

ANNUAL REPORT 1987-88

**SATYENDRA NATH BOSE NATIONAL CENTRE
FOR BASIC SCIENCES**

(Estd. 1986)

DB 17 : SECTOR I, BIDHANNAGAR,
CALCUTTA

**SATYENDRA NATH BOSE NATIONAL CENTRE
FOR BASIC SCIENCES**

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ANNUAL REPORT

April 1, 1987 to March 31, 1988

Satyendra Nath Bose National Centre for Basic Sciences came into being on June 13, 1986 when it was accorded registration as a Society under the West Bengal Society Registration Act XXVI, 1961. In July 1986, a 15 acre plot of land in JD Block, Sector III, Salt Lake City was delivered to the Centre. Construction work on the designated site will soon start. At the moment, however, the Centre operates from a rented house located at DB-17, Sector-1, Salt Lake City. On June 1, 1987 Professor C. K. Majumdar assumed responsibilities as the Centre's first Director.

Academic Programmes

A. Meeting and Symposia :

The Centre organised one short meeting and another long meeting during this year. The Regional Discussion Meeting on High Temperature Superconductors was held on January 25, 1988 at the Centre's building at Salt Lake. Twentyfive interested researchers from Saha Institute of Nuclear Physics (SINP), Variable Energy Cyclotron Centre (VECC), Central Glass and Ceramic Research Institute (CGCRI), Indian Association for the Cultivation of Science (IACS), Indian Institute of Technology, Kharagpur (IIT Kh) and several neighbouring universities took part in the discussion. The result was a very useful exchange of information about available experimental facilities and future programmes of the various groups.

The Workshop and Symposium "Aspects of Many Body Effects in Molecules and Extended System" was held on February 1 to 10, 1988 in Calcutta in collaboration with IACS. There were 28 participants from all over India. Lectures were delivered by 14 Indian and 11 foreign scientists (4 from USA, 2 from Germany, 2 from USSR, 1 each from France, Denmark and UK). The lecture notes will be brought out by the Springer Verlag, Heidelberg, under their Lecture Notes in Chemistry series.

B. Seminars by Visiting Fellows :

The following seminar/lectures were delivered by the Visiting Fellows of the S. N. Bose National Centre.

1. Prof. H. B. Nielsens, Niels, Bohr Institute, Copenhagen, Denmark :
 - (i) Why is the fine structure constant so small ?
 - (ii) Cheshire cat principle for hybrid bag models ;
2. Dr. K. R. P. M. Rao, Bhabha Atomic Research Centre, Trombay :
 - (i) Mossbauer spectroscopy in basic science,
 - (ii) Applications of Mossbauer spectroscopy.

C. S. N. Bose Memorial Lecture 1988 :

The first S. N. Bose Memorial Lecture was delivered by Professor Leon Van Hove, Professor and ex-Director, European Organisation for Nuclear Research (CERN), on February 17, 1988. The topic was 'Quarks and Gluons in Particle and Nuclear Physics'.

D. Seminars and Symposia sponsored by the Centre :

The S. N. Bose National Centre sponsored and participated in (i) Meeting on Radiation Physics at Bose Institute, (ii) Symposium on Scattering Theory and its Applications at IACS, (iii) An Exhibition 'Physics through Experiments' and a seminar on Physics and Application of New Materials arranged by Indian Physical Society.

E. Publications :

1. Positron Annihilation Studies in high T_c superconductor Y-Ba-Cu-O and Ho-Ba-Cu-O—P. Mandal, A. Poddar, P. M. G. Nambissan, P. Chaudhury, B. Ghosh, P. Sen and C. K. Majumdar, Sol. St. Phys., Symp. (DAE) at Bombay, Vol 30C, 1987.
2. Nisargadarsan (On Newton's Principia)—C. K. Majumdar in the Bengali Weekly 'Desh' August 22, 1987, pp. 49-56.
3. Book review : Collected works of Professor Meghnad Saha Vol. II —C. K. Majumdar (in Bengali) Jugantar, Jan. 26, 1988.

Finance :

At a meeting held on March 25, 1988 the Finance Committee approved of the proposed budget of the Centre for the Financial Year 1988-89. A copy of the proposed budget is given in Annexure I. The Committee also approved of

the expenses incurred by the Centre during the last financial year. A copy of the statement on Expenditure is being made available to the members in Annexure II.

For a variety of reasons it has not yet been possible to have the accounts of the Centre audited.

Construction :

To forestall any attempt towards damaging the land and possible illegal occupation by squatters there was an urgent need for construction of a wall along the boundaryline of the 15 acre land on which the Centre will be built. The Centre, upon advice of the Department of Science and Technology, contacted the CPWD to ascertain whether it would accept the responsibility of constructing the wall. The Centre was assured of acceptance of the work by the CPWD should a formal offer be made to it. Later developments, however, indicated that the CPWD was not interested in the work and if the Centre wanted to have the wall constructed soon the work should be done by some other agency. With the consent of the Governing Body, the assignment of the construction of the boundary wall made to CPWD was withdrawn. In August the Governing Body formed the Construction Committee. It is the job of the Committee to help the Director on matters related to construction—choice of an architect, a builder etc. The Committee, when formed consisted of the following members :

1. Professor C. K. Majumdar, Director, Chairman.
2. Professor G. S. Sanyal, former Director, IIT, Kharagpur.
3. Professor T. K. Chattopadhyay, Dept. of Architecture, Jadavpur.
4. Chief Engineer, CPWD (Eastern Zone) or his nominee not below the rank of an S. E. now represented by Mr. A. Chattopadhyay, SSW(EZ) CPWD, Calcutta.
5. The Officer-on-Special Duty-Member-Secretary.

In January, 1988 the services of a Consultant (Engineering) were secured on an ad-hoc basis to monitor the work of construction of the boundary wall. Soon tenders were floated and three firms were chosen to build the boundary wall. The choice of three firms and the splitting of the work among them, it was hoped, would expedite the completion. The firms chosen were (a) M/s. B. B. Construction (b) M/s. Zenith Construction and (c) Sri Saktipada Mukhopadhyay. In March, 1988 work orders were issued though actual work did not begin until April, 1988. The wall will be 1135 running-metre-long and about 2 metre high (1.5 metres of solid brick and .5 metres of barbed wire

fencing). It will have two openings on two sides which will provide the space for construction of two gates. The work was expected to be completed in four months' time. The original estimate of cost of construction of the boundary wall made by the CPWD was Rs. 9.06 lakhs. It is, however, felt that actual cost might exceed the estimate by about Rs. 2 lakhs.

To choose an architect to prepare the master plan of the Centre's future campus was, however, a lot more difficult job which the construction committee was expected to handle. The Centre had, in the meanwhile, received offers for services from seven firms. These firms are : (1) Ghosh, Bose and Associates, 6, Harrington Mansion, 8 Ho Chi Minh Sarani, Calcutta 700 071, (2) Engineering Services International Pvt. Ltd., BC 192, Salt Lake City, Calcutta 700 064, (3) Kothari and Associates, 14, Camac Street, Calcutta 700 017, (4) ACME Consultant Private Ltd., 10, Middleton Row, Calcutta 700 071, (5) Ballardie Thompson & Mathews Pvt. Ltd., 7, Red Cross Place, Calcutta 700 001, (6) Masub Engineers, 32,A/51, Suren Sarkar Road, Calcutta 700 010 and (7) Suresh Goel and Associates, S-83, Panchashila Park, New Delhi. The firms were to be given a token fee of Rs. 7000/- for preparing a lay out. They were told what the Centre wanted to have in the plan. The architects were given six weeks' time to complete the work and submit their master plan to the Director.

Only four firms (out of seven who had initially expressed interest) actually submitted their master plans and the Construction Committee had its first look at these at its meeting on March 4, 1988. It was decided that all the firms should be called and each asked to make a presentation explaining the special features of its plan and answer questions which members of the Construction Committee might like to ask. The four firms which submitted their master plans are :

- (a) Ghosh, Bose and Associates.
- (b) Engineering Services International Pvt. Ltd.
- (c) ACME Consultants Pvt. Ltd.
- (d) Ballardie Thompson and Mathews Pvt. Ltd.

Library facilities :

The Centre has already started, though in a very modest way, building a Library for the scholars who would be attached to it. About 60 titles have been acquired. The Director has made some of his personal periodicals available to the Centre. It is hoped that with the appointment of a Librarian, the work of building a Library will be handled better.

Work of Sub-Committees :

The ad-hoc Sub-committees on Finance and Construction are meeting every now and then. As has been mentioned earlier, the Finance Committee considered and approved of the budget for the Financial year 1988-1989. It also approved of the expenses the Centre had incurred during the previous financial year. The Construction Committee has had quite a few sessions during the year. In fact all the major decisions taken on construction matter emanated from discussion of members of the Construction Committee. The Sub-Committee entrusted with the responsibility of framing Bye-Laws of the Centre met once. We are afraid, the Committee has to have few more sessions before it can submit a comprehensive report on Bye-Laws of the Centre.

Acquisition of assets :

The Department of Electronics has consented to the Centre's purchasing a Computer-Microprocessor Development System HP 64000-costing about Rs. 10,00,000/-. The Centre is expecting to receive the Computer sometime in October this year. Part of the cost will be met from donations made by a philanthropist named Mr. Jitendra Nath Bose. The Centre has also bought a Xerox machine, couple of air conditioners for the computer room, an electric type writer, some furniture and some conventional office equipment.

Staff situation :

During the year under review the Centre had two full time members of staff. Dr. M. K. Ghosh continued to work as the Officer-On-Special-Duty. On June 1, 1987 Dr. C. K. Majumdar joined the Centre as its first Director. The posts of Administrative Officer(1), Librarian(1), Accountant(1), Stenographer(1), Typists(2) and Helper(1) have been sanctioned. These posts have already been advertised. Steps are now being taken to interview the candidates and complete the process by offering appointments to suitable applicants.

At its first meeting held on August 28, 1987, the Governing Body was pleased to create four Visiting Post-doctoral Fellowships for award to eligible scholars on a year-to-year basis extendible upto a maximum period of three years. Based on the decision of the Governing Body, the Centre invited applications from interested scholars, The applications are now being screened. We are hoping that within the next couple of months the Centre will have its first four Post-doctoral Fellows working here.

NOTE

The Department of Science and Technology has communicated the following budget provision for the S. N. Bose National Centre for Basic Sciences during the financial year 1988-1989 through its letter no. F.SP/SN/001/88 dated May 13, 1988 :

Budget Estimates 1988-89

Plan

Rs. 1,13,00,000/-

Non-Plan

ANNEXURE

REVISED ESTIMATES 1987-88

Sl. No.	Item	Actuals			B.E. 1987-88	Actuals upto 8/87
		1984-85	1985-86	1986-87		
1	2	3	4	5	6	7
	1. Xerox Machine	—	—	—	1.40	—
	2. Typewriter	—	—	—	1.40	.13
	3. Small Equipment	—	—	—	.25	.19
	4. Boundary Wall	—	—	—	9.06	—
	5. Computer House, Office Buildings, Guest House, Hostel Internal roads, Office Complex etc.	—	—	—	—	—
	6. Overhead Reservoir & Water supply network.	—	—	—	—	—
	7. Campus Plan	—	—	—	0.50	—
	8. Matching Grant against donation for a Computer	—	—	—	—	—
	9. Furniture, Fans & Lights & Installation of telephones	—	—	—	0.75	0.79
	10. Library-Books & Journal	—	—	—	1.00	0.04
	11. Purchase of a Staff car	—	—	—	—	—
TOTAL		—	—	—	14.36	1.15

(PLAN CAPITAL)

AND BUDGET ESTIMATES 1988-89

(RUPEES IN LAKHS)					
Requirements for 9/87 to 3/88	R.E. 1987-88	Variation between BE & RE 1987-88	B.E. 1988-89	Variation between RE 87-88 and BE 1988-89	Reasons for varia- tion between Col. 10 & 12
8	9	10	11	12	13
1.10	1.10		—		
.35	.48		.20		
.01	.20		.20		
9.06	9.06		—		
—	—		90.00		
—	—		10.00		
0.50	0.50				
5.00	5.00				
0.59	1.38		0.60		
0.46	0.50		1.00		
—	—		1.10		
17.07	18.22		103.10		

Head of Account Major Head/Minor Head/ Detailed Head/Sub-Head.	Actuals			B.E.
	1984-85	1985-86	1986-87	1987-88
1	2	3	4	5
1. Salaries	—	—	35,696	2,23,609
2. Office Expenses	—	—	—	1,71,500
Total Provision	—	—	35,696	3,95,109
Recoveries to be taken as reduction in Expenditure	—	—	—	—
Net Provision	—	—	35,696	3,95,109

(PLAN REVENUE)

Actuals upto 8/87	R.E. 1987-88 Anticipated Expenditure 9 87 to 3/88	R.E.	Variation between BE & RE 1987-88	B.E. 1988-89	Variation between RE 87-88 & BE 88-89
6	7	8	9	10	11
43,273	1,80,336	2,23,609		4,33,828	
45,163	3,44,337	2,91,000		4,48,000	
88,436	5,24,673	5,14,609		8,81,828	
—	—	—		—	
88,436	5,24,673	5,14,609		8,81,828	

S. N. BOSE NATIONAL CENTRE FOR BASIC SCIENCES

Budget Estimate 1988-89

PLAN—RECURRING

A.

Salaries & Allowances :

1. Director @ Rs. 8000/-	...	Rs.	96,000.00
2. Adm. Officer @ Rs. 3700/-	...	Rs.	44,400.00
3. Adm. Asstt. (Accounts) @ Rs. 2000/-	...	Rs.	24,000.00
4. Steno-Typist @ Rs. 1400/-	...	Rs.	16,800.00
5. Librarian @ Rs. 3000/-	...	Rs.	36,000.00
6. Jr. Asstt. (4) @ Rs. 950 × 4	...	Rs.	45,600.00
7. Helper @ Rs. 750/-	...	Rs.	9,000.00
8. C.C.A.	...	Rs.	7,860.00
9. H.R.A.	...	Rs.	53,400.00
10. D.A.	...	Rs.	40,284.00
11. T.A./D.A. for staff for attending seminar/symposia	...	Rs.	20,000.00
12. Contribution to P. F.	...	Rs.	25,000.00
13. Visiting Post Doctoral Fellowship @ 2200 × 6 × 12 H.R.A. @ 400/-	...	Rs.	1,87,200.00
14. Visiting Membership Fellowship	...	Rs.	50,000.00
15. Casual Labour	...	Rs.	25,000.00
		Total	Rs. 6,80,544.00

S. N. BOSE NATIONAL CENTRE FOR BASIC SCIENCES

Budget Estimates 1988-89

PLAN—RECURRING

B. Other Expenditure :

1. Telephone & Trunkcalls	...	Rs.	15,000.00
2. Postage & Telegrams	...	Rs.	20,000.00
3. Electricity Charges	...	Rs.	7,000.00
4. Municipal Tax	...	Rs.	500.00
5. Printing & Stationary	...	Rs.	15,000.00
6. Hire of Office Premises	...	Rs.	96,000.00
7. Hire of Transport	...	Rs.	60,000.00
8. Meeting Expenses	...	Rs.	30,000.00
9. Misc. Exp. Contingency	...	Rs.	15,000.00
10. Campus Beautification	...	Rs.	5,000.00
11. Seminar & other Academic Exp.	...	Rs.	1,50,000.00
12. Director Research Expenses	...	Rs.	50,000.00
13. Library Books	...	Rs.	50,000.00
14. Library Journals	...	Rs.	1,00,000.00
	Total	Rs.	<u>6,18,500.00</u>

S. N. BOSE NATIONAL CENTRE FOR BASIC SCIENCES

Budget Estimate 1988-89

PLAN—RECURRING

C.

1. Maintenance of Building	...	Rs.	1,000.00
2. Repairs to Equip (Service contract)	...	Rs.	7,000.00
		Total	<u>Rs. 8,000.00</u>

Total = A + B + C (Rs. 6,80,544.00 + 6,13,500.00 + 8,000.00) = Rs. 13,02,044.00

S. N. BOSE NATIONAL CENTRE FOR BASIC SCIENCES

Budget Estimate 1988 89

PLAN—NON-RECURRING

D.

Equipment :

1. Type Writers etc.	...	Rs. 20,000.00
2. Small Equip.	...	Rs. 20,000.00
		<u>Rs. 40,000.00</u>

E.

Building

1. Boundary wall	...	Rs. 2,00,000.00
2. Preparatory work Campus plan etc.	...	Rs. 30,000.00
3. Construction of Building	...	Rs. 35,00,000.00
		<u>Rs. 37,30,000.00</u>

F.

Furniture & Fixture :

1. Office Furniture, Almirah, Filing Cabinet, table etc.	...	Rs. 50,000.00
2. Installation and airconditioning charges for the computer	...	Rs. 25,000.00
3. Library Almirah	...	Rs. 25,000.00
		<u>Rs. 1,00,000.00</u>

S. N. BOSE NATIONAL CENTRE FOR BASIC SCIENCES

Budget Estimate 1988-89

PLAN—NON-RECURRING

G.

1.	Water Supply Installation	...	Rs.	10,00,000.00
2.	Purchase of a staff car	...	Rs.	1,00,000.00
			Rs.	<u>11,00,000.00</u>

Total = D + E + F + G (Rs. 40,000.00 + Rs. 87,30,000.00 + Rs. 1,00,000.00 + Rs. 11,00,000.00)
= Rs. 99,70,000.00

GRAND TOTAL :

Plan Recurring	...	Rs.	13,02,044.00
Plan Non-Recurring	...	Rs.	99,70,000.00
Total		Rs.	<u>1,12,72,044.00</u>

ANNEXURE
S. N. BOSE NATIONAL CENTRE
Statement of
with effect from
PLAN—

Receipts		Rs.	P.
To	Grant Received No. SP/SN/001/87 dated 26.5.87	5,00,000.00	
To	Grant Received	5,00,000.00	

10,00,000.00

—11

FOR BASIC SCIENCES

Expenditure

1.4.87 to 31.3.88

RECURRING

Payments		Rs.	P.
By	Deficit balance C/d from 86-87 agst. Salary	A/C	5,880.00
,,	Salary & Allowances	A/C	1,23,192.00
,,	Contribution to P. F.	A/C	6,201.50
,,	Visiting Membership Fellowships	A/C	7,553.80
,,	Telephone Charges	A/C	20.00
,,	Postage	A/C	2,581.40
,,	Printing & Stationery	A/C	12,150.01
,,	Hire of Office Premises	A/C	66,838.65
,,	—Do— Pre-paid (Security)	A/C	16,000.00
,,	Hire Transport	A/C	27,872.88
,,	Meeting Expenses	A/C	8,577.00
,,	Miscellaneous Exp. (Cont. & text of advt. etc.)	A/C	17,599.15
,,	Seminar & Other Academic Exp.	A/C	99,068.00
,,	Director's Research Exp.	A/C	23,251.60
,,	Wages (Casual)	A/C	29,084.00
,,	Repairs to Office equipment	A/C	312.00
,,	Transferred to I.A.C.S. (Salaries)	A/C	40,000.00
,,	Total Expense	A/C	4,85,581.99
,,	Balance	A/C	5,14,418.01
			<hr/> 10,00,000.00 <hr/>

S. N. BOSE NATIONAL CENTRE

**Statement of
with effect from
PLAN—**

Receipts

			Rs.	P.
To	Balance C/d. from Plan-Recurring	A/C	5,14,418.01	
„	Grant received in respect of Boundary Wall	A/C	3,65,000.00	
„	Grant received in respect of Plan-Non-Recurring No. SP/SN/001/87 dt. 30.3.88	A/C	9,00,000.00	
„	Grant received in respect of Boundary Wall No. SP/SN/001/87 dt. 30.3.88	A/C	3,35,000.00	
„	Donation received	A/C	50,001.00	
„	Receipt from Tender papers	A/C	690.00	

21,65,109.01

FOR BASIC SCIENCES

Expenditure

1.4.87 to 31.3.88

NON-RECURRING

Payments			Rs.	P.
By	Type Writers	A/C	86,898.25	
,,	Small Equip.	A/C	23,975.18	
,,	Boundary Wall	A/C	9,620.00	
,,	Xerox Machine	A/C	97,040.00	
,,	Furniture & Fixture Table, Chair, Almira etc.	A/C	40,881.00	
,,	Library Almira Godrej Store-well	A/C	25,946.49	
,,	Seminar Room Chairs	A/C	10,075.40	
,,	Conference Table	A/C	8,482.85	
,,	Fans & Light Fittings	A/C	11,156.40	
,,	Registration fees for Installation of Telephone	A/C	24,000.00	
,,	Library (Books & Journal)	A/C	55,485.27	
,,	Campus Plan	A/C	28,000.00	
,,	Computer (including PC)	A/C	9,44,738.00	
,,	Total Expense	A/C	13,16,293.84	
,,	Balance		<u>8,48,815.17</u>	
			<u>21,64,109.01</u>	

