretical and experimental Plasma Physics. Accordingly in 1986, the Govt. of Assam provided fund under a project titled "Basic Research in Plasma Physics" to the IASST to pursue basic

research in Plasma Physics. Dr. S. Bujarbarua was then elevated to the position of Associate Professor and Dr. (MS) Joyanti Chutia and Dr. Satyendra Nath Sarma, then Lecturer of M.C. College, Barpeta were appointed as Assistant Professors Under the said project. Dr. Chutia was deputed for training on experimental Plasma Physics at the Physical Research Laboratory, Ahmadabad and she also attended the Institute of Space and Astronautical Science, Tokyo, Japan, under a fellowship.

In order to cater to the needs of the technical manpower in computer and to provide in house computer facility to the scientists of the institute, a computer centre was set up in 1986 in a big room graciously, provided by the authority of the Assam Agricultural University at Khanapara Campus, with the financial aid of the Department of Electronics, Govt. of India and the State Government of Assam through the kind initiative of Prof. A.K. Goswami. In 1987, the institute was shifted to the premises of the Assam Science Society at Jawaharnagar, Khanapara and subsequently the Computer Centre was also shifted to this premises. Apart from providing technical support to the researchers, the Computer Centre was also engaged in generating trained manpower in computer by imparting computer education and training through different courses of studies, namely, DOACC 'A' level and PGDCA, each of one year duration.

In 1985, the Assam Science Society nominated Prof. J. Medhi, Emeritus Professor of Gauhati University and Prof. C.K. Rajkonwar, then Professor of Veterinary College, under Assam Agricultural University, respectively as the Director (Honorary) and the Secretary (Honorary) of the IASST, succeeding Prof. J.M. Chudhury and Prof. A.K. Goswami respectively on expiry of their term.

The rational aspiration of the Scientific Community of Assam got reflected in the ASSAM ACCORD signed between the Govt. of India, the State Govt. of Assam and the leaders of Assam Movement on 15th August, 1985, with the provision of setting up of an advanced research institute in Science and Technology under the clause 7 of the ASSAM ACCORD. Responding to the invitation of Prof. P.C. Bora, then President of Assam Science Society and Vice-Chancellor, Assam Agricultural University, Prof. M.G.K. Menon, then member of the Planning Commission of India visited the IASST in the early part of April, 1987 and he advised the Assam Science Society to submit a project report for setting up of an advanced research

institute in Science and Technology. Accordingly, a project report prepared by the Assam Science Society was forwarded to the Planning Commission for consider. After examining the report, the Planning Commission advised the Govt. of Assam to constitute a Task Force comprising of academicians, Scientists and administrators to prepare a comprehensive Project Report for setting up an advanced research institute in Science and Technology. The Task Force, constituted by the Govt. of Assam, prepared a comprehensive Project Report through intensive deliberation and recommended that the proposed advanced research institute to be established under the clause 7 of the ASSAM ACCORD be nucleated around the existing 'Institute of Advanced Study in Science and Technology' set up by the Assam Science Society instead of setting up a new institute separately. The recommendations of the Task Force were accepted by the state government and the Task Force Report was then forwarded to the planning commission for necessary action.

In July, 1987, Prof. Pratul Goswami, renowned Biochemist and retired Professor of Guwahati Medical College, joined the IASST as its Director (Honorary) as Prof. Medhi had to leave for America. In September, 1987, I was also shifted to the administrative wing of the institute as its administrative officer to build up the institute in all respects.

On 4th November, 1991, an inter-ministerial meeting on the Task Force Report was held at Technology Bhawan, New Delhi under the aegis of the Department of Science and Technology, DST, Govt. of India at the kind initiative of HiteswarSaikia, then Hon'ble Chief Minister of Assam and P.V. Narsimha Rao, then Hon'ble Prime Minister of India. The Govt. of Assam was represented in the meeting by Sri Jyotirmoy Chakravarty, then Secretary to the Govt. of Assam, Department of Science, Technology and Environment and Shri Dharma KantaSarma, Deputy Secretary of the said Department; While the IASST was represented by Prof. P. Goswami, then Director, IASST along with myself. It was decided in the meeting that the IASST would be funded jointly by both the State Government and the Government of India to upgrade it into a Centre of Excellence in some selected fields of Science and Technology. Accordingly, the IASST was included in the plan budget of the Department of Science, Technology and Environment, Govt. of Assam in 1991-92 and since then the IASST has been provided recurring grant from the plan budget of the said Department. As

a follow up action of the said meeting, the central agencies like DST, Department of Biotechnology and Department of Environment and Forests, also began to provide financial assistance to the institute under certain specific projects for development of infrastructure like scientific equipments as well as generation of manpower in different emerging areas of Science and Technology.

Meanwhile, the Memorandum of Association, Rules & Regulation and Bye-laws of the institute were approved by the IASST Council and in 1991, with the formal approval of the Assam Science Society, the IASST was registered as a separate organization under Societies Registration Act (xxi of 1860). We are indebted to Prof. Jamini Mohan Choudhury, Founder Director, IASST for his immense contribution in preparing the Memorandum of Association, Rules & Regulations and Bye-laws of the institute. We offer thanks and gratitude to Dr. Bhabani Kanta Sarma, former Associate Professor of B.Barooah College, Guwahati, for drawing the design of the logo of the IASST.

My sustained efforts resulted in allotment of a plot of land measuring 60 (sixty) Bighas by the State Government of Assam at Paschim Boragaon in greater Guwahati in 1993. We have to acknowledge with gratitude the help extended by a number of distinguished persons for getting the said plot of land allotted by the State Government. Initially, we submitted a proposal to Shri John Ingti Kathar, then D.C. of Kamrup District, requesting him to allot 300 (three hundred) Bighas of land in greater Guwahati to build up the campus of the institute and I explained to him the aims and objectives of the institute. The D.C. gave a patient hearing and assured to look into the matter favourably. Accordingly, he asked the settlement officer, Guwahati to prepare a proposal for 100 (one hundred) bighas of land to be forwarded to the Revenue Department, Govt. of Assam for allotment to the IASST. Shri Jajna Dutta Lahkar, then Assistant Settlement Officer, Guwahati, helped immensely in searching out a suitable plot of land for this purpose. The Deputy Commissioner then forwarded to the State Government a proposal for allotment of a plot of land measuring 100 (One Hundred) bighas at Paschim Boragaon in favour of the IASST. In the mean time, on our invitation Shri D.K. Gangopadhyay, then Commissioner, Revenue Department, Govt. of Assam, visited the Institute and he was apprised of our request already made to the Deputy Commission, Kamrup

for building up its campus. Later on, when I accompanied by Shri M.C. Barna, then Finance and Accounts Officer, IASST went to see Shri D.K. Gangopadhyay at his office chamber, he told us that a note had been prepared to allot a plot of land to the IASST and he also advised that it would be better if a delegation from the institute call on the Hon'ble Revenue Minister, Assam in this regard. Accordingly, in February, 1993, a delegation comprising of Prof. S.D. Gogoi, then Chairman of the Council of IASST and Ex-Vice-Chancellor, Dibrugarh University, Prof. P. Goswami and I called on Mukut Sarma, then Hon'ble Revenue Minister, Assam. The Minister then called for the Commissioner of Revenue, Shri Gangopadhyay, who came up with the concerned file and apprised the Minister of the proposal prepared for allotting a plot of 60 (sixty) bighas of land to the IASST for building its campus. The Commissioner also opined that there should be atleast one such institute in Guwahati for carrying out advanced research in Science and Technology. The Hon'ble Minister approved the proposal then and there in the presence of the delegation. Accordingly, a 60 bighas plot of land was allotted in 1993 and handed over to the IASST. The foundation stone of its building was laid by the then Hon'ble Chief Minister Hiteswar Saikia on 8th March, 1995. Prof. P. Goswami played an important role for the growth and development of the institute and was a great source of inspiration for all of us. It was under his guidance that the Life Sciences Division of the institute was started in 1988, and research activities in the areas of medicinal herbs, nutrition, biofertilizer, and muga silk worms were initiated with the financial assistance received from the State Government of Assam under certain projects. It was in this division of the institute that the hitherto prevailing myth of impossibility of rearing muga silk worms indoors was belied through the evolution of a new indoor rearing technique for the first time in the history of muga silk rearing under the guidance of Dr. J.N. Talukdar, then Honorary Professor of IASST. The technique was successfully established both in laboratory and field trials. Subsequently, financial assistance was provided by the DST, Govt. of India to carry out intensive research in muga silk worms and medicinal herbs.

In the Plasma Physics Division of the institute a dedicated and talented group of Plasma Physicists had been built up within a short period of time under the able guidance of Dr. S. Bujarbarua and both theoretical and experimental investigations in the field of plasmas were carried out in this

division. The group of Plasma Physicists was successful in establishing both national and international collaboration with the scientists working in Plasma Physics. To its credit, the institute was able to set up a modern laboratory for studying nonlinear phenomena in Plasmas with the donation of some sophisticated equipments from the Institute of Space and Astronautical Science, Tokyo through the collaboration of Prof. Y. Nakamura of the said institute and the financial assistance from the DST, Govt. of India. Prof. Nakamura was kind enough to visit the IASST several times to guide the scientists working in experimental Plasma Physics. Moreover, Dr. Joyanti Chutia and a few research scholars had been trained up in pursuing experimental research in Plasmas by Prof. Nakamura at his own laboratory in Tokyo.

Dr. S. Bujarbarua was awarded "Vikram Sarabhai Hariom Award" for his contribution in the field of Space Plasmas. However, the theoretical group headed by Dr. Bujarbarua left the institute in 1992 to set up a new institute named "Centre of Plasma Physics".

In 1995, as per decision taken in the inter-ministerial meeting, a major project titled "Development of Plasma Physics Division, IASST" was sanctioned by the DST, Govt. of India. In 1996, Prof. Kamal Chandra Barua, then Professor of Physics, Dibrugarh University, joined for the first time as the full time Director, IASST. Later on, in 2001, Prof. Narendra Nath Dass, then Professor of Chemistry, Dibrugarh University, joined the IASST as its Director and he also started research in Polymer science in 2002. From then onwards, the Plasma Physics Division was renamed as Material Sciences Division covering Plasma Physics and Polymer Science.

In 1990, the Resource Management and Environment Division came into existence with the fund received from the Ministry of Environment and Forests, Govt. of India under a project titled "A study on the impact of oil exploration on the microflora in the rice field soil of Upper Assam" and Prof. L.C. Kagti, then Honorary Professor of IASST, was the Principal Investigator in the said project. Later on, research activities on conversion of soil pollutants into fertilizer through biodegradation was carried out with the fund received from the Ministry of Coal, Govt. of India.

In 1992, the Mathematical Sciences Division was started with the financial assistance received from the DST, Govt. of India under a project

titled "Study of Availability of S&T Manpower in Assam in next 20 years" and Prof. J. Medhi, Emeritus Professor of Gauhati University, was the Principal Investigator in the Project. As per decision of the inter-ministerial meeting a major project for the development of Mathematical Sciences Division was sanctioned by the DST, Govt. of India in 1994. Substantial research in Mathematical and Statistical Sciences has been carried out and the results of the investigations have been published in the journals of national and international repute.

As an academic administrator I had to play a key role in the administration and management of the affairs of the institute including its growth and development since the Director was on honorary/part time basis till 1996 and the Secretary (later redesignated as Registrar) had also been on part-time basis. I had been given the additional charge of the Secretary from May 1992 to March, 1997 and was elevated to the position of Registrar in May, 2000. I also acted as the Director (I/C), IASST from August to December, 2000. In addition to my administrative functions, I also pursued research in theoretical Plasma Physics, guiding two research scholars, who were awarded Ph.D. by the Gauhati University and publishing as many as twenty research papers in the journals of national and international repute. I was also involved in planning and formulating various research projects and liaising with sponsoring agencies to get such projects approved. Although the Govt. of Assam, Department of Science, Technology and Environment provided annual grant for the management of the institute since 1991-92, the amount provided was not adequate for smooth running of the affairs of the institute. As such, we had to look for alternative source of income. Accordingly, in 1998, I prepared a project titled "Upgrading the Institute of Advanced Study in Science and Technology (IASST)" which was submitted by the IASST to the DST, Govt. of India, requesting for funds towards the construction of building complex housing the laboratories and administrative wing of the institute as well as for development of scientific infrastructure for pursuing substantial research in some selected areas of science. The DST approved the project in March, 1999 and sanctioned a grant of Rs. 9.55 crore to the IASST. It is learnt that the IASST was the first non-governmental organization to have received government fund for its building component. It was possible largely because of the keen interest shown by Prof. V.S. Ramamurthy, then Secretary to the DST, Govt. of India in the proper growth and development

of this institute. Dr. B.D. Acharya, then adviser to the DST, Govt. of India also helped a lot in the process of growth and development of the IASST.

The construction works of the building component of the IASST were completed in April, 2004 and the institute was shifted to its own campus in May, 2004. We would like to express our thanks and gratitude to Prof. N.K. Choudhury, renowned structural engineer and former Chairman of the IASST Council for his constant guidance in the process of construction of the building component. We also recall with thanks the contribution of Shri K.S. Lahkar, then Chief Engineer IASST towards construction of the building component. We gratefully acknowledge the constant help and advice rendered by Prof. A.K. Goswami for the growth and development of the institute.

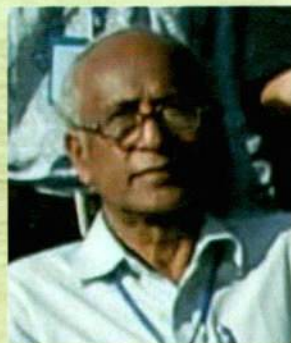
In 2002, a proposal was submitted to the Ministry of Science and Technology, Govt. of India with a request to take over the IASST under the administrative control of the DST, Govt. of India. Subsequently, Prof. K.M. Pathak, then Chairman of the IASST Council, along with me had been to New Delhi to submit a Memorandum to Dr. Manmohan Singh, then the leader of opposition in the Rajya Sabha, requesting him to extend his good offices to get the proposal for taking over of IASST by the DST, Govt. of India, approved by the Ministry of Science and Technology. Accordingly Dr. Singh wrote a letter to then Hon'ble Minister of Science and Technology, Govt. of India, requesting him to consider the proposal favourably. A high level meeting was held on 31st March 2004 at Technology Bhawan under the aegis of the DST, Govt. of India to discuss the proposal submitted by the IASST. The meeting was attended by the representatives of the Government of Assam and the IASST. It was decided in the meeting that the IASST would be taken over by the DST, Govt. of India after taking approval from the concerned ministries. Finally this IASST was formally taken over by the DST, Govt. of India with effect from 9th March, 2009. Now, it is a centrally funded institution. Fund is, therefore, no longer a problem for carrying out substantial research by the scientists of the institute. We only hope, the scientists of the institute shall work hard and put in their sincere efforts and devotion to develop it into a Centre of Excellence in selected areas of Science and Technology.

IN THE IASST

"Hope springs eternal in human breast' and I am burning with the desire that there will be quantum jumps for the glories of the IASST..."

PROFESSOR N. N. DASS

I got the opportunity to serve the Institute of Advanced Study in Science and Technology (IASST) as the Director. The period was from 1st January 2002 to 30th September 2005. It was a wonderful period for my life because I met a batch of dedicated researchers and teachers besides the officers and staff members in the IASST. I did not have to get lost in the files as I found a very efficient man as the Registrar. Dr. Mahanta Chandra Kalita, M.Sc., Ph.D. He was my student when I was in Cotton College. The Engineer was an experienced man Sri Kartabya Singh Lahkar, a close friend of mine. He retired as the Chief Engineer from AGCC Besides, I had the opportunity to get the advice and direction from the members of the Council headed by Professor K. M. Pathak, founder Vice Chancellor, Tezpur University.



So, I was thinking loudly to introduce Polymer Chemistry in the IASST. A Polymer Division, renamed as "Polymer Advanced and Soft Material Sciences now" was introduced in 2002 and Dr. Neelotpal Sen Sarma joined as an Assistant Professor (2002). Soon Dr. Prafulla Chetri joined as a SRF 2004. Since Dr. Sen Sarma and Dr. Chetri were my research students, there was a blissful overlap of the works in the field of research of Dibrugarh University and IASST.

The work of the Mathematical Sciences and Computer Division impressed me. (1) An International Conference and (2) Introduction of Polymer Division caught my imagination.

Therefore, an International Conference on "Recent trends in Cybernetics and System Theory" was held in 2004 (Jan 1-3 JAN) jointly organized by IASST and ISI, Kolkata. The venue was NIPCID. An Emeritus Professor Dwijesh Dutta Majumder from ISI, Kolkata was the Principal Resource Person. The Conference was very successful. So, a Workshop Cybernetics was recommended. Accordingly an International workshop was held on the same topic (Feb26-Mar 2, 2004) jointly organized by IASST and ISI, Kolkata. There were participants from India & abroad.

The institute was at that time at Khanapara, Guwhati 781022 housed in the Assam Science Society building and a nearby building. Professor KM Pathak, was the Chairman of the Council of the IASST and Dr. MK Kalita was the Registrar. The Assam Science Society is the mother of the IASST. I had the opportunity to get the advice and direction from the members of the Council. The collective wisdom of the Council and advice from several well known Professors like Professor Jyoti Prasad Medhi, Professor KM Pathak, Professor Gautam Barua, Professor Nirmal Chowdhury, Professor Anil Goswami, Professor Binoy Tamuli, Professor Balit Dea and scientists from DST, DBT, JNU, BARC, Bose Institute, SINP, the then Assam DST Commissioner TY Das and well wishers of IASST stood me in good stead in running the institute. To look after the construction, there was the "Building Works Committee with Prof. KM Pathak as the Chairman".

Dr. Pratul Chandra Goswami, the Professor of Biochemistry, Gauhati Medical College joined the IASST as its Director in 1987 after his retirement from Gauhati Medical College. The Life Science Division was started next year in the IASST. Soon after, the Department of Plasma Physics, (now named as Plasma process- Theory & Application), was started. A major project "Development of Plasma Physics," IASST was sanctioned by the DST, Gol, in 1995. In this connection the help, guidance and donation of sophisticated equipments of Dr. Y. Nakamura, Institute of Space and Astronautical Science, Japan, must be remembered.

The Resource Management and Environment Division (now named Bio-diversity & Eco-system Research) came into existence in 1990 and Mathematical Sciences Division, (Now known as Computational and Mathematical Sciences), in 1992. After the retirement of Professor P.C. Goswami, Professor Kamal Chandra Barua became the Director (1996-2000)

of the Institute. The Government of Assam allotted a plot of land of 20 acres to IASST at Pschim Boragaon for the Building Complex in 1992 and the DST, Gol sanctioned Rs nine crores and fifty five thousand only under a Project "Upgrading the Institute ". Professor Kamal Chandra Barua was the Director of the IASST, when these Projects were started. There was a gap of couple of years before I joined IASST as its Director. The tenure was from 1st January, 2002 to 30th September, 2005. I was just an instrument time to lead the IASST to its destiny. The construction of the building component was completed in April, 2004 and we took the daunting task of shifting (April-May). Thanks to endeavor and zeal of the academic, non academic administrative staff, IASST was shifted lock, stock and barrel in June, 2004. There was no electricity, no phone line connections in the new building at that time. The lone generator generates not only electricity but also the will power of us to move on. In the same year we invited Dr. APJ Abdul Kalam, President of India through the Chief Minister of Assam, I was thrilled to receive a fax message from the Rashtrapati Bhavan that the President Dr. Kalam would visit our institute on the 26th December, 2004. I could not imagine that the first citizen India, the Missile man a great litterateur, a true patriot, a heart throb of billions would visit our institute. Soon after the Great Communication from the Presidential Palace, the dilapidated road connecting the institute from the National Highway 37 got widened and black topped. We got not only electrical line and the phone connection but also the temporary hot line connection with the Rashtrapati Bhavan. On the eve of the visit of the President, the Campus of the institute was illuminated with search light. There was day and night vigil by the paramilitary police and CRPF personnel. I on behalf of all the members of the institute invited the Governor, Members of the Council, Cabinet Members, Dignitaries, VIPs, MLA, Governmental Officials, Journalists, Press members and public figures to the auspicious meeting arranged in the big pendal to welcome and hear the President. Several important Central Government officials came to Guwahati to monitor and take stock of the security arrangement. But on the night of the 24th December, 2004, the Tsunami near Chennai brought untold misery to the people on the Tamil Nadu. Everybody in India was sad. I got a message through the hot line that the President of India cancelled his visit to the IASST. There was a direction from the President that the meeting should be held as scheduled. The President sent his written speech to be read in the meeting by Dr. Harigopal,

a top brass of the Department of Science and Technology, Gol. Accordingly the meeting was held but we were bit sad as the Tsunami watered down our spirit. In the written speech, Dr. Kalam spoke about Ramanujan, a unique Indian genius, hand-picked by outstanding mathematician Professor Hardy of Cambridge University and hoped that the IASST will produce many Ramnujans in the years to come. He hoped that biosciences would grow in the Institute. He stressed the development of biosensors and bioinformatics in the Institute.

On the same day, I got a message through the hot line that the President would visit on the 31st December 2004. It sprang a surprise to us. We are all happy. The Institute buzzed with activities to welcome the People's President. The President visited the Institute as scheduled. The Governor, Chief Minister, several Vice-Chancellors, well known Professors, most of the then Government officials, Members of the Council, IASST and the scientists of the IASST. The President met the scientists and talked heart to heart. He was shown the laboratories and the posters connected with the various Research Programs of DST, DBT, DAE, DRDO. DIT, BARC, OI L INDIA and various supporting organizations. The President advised for the development of nano-bio sciences, Mathematical Sciences, sensors, energy and such related topics in the Institute. Everybody was happy. I am still nostalgic of the red letter day of the IASST. It is a dream that came true. The Great Soul passed away on 27th July 2015 at the age 83, leaving behind the words for billions

*"Dreams float
On an impatient wind
A wind that wants
To create a new order"*

I now pray for the Great Soul. May his soul rest in peace.....

It gives me immense pleasure to say that the IASST is now a Central Government under the DST."

BRIEF BIODATA OF PROF. N.N. DASS

Narendra Nath Dass was born on 1st January 1940 at Fauzdaripatty, Nagaon, Assam. His parents were Ratna Kanta Das, B.L., Pleader and Chandra

Prova (Chaudhuri) Das. His wife is Dr. Namita Dass and he has two daughters, Navaneeta and Aparajita.

He passed the M.Sc. Examination from Gauhati University (1963) securing the top position with Gold Medal with Physical Chemistry as his Special Paper.

He served Nowgong College (1963-64), Cotton College (1964-66) as a Lecturer in Chemistry.

He went to London, UK, in 1966 and did research works in Physical Chemistry under the guidance of Dr MH George, FRIC in Imperial College of Science and Technology with an Overseas Scholarship. The title of the thesis was "Interaction of polymer radicals with complex ions."

Dr. George was an unassuming Professor of high intellectual caliber. Dr. Dass had the opportunity to collaborate with Dr. George in the supervision of an undergraduate course in Practical Physical Chemistry during the 1968/69 session.

After getting his Ph. D. from London University and DIC (Diploma of Imperial College) in 1969, he returned to India to join Dibrugarh University as a Lecturer in Chemistry (1969). Later he became a Reader (1976) and then a Professor (1985).

He served OIL INDIA as the Senior Research Chemist for a brief period (1974-75) and returned to Dibrugarh University in 1975 At Dibrugarh University. He taught Physical Chemistry, Symmetry and Group Theory, Solid State Chemistry, Irreversible Thermodynamics, Polymer Chemistry and Petroleum Chemistry.

He was a Visiting Fellow, Queen's University, Belfast, UK (1990-91) and there he worked to develop liquid crystalline polymers under the guidance Dr AH Fawcett, a well known expert in the field of liquid crystal. He was a Visiting Professor, Tezpur University (1999) and delivered a series of lectures on Polymers, Liquid crystalline Polymers, Conducting polymers, Polythene, PP, IPCL, BPCL and Charge Transfer Polymerization,

After serving Dibrugarh University for long thirty three years, he joined the Institute of Advanced Study in Science and Technology (IASST), Guwahati, 781035 as its Director on the 1st January, 2002 and retired on the

31st September 2005. Thereafter, he served the IASST, as Honorary Professor, IASST for three years. Professor Dass donated all his valuable books to the IASST Library, (now known as Knowledge Resource Centre), after his retirement, as a token of love & gratitude to the IASST. During his tenure Dr. APJ Abdul Kalam, the then President of India visited the IASST.

Professor Dass is the **Inventor** of the Charge Transfer Initiated Polymerization and the paper on this topic was purchased by the renowned scientific Journal, Progress in Polymer Science and for world wide circulation was translated in several European languages.

He produced 25 PhD's and published 160 scientific papers in international research journals. He authored two books.

MY INVOLVEMENT WITH IASST AND ITS BRIEF HISTORY

PROFESSOR JOYANTI CHUTIA

Emeritus Scientist

In a fine morning of May 1983, I came to join the Plasma Physics group working in the Institute of Advanced Study in Science and Technology (IASST) at Guwahati. IASST was set up in 1979 by the Assam Science Society with prime objective of development of a premier research establishment in the north-east in particular and the country in general. IASST was inaugurated by the great scientist and Nobel



Laureate Dorothy Hodgkin on 3rd November, 1979. Dr. Anil Kr. Goswami founder secretary of this institute played the key role in inviting Dr. Hodgkin to inaugurate the institute. Dr. Goswami had been dedicatedly and actively involved in establishing this institute with his positive and optimistic ideas from its infant stage. Dr. J.M Choudhury, the then Vice-Chancellor of Gauhati University was the founder –Director of the institute.

Since 1982 Dr. Sarbeswar Bujarbarua had been carrying out theoretical research in Plasma Physics in the institute with a small group of research workers under a project sponsored by ISRO. He invited me to join the group as an experimentalist. Dr. Bujarbarua enabled the whole group to believe that whatever our situations and circumstances, no body's dreams are unachievable. As such, I left my job of lecturer and joined his group to choose a career in research. Immediately, I was sent by Dr. Bujarbarua as a visiting scientist to Physical Research Laboratory where Plasma Physics Programme was going on. I had to switch over from Solid State Physics to Plasma Physics. After two years of advanced training in Plasma experimental work, I came back to the institute as a faculty member. My first assignment was to set up the Plasma Physics laboratory. But I had to work without virtually any infrastructure, Library and space. The institute

did not have any corpus or regular fund. Let alone the State Govt., even other Physicists in Guwahati had no idea about a Plasma Physics Laboratory. Funding of the institute was very pathetic at the beginning.

Dr. A.K. Goswami prepared a mega-project to be submitted to the Department of Science and Technology, Govt. of India (DST, GOI) through Assam Govt. for generous funding to the Institute. In the mean time Dr. M.K. Kalita took the charge of Registrar of the institute. He worked very hard and put his sincere efforts to build up this institute as full-fledged one specially by overcoming the complicated administrative net-work in the Govt. office.

Dr. Pratul Goswami a renowned biochemist and retired professor from Guwahati Medical College was appointed as honorary director by the Governing Council of the Institute. He tried his utmost to give a better shape of the Institute. In 1986, the Life Science Division was opened under the leadership of Dr. Goswami extending the research in the field of Bio-Chemistry and Sericulture, Some Strategic areas such as assessment and conservation of bio-diversity development and medicinal plants.

In Resource Management and Environmental Sciences, natural resource management and environmental problems, bio-treatment of crude oil sludge, development of organic farming exploration and preservation of flora and fauna are the main areas of research.

I was appointed as an Assistant Professor in the Plasma Physics Division in 1986. After some preliminary work in the laboratory, I felt the need for more training to keep pace with the modern technologies. It was a great privilege for me to be awarded a visiting scientist fellowship from the Institute of Space and Astronautical Science (ISAS), Japan for one year, in 1988.

At ISAS, I worked non-linear phenomenon in a Double-Plasma device under the guidance of Dr. Y. Nakamura. On my way return to Assam, Dr. Nakamura denoted some essential equipments to our laboratory that helped in developing and installing a double-plasma device in our division. Within few years we could achieve high quality works in plasmas.

In the beginning of 1990, Dr. Bujarbarua left the institute to open another institute "Centre for Plasma Physics". Subsequently, two faculty members joined our group in the institute and I had to take charge of the division.

The institute was separated from the Assam Science Society and a framework was chartered for running the institute as an autonomous research institute under the Assam Govt. and it was registered as a separate entity in 1991 under the societies of Registration Act.

To create better facilities for advanced research, the academic staff had to put great efforts and submitted research projects to different funding agencies of Central Govt. The Mathematical Science Division with a small group of two, three persons was started to carry out research in 1994 under the guidance of Prof. J. Medhi, Professor Emeritus of Gauhati University and Prof. Binoy Tamuly.

There was a demand from the scientists of Assam to upgrade the Institute with a national character under the Central Govt. This was reflected as one of the demands agreed under the Clause 7 of Assam Accord.

A task force was constituted by the Govt. of Assam in 1989 on the advice of Prof. M.G.K. Menon who was the scientific adviser to the Prime Minister of India. He had visited the institute two years back. It was recommended by the task force to establish a National Institute which should be nucleated around IASST with suitable structural and organizational set-up.

An interministerial meeting was held on November 4, 1991 at Technology Bhawan, DST, New Delhi, where it was recommended that the scientific activities may be developed around the existing IASST. As per decision of that meeting, few time-bound major research projects were supported by DST (GOI) for four divisions of the Institute.

The State Government of Assam submitted a proposal to the Secretary, DST in 1997 with a request to support IASST fully under the ninth plan. The Government of Assam provided the institute 20 acres of land free of cost on long term lease at Paschim Boragaon, Guwahati-35 in 1995.

In 1997, I was selected to visit Germany under INSA-DFG exchange programme to work in Chaotic Phenomena of Plasma at the Kiel University for two months. There, I was fascinated to see the skillful Dusty Plasma experiment conducted by Prof. A. Piel.

Next year, Dr. K.C. Barua, Former Head of the Physics Department, Dibrugarh University joined the institute as a regular Director. Dr. N.K.

Choudhury, Former Vice-Chancellor of Gauhati University was the Chairman of Institute's Council during that time.

A central team headed by Dr. V.S. Ramamurthy, Secretary (DST) visited IASST on April 22, 1998 and interacted with the scientists. The team discussed the proposal with the Chief Secretary of Assam and other officials with a positive view. On recommendation of the Planning Commission on May, 1998, DST sanctioned Rs. 10.65 crore during the ninth plan towards construction of the Administrative cum Academic building and a small hostel. The first phase of construction was completed in 2003.

In 2000, Dr. N.N. Dass, a renowned Professor in Polymer Chemistry joined the Institute as Director. I was also promoted to Professor in the early part of that year. Research on Polymer Chemistry was started under the guidance of Prof. Dass and a small team worked with him.

Later polymer chemistry was amalgamated with plasma physics to form the Material Sciences Division as suggested by Prof. K.M. Pathak, the then Chairman of the Institute's Council.

A High Level Committee Meeting was held under the Chairmanship of Secretary, DST on 2nd April, 2004, wherein it was decided to affiliate IASST under the DST umbrella. Another significant event of the institute in that year was that Dr. A.P.J. Kalam, honourable president of India visited IASST on 31 December, 2004 in the new campus where it had already shifted from Khanapara premises.

The institute could not still recover from constant financial constraints despite the annual grant provided by the state government. After repeated appeal, at long last the Planning Commission, Gol had granted in principle approval of taking over of IASST in the 11th Five Year Plan in November 2006 and recommended DST to support the institute from its own resources.

I was appointed as the Director in 2005. Only then I was facing the biggest challenge of my life. I had to move from door to door of the Government Offices for funding just to keep the institute alive. IASST submitted its fund requirements along with detailed project report to DST during February, 2007. I was determined to create world-class research conditions and facilities in our institute so that our talented young scientists can compete on equal footing with the main stream.

In the mean time Dr. T. Ramasami was appointed as the Secretary, DST. The implementation of the IASST project into practice took a long time and the institute had been facing grave pecuniary conditions due to lack of fund and requisite infrastructure and virtually became defunctional. The staff had been totally demoralized.

At this crucial hour, with the help of Prof. M.K. Choudhury of IITG and present Vice-Chancellor of Tezpur University, an ardent supporter of the institute, I could meet and discuss with Dr. T. Ramasami about the proposal of "taking over of the Institute" on 1st April, 2007. Dr. Ramasami took very positive action in this regard and expedited the process with the Central Government.

It is worth mentioning here about a person who had been associated with this institute from 1998 to 2009. He is no other than the eminent writer and reputed journalist, Shri Homen Borgohain, Shri Borgohain patronized and empowered the institute to overcome the obstacles hindering its growth and confronts of the state government on many urgent and important issues. But for his support and guidance, it would not have been possible for the institute to come to this stage today.

After few high-level committee meetings and discussions, the proposal was approved and the Honourable Prime Minister of India, Dr. Monmohan Singh announced in his inaugural speech of Indian Science Congress, held at Shillong in 3 January, 2009 about formally taking over of the Institute by the Central Government.

The proposal was considered by Expenditure Finance Committee, Gol in a meeting held on 19 January, 2009. Subsequently, the proposal was approved at the Cabinet on 20 February, 2009. IASST was formally taken over as grant-in-aid of the Government of India under DST with effect from 9 March, 2009.

The establishment of a national institute like IASST fulfilled the expectation of the people of Assam by transplanting vision into reality, for a nodal centre of advanced research in Science and Technology. Within few years of its take-over by the Central Government, IASST has made rapid growth and development from all sides. The Institute has been emerging as knowledge based centre of excellence by carrying out high quality research in Physical Sciences and Life Sciences.

I had been serving as a Director in this institute from 2005 to 2012. The guidance and inspiring support from the honourable Chairman and the members of different councils, committees and the co-operation and trust of my colleagues played very essential role and did wonders to discharge my duties as Director. I could create my own niche in the field of Plasma Physics research, both in basic and applied. Scientific works with my research students have been very exciting and satisfying to pursue this challenging and upcoming field of research. When some achievement is made out of research problem, i always feel it soul-elevating experience. When science is practiced genuinely, it always takes one to a finer level of existence.

HISTORY OF ESTABLISHMENT OF RESOURCE MANAGEMENT AND ENVIRONMENT DIVISION (RM & ED), IASST

PROFESSOR SURESH DEKA

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That was 4th March 1991. I joined in the Institute of Advanced Study in Science and Technology (IASST) as a Junior Research Fellow (JRF) in Resource Management and Environment Division (RM&ED). Before my joining, there was no existence of RM&ED in IASST. Only three divisions namely (i) Plasma physics (ii) Computer Sciences and (iii) Life Sciences were there in the IASST. The RM&ED was started with a project entitled "Impact of oil exploration on the microflora of rice field soil of upper Assam". Late Prof. Likhan Chandra Kagti (Rtd. Professor and Head, Department of Botany, Gauhati University and Prof. HariPrasannaBarthakur (Retd. Professor and Head, Department of Soil Science, Assam Agricultural University, Jorhat) were the Principal Investigator and Co- Principal Investigator respectively of the project. After few days of my joining, Mrs. Arundhuti Devi had joined as project Assistant in the same project. When I got a Ph.D. degree from Gauhati University in June 1991, the authority of the IASST had promoted me as a project fellow with a stipend of an amount of Rs. 2,100/- per month (Fixed) and Dr. (Mrs.) Arundhuti Devi was promoted to JRF in that project. Dr. PratulGoswami (Rtd. Professor and Head, Department of Biochemistry, Guwahati Medical College and Ex-President, Assam Science Society) and Dr. Mahanta Kumar Kalita (Ex-Secretary Assam Science Society and former Lecturer Department of Physics Nalbari College) were Honorary Director and Administrative Officer respectively.



During my joining, only four rooms were there in the old permanent building of the Assam science society. These four rooms were – (1) Director's

room (2) Administrative officer's room (3) Ministerial staff's room and (4) Life Sciences Laboratory room. In the west side of the old Science Society Building, there was a new building of the society, where plasma physics laboratories and Computer lab and classrooms were there. There was no room for RM&ED. So, we were sitting in the small room of life sciences laboratory where Dr. P. Azad and Ms. JuliBordoloi were sitting. There was a room on the back side of the life sciences division. This room was used by the Assam Science Society as a store room for keeping the materials of operation black board project where chalk pencils and slates were stored. The key of the room was kept in the president's hand of Assam Science Society. At that time, Dr. Kulendu Pathak was the president of the Assam Science Society. I went to the Assam Science Society office situated at Latasil, Panbazar, Guwahati and requested Dr. Pathak Sir to handed over the key of the room to the IASST. After few days, we got the key of the room and cleared all the material dumped in the room. Within one month time, we had organized it as laboratory cum sitting room of the Resource Management & Environment Division. A few minor equipment and some furniture have been purchased from the fund of the project entitled "Impact of oil exploration on the microflora of rice field soil of upper Assam" sponsored by the Ministry of Environment and Forests, Govt. of India and started our research with that limited facilities. Professor Dr. Kagti sir visited our lab once in a week and gave some advice and suggestions for achieving the goal of the project. A total of five oil fields viz. Lakowa, Geleki, Rudrasagar, Moran and Barhola have been undertaken for the study. Every year, I along with Professor Barthakur sir went to these oil fields for collection of soil samples from the rice fields situated near the group gathering station/oil collecting station. Generally, Dr. Barthakur sir prepared the progress report of the project for presentation in the project monitoring meeting. I accompanied him. I visited project monitoring meeting held at Banaras Hindu University and Regional Research Laboratory, Bhubaneswar, Orissa with Prof. Barthakur sir, where sir presented the progress report of the project. The project was ended during the year 1994. The cost of the project was Rs.3.22 Lac. A very comprehensive report was made from the data generated from the project and submitted it to the MoEF, Govt. of India for necessary action.

In the year 1993, the RM&ED had submitted a project proposal to the Ministry of Environment and Forests, Govt. of India for the "Development of Resource Management and Environment Division of IASST" for financial assistance. The Ministry has kindly approved the proposal and decided to develop the RM&ED of IASST into a creative center not only for "Resource Management" of the NE Region but also for Resource Development of the

region and sanctioned an amount of Rs. 15 Lac as seed money for development of RM&ED of IASST in the year 1995. As per guideline of the Ministry, two high-level committees viz. Expert committee and Steering committee were constituted. The first expert committee's meeting was held on 15.07.1995. The first expert committee decided that before initiating any research programme, a database on research activities on flora and fauna including the environment of the NE region be generated to avoid any duplication of study and to facilitate the scientists of the region for taking up a research programme in future with data information available in the N.E. region. On the basis of the recommendation of the expert committee, a database on research on Resource Management and Environment of N.E. region in two volumes had been prepared. The expert committee members present in the first meeting were (1) Prof. K. C. Baruah, Director, IASST (2) Dr. D. Bondyopadhyay, Director, Ministry of Environment and Forests, New Delhi (3) Dr. K.P. Chandel, Director, NEPGR, New Delhi (4) Dr. A. K. Singh, ICAR Complex, Barapani, Shillong (5) Dr. S.J.S. Hatter, Scientist ZSI (ERS), Shillong (6) Dr. S. L. Abbas, Scientist, BSI (ERS) Shillong (7) Dr. S.C.Sinha, Rtd. Professor, Manipur University (8) Dr. (Mrs.) R. Handique, Professor, Department of Life Sciences, Dibrugarh University (9) Dr. S. K. Sarma, Rtd. Professor, Department of Environmental Science, Gauhati University (10) Dr. K. G. Bhattacharjee, Professor, Department of Chemistry, GU (11) Dr. G. Bhowmik, Professor, Department of Biotechnology, GU (12) Dr. A. K. Buragohain, Reader, Department of Botany, G U. (13) Dr. M. K. Kalita, Secretary (I/C), IASST (14) Dr. Suresh Deka, In-Charge, RM&ED, IASST and (15) Dr. P. Azad, In-Charge Life Sciences Division, IASST. To identify the gaps and selection of thrust areas of research on resource management and environment a meeting of the local expert committee was held on 15.06.1996 at the IASST under the chairmanship of Prof. K.C. Baruah, Director, IASST. The committee selected as many as eleven topics as thrust areas of research on the subject.

Professor Kamal Ch. Baruah (then professor of Department of Physics and Rector of Dibrugarh University) had joined as a full-time Director of the Institute in the year 1996. During his tenure as Director, the bylaw of the IASST had amended and the post of Administrative Officer was abolished and Registrar post was introduced. After the amendment of the bylaw of the Institute, Dr. Mahanta Kumar Kalita joined as a Registrar of the Institute.

Ms. Arundhuti Devi registered her name for a Ph.D degree in Department of Chemistry, Gauhati University from our RM&ED. Mrs. Devi was awarded Ph. D. degree by Gauhati University for her thesis entitled "Impact of oil exploration on soil quality near upper Assam oil fields" in

the year 1997. She was the first Ph. D. awardee from our Division. Mrs. Devi joined as Project Assistant and Assistant professor in our division in the year 1996 and 2001 respectively. Dr. AnujBaruah and Dr. (Mrs.) Sabitry Choudhury Bordoloi had joined in our division as Assistant Professor and Associate Professor in the year 1999 and 2001 respectively in the project "Development of IASST" sponsored by the DST, Govt. of India. However, Dr. Baruah had left the job in the year 2004. I was the only permanent faculty in the division up to 1999. A project entitled "Development of microbiological method for control of hydro-carbonaceous pollutants of oil fields soil of upper Assam – a feasibility study" was sponsored by the DST, Govt. of India, New Delhi to me under young scientist scheme in the year 1995. In the same scheme, Dr. (Mrs.) Arundhuti Devi also got a project entitled "Entry of Polycyclic Aromatic Hydrocarbons into soil from oil field effluents and their natural degradation" from the DST.

During that time, it was not possible to carry research without a project. The state government provided only Rs. 33.00 lac yearly. That was also irregular. This fund was not even enough for giving the salary of the employee of the IASST. From the project fund, particularly seed money received from the Ministry of Environment and Forests, Govt. of India, we developed the infrastructure facilities of the laboratory of the RM&ED, IASST. The establishment of Resource Management and Environment Division (now it is Resource Management and Environment Section) of IASST has been completed 27 years. With the limited infrastructure facilities, the scientists of the division have tried to achieve its goal. Now, constraints have gone. The stage of carrying out research on Resource Management and Environment is perfect. We hope that the present researchers will fulfill the vision and mission of the division (now section) in near future.

SHARING A FEW MOMENTS WITH THE IASST, A BRAINCHILD OF THE ASSAM SCIENCE SOCIETY

PROF. ANIL KUMAR GASWAMI

There are moments in the life of an individual and the same also in the case of an organization or Institution. Such moments can catapult us to a new high. I am going to share a few such moments in the case of the IASST, brainchild of the Assam Science Society.

Way back in the year 1953, such a moment was experienced by many of us at Cotton College, when the *Gauhati Science Society* was born in the Cotton College with the initiative of a handful of teachers of the College, and of the Gauhati University on the 13th of February, 1953. The aim of this new born society was primarily to popularized science and to promote the advancement of science & technology in society. The society eventually blossomed into the *Assam Science Society* with the formation of several branches in different districts of the state.



The *Assam Science Society* submitted proposals before the State Government for supporting the implementation of two major projects, a *Children's Science Museum Complex* and a *Planetarium* and for the establishment of a *Fundamental Research Institute*.

My association with the Executive Committee of the Society started in the year 1974-75 as the Treasurer of the Society with President, Dr. Birendra Nath Choudhury and General Secretary, Dr. Debendra Narayan Deb Goswami. From 1975 to 1979, I was elected as General Secretary of the Society for four consecutive years. In this period I worked with four President successively, viz., Prof. Jamini Mohan Choudhury (1975-76), Prof.

Narendra Nath Siddhanta (1976-77), Dr. G. Tyagarajan, Director RRL, Jorhat (1977-78) and Dr. Pratul Goswami (1978-79). Within this four years we succeeded in abating the approval and a grant from the Govt. of Assam for implementation of project of Science Museum Complex in March 1976.

The *Assam Science Society* held a two-day Midterm Symposium on December 6-7, 1975 on a theme, *Co-ordination of Research between academic institutions and Universities with development departments and other Research laboratories on Mineral, Agricultural and Forest resources*. The inaugural session of the symposium was held in the Kalaguru Bishnu Rabha Auditorium of the Cotton College. The symposium was inaugurated by the Hon'ble Chief Minister of Assam, Sarat Chandra Sinha in this Auditorium on the 6th of December, 1975. After this session, as I came down to see him off, he had tea in a front room of the Auditorium. I requested him for necessary support from the State Govt. to enable us to implement the two major projects conceived and proposed by our Society. In respect of the Fundamental Research Institute Chief Minister Sinha stressed that instead of just Fundamental or basic Research, the institute should also emphasize applied research including development of technologies so that our people benefits of such research in harnessing our natural assets with application of appropriate technologies including industrial development. We placed before our Executive Committee the ideas spelt out by the Hon'ble Chief Minister. The Executive Committee accepted the same, and decided that the name of the Research Institute should be changed to '*The Institute of Advanced Study in Science & Technology*' (IASST). This is how IASST was reborn.

Bio-data of Prof. A.K. Goswami: Dr. Anil Kumar Goswami served as Professor and Head of the Department of Physics, Cotton College and later as principal of this prestigious college. Prof. Goswami, who became a Fellow of the Royal Astronomical Society (FRAS) in 1996, also served as a member of the Steering Group of S&T Sector, Planning Commission of India and chairman of the NCSTC Network in 2007-09. The NCSTC Network was developed as an outcome of the people's science movements (Bharat Jana Vigyan Jathas) in the country. Prof

Goswami was also a driving force behind many initiatives and institution of a number of academic awards like Hiranya Chandra Bhuyan Award, Rohini Kumar Barua Award, Prasanna Chandra Goswami Award, VD Thawani Fellowship under the Assam Science Society, aimed at recognizing the outstanding contribution in different fields of science and technology. He was also the former president of Assam Science Society and Director ASTEC, Govt. of Assam.

Few rare pictures of Nobel laureate Dorothy Hodgkin during the time of inauguration of IASST on 3rd November 1979.
(Curtsey Prof. Anil Kumar Goswami)



Chief Guest Dorothy Hodgkin and Distinguished Guest Justice Baharul Islam, Prof. Jamini Choudhury, Dr. A.K. Goswami, Prof. S. Ramaseshan proceeding to the dais, Nov. 3, 1979.



Dr. A.K. Goswami, Project Coordinator, IASST, welcomed and gave a brief account of the objective of the IASST Nov. 3, 1979.



Dr. K.M. Pathak introduced the Chief Guest, Nov. 3, 1979.



Dorothy Hodgkin's inaugural speech, Nov. 3, 1979.



Part of the audience in the District Library Auditorium, Nov. 3, 1979.



Dorothy Hodgkin interacted with a group of participants, Nov. 3, 1979.



In front of the lawn at Kazironga Tourist Lodge, Nov. 4, 1979.



Dorothy Hodgkin's visit to the Silk village, Sualkuchi, Nov. 6, 1979.

OLD MEMORIES OF IASST



Late Director P. Goswami engaged in discussion with the Secretary and FAO in the old IASST premises at Khanapara in the year 1992



A laboratory view of IASST in the old IASST premises at Khanapara in the year 1993



Dr. Y. Nakamura, Institute of Space & Astronautical Science, Tokyo at IASST in the year 1996.



Prof. P.M. Neuman, Department of Mathematics, Queen's College Oxford University, UK visiting the Plasma Physics Department in the year 1996 at the old premises of IASST at Khanapara.



Foundadtion stone laying ceremony of IASST at Paschim Boragaon on 11.1.2001



CONSTRUCTION SITE OF IASST at Boragaon in the year 2002 (Picture taken on 7-2-2002)



*CONSTRUCTION SITE OF IASST
at Boragaon in the year 2002 (Picture taken on 7-2-2002)*



*CONSTRUCTION SITE OF IASST
at Boragaon in the year 2003 (Picture taken on 14-2-2003)*



*PICTURE OF THE REAR VIEW OF IASST
buildingat Boragaon in the year 2004*



*Dr. APJ Abdul Kalam delevered lecture in the Auditorium
IASST on 31st Dec 2004*



Picture of IASST at present in the year 2017.



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