



GOVERNMENT OF ODISHA

**ANNUAL ACTIVITIES REPORT
FOR THE YEAR 2013-2014
OF
SCIENCE & TECHNOLOGY
DEPARTMENT**

SCIENCE & TECHNOLOGY DEPARTMENT



REPORT ON THE ACTIVITIES OF SCIENCE & TECHNOLOGY DEPARTMENT FOR THE YEAR 2013-14

1. INTRODUCTION

The Science & Technology Department is the nodal Department for the promotion of the Science & Technology in the State. The manifold scientific and technological activities are carried out by different agencies like Odisha Renewable Energy Development Agency (OREDA), Odisha Space Application Centre (ORSAC), Odisha Bigyan Academy (OBA), Pathani Samanta Planetarium (PSP), Institute of Mathematics & Applications (IMA) and Institute of Materials Science (IMS) working under the aegis of this Department with the following objectives:-

- 1.1. To keep abreast of the latest developments in the field of Science & Technology and to take steps for dissemination of these among institutions like industries, research laboratories, Universities and among scientists and technologists.
- 1.2. To co-ordinate the R&D Programmes of different departments, industrial and research institutions and to ensure scientific and technical co-operation among these institutions and agencies.
- 1.3. To formulate and fund, research and application programmes in the field of science and technology,
- 1.4. To encourage, develop and extend the use of renewable sources of energy including energy plantations.
- 1.5. To popularize Remote Sensing Technology and make effective use of it.
- 1.6. To popularize science and technology among students and the people so as to inculcate in them a scientific temper and attitude.
- 1.7. Promote and popularize appropriate rural technologies.
- 1.8. Development of Library cum Documentation Centre for Science & Technology.
- 1.9. Science & Technology communication through awareness promotion, support to Institutions for Seminars/Workshops etc., development of Science Centres and administration of Pathani Samanta Planetarium.
- 1.10. To conduct Science & Technology Entrepreneurship Development Programmes.
- 1.11. To undertake fundamental research in mathematics and its application.
- 1.12. To conduct basic and applied research in the frontier areas of Material Science & Engineering.

STATE COUNCIL ON SCIENCE & TECHNOLOGY

The State Council on Science & Technology functions as the highest policy making body for development of Science & Technology and oversees the implementation of the programmes undertaken in the field of Science and Technology in the State.

The activities pertaining to various programmes / schemes undertaken during the year 2013-14 are stated below:

Scholarship at Post Graduate Level on Basic Sciences

To promote and encourage the meritorious students to pursue their Post Graduate studies in Basic Science subjects such as Physics, Chemistry, Mathematics, Botany, Zoology and Geology, Government of Odisha in Science and Technology Department is implementing a Scholarship programme @ Rs.2000/- per month for 200 students under the aegis of the State Council on Science and Technology.

UNESCO- Kalinga Prize

The UNESCO Kalinga Prize for popularization of Science is an International Award and created in the year 1951. The prize is being administered by UNESCO, Paris since 1952.

The State Council on Science & Technology, Odisha coordinates for UNESCO- Kalinga Prize. The donation for this prize is shared by the Govt. of India, Govt. of Odisha and Kalinga Foundation Trust since the year 2005. The UNESCO – Kalinga prize for the year 2013 has been awarded.

Establishment of Sub-Regional Science Centers

A Sub- Regional Science Centre is being set up at Mouza- Tukurla under Bhatli Tahasil in Bargarh District in the State, which is under progress. In this effect an amount of Rs.2.50 crore towards state share has been released to the National Council of Science Museum (NCSM), Kolkata for the construction of the Sub-Regional Science Centre.

Further, steps are being taken up for setting up of Sub-Regional Science Centres in Koraput and Keonjhar Districts.

Establishment of Patent Information Centre in the State.

The State Council on Science & Technology has taken steps for establishment of Patent Information Centre (PIC) in Odisha. The project will run for a period of 5 years with the financial assistance from the Department of Science & Technology (DST), Government of India. Action has been initiated for selection of one Project Scientist on contractual basis for Patent Information Centre. The project will be implemented after appointment of the Project Scientist.

Documentation Centre-cum-Library

This Department has a Documentation Centre-cum-Library which establishes a close link with the Research Activities in the State and provides up-to-date information to Research Scientists in various fields of specialization. The Library has a good number of Books and Journals. State Council on S&T is also regularly subscribing Magazine, Journals and Books for the Library.

DEVELOPMENT OF BIOTECHNOLOGY

Biotechnology is a frontier area of technology with immense benefits to society in diverse areas such as Food Security, Nutritional Supplementation, Health Care productions and industrial applications. Considering the diversified resources of the State, the cutting edge technology has a potential to make a significant contribution to the economy of the State.

- Research grant has been sanctioned to twelve Research & Development projects in Biotechnology.
- Financial support has been provided for holding Workshops/ Seminars etc. on Biotechnology.
- 32 scholarships have been provided to students @ Rs. 2,000/- per month pursuing Post-Graduation studies in Biotechnology in different Universities and College of the State.
- Government of Odisha is developing a state of the art Biotech Pharma IT Park (Konark Knowledge Park) over an area of 64.613 acres at Mouza- Andharua under Bhubaneswar Tahasil in a Public private Partnership (PPP) mode. The project has been handed over to Odisha Industrial infrastructure Development Corporation (IDCO), Bhubaneswar as the nodal agency for execution as per the Lease-cum- Development Agreement.
- Within this Park, a Biotechnology Incubation Centre (BTIC) will be developed over an area of 9.753 acres of land by the State Government for use by researchers, entrepreneurs and students.
- The Sub-Scheme "Skill and Entrepreneurship Development Programme (SEDP)" under the Scheme "Development of Biotechnology" has been concurred in by the Finance Department for conducting SEDP.
- A team of three Officers of this Department participated in Bangalore BIO-2014 held from 10th to 12th February, 2014 at The Lalit Ashok, Bangalore, India.

ODISHA RENEWABLE ENERGY DEVELOPMENT AGENCY

Odisha Renewable Energy Development Agency (OREDA), under the Department of Science & Technology, Government of Odisha is a society constituted under Societies Registration Act-1860. The main objectives of this Agency in the development of New and Renewable Source of Energy are:

- to encourage the development and accelerated utilization of renewable energy sources wherever they are technically and economically viable.
- to improve the access to and availability of renewable , decentralized sources of energy particularly for the rural population.
- to contribute towards balanced rural and urban development as well as development of backward, hilly and tribal areas by enabling the use of locally available decentralized renewable energy sources and to create gainful employment opportunity with due importance for ensuring access to woman and other disadvantaged group to employment opportunities.
- to reduce environmental degradation resulting from deforestation.

Wind Power Projects

The estimated wind power potential in Odisha is about 800 MW. Resource assessments are being taken up in 9 locations and steps are being taken up to install another 1 met mast. The programme is supported by Centre for Wind Energy Technology (C-WET), Chennai, an organization under Ministry of New and Renewable Energy (MNRE), GOI, New Delhi.

SPV Power Plant

Roof Top solar PV Power Plant of 274 KWP of different capacity have been installed and commissioned in different Govt. building. i.e. Residential School Hostels, Public Health Centres, etc. to avoid power deficit. For the purpose Rs.449.51 lakh have been spent.

Installation of 161 Nos. of 2.5 KWP capacity Roof Top Solar PV Power Plant is being taken up in the power deficient police stations of the State under CCTN Project of SCRB. Director, SCRB has released 584.03 lakhs for the purpose.

Installation of Dual Pump Drinking Water Supply.

Installation of 1762 no of solar energy based Dual Pump Drinking Water Systems in 18 IAP district of the State is being taken up for supply of uninterrupted water supply to the inhabitant of the remote villages.

Distribution of Solar Lantern

11254 Nos. of 10 WP CFL based Solar Lantern have been supplied and distributed among the selected weavers of the State to enhance working hours losses due to power failure. For this purpose Director, Textile and Handloom, Bhubaneswar had placed funds of Rs.422.31 lakhs.

Similarly 6155 nos. of 10 WP CFL Solar Lantern have been supplied and distributed among the selected handicraft artisans of the State to enhance working hours losses due to power failure. For this purpose Director, Handicraft and Cottage Industries, Bhubaneswar had placed of Rs.320.34 lakhs.

National Biogas and Manure Management Programme (NBMMP)

The National Biogas and Manure Management Programme (NBMMP) is a centrally sponsored programme and a part of the 20-Point Programme. Under this programme the people are taking advantages for cooking and lighting by establishing the Biogas plant. So far 1774 nos. of biogas plants have been set up during the financial year 2013-14.

Decentralized Distributed Generation

Following discontinuance of RVEP, by MNRE, OREDA submitted DPRs for 7 village electrification projects under Decentralized Distribution Generation (DDG) scheme being implemented by Ministry of Power under RGGVY. MoP provides 90% subsidy under the scheme and for the balance 10% an entrepreneur needs to be selected through EoI. However in our case Govt. of Odisha has been requested to provide the 10% funds and OREDA to act as entrepreneur for all other activities. In the mean while tripartite agreement documents is being framed up for submission to REC.

List of sanction villages.

SI No	Name of the village	District	Ammt. Sanctioned (lakh)
1	Taila	Gajapati	20.44
2	Satyanagar	Gajapati	24.67
3	Purnapani	Gajapati	39.11
4	Badapur	Gajapati	24.67
5	Tarabanga	Gajapati	38.15
6	Lanja	Gajapati	26.91
7	Duranga	Gajapati	23.62

On-grid/Off-Grid Renewable Energy Projects Solar PV Power Projects

The state of Odisha receives an average solar insolation of about 5.5 kW per Sq meter. At this rate the average capacity utilization factor is expected to be about 19%. At present 11 solar power projects have been commissioned in the state for a total capacity of 25.5 MW and 3 projects for a total capacity of 32 MW are under installation.

In the meanwhile the subject of on-grid solar power projects has been transferred to the Newly constituted Green Energy Development Corporation Ltd. (GEDCOL) a system concern of OHPC.

Under Off-Grid programmes different residential schools/Govt. Buildings are being electrified to meet the power during grid failure and in un-electrified areas.

Biomass Power Projects

At present 3 projects for a total capacity of 50.4 MW have been commissioned in the state and another project for 10 MW is under implementation.

Awareness Generation, Publicity & Exhibition during 2013-14

OREDA has also been enthusiastically participating in several different Melas / festivals in different important festive occasions of Odisha by organizing NRSE exhibitions for popularizing of NRSE devices as well as programmes.

Activity under RPO and REC in Odisha

OREDA has been designated as the State Nodal Agency for Administration of RPO in the State by the OERC. OERC had published the Renewable and Obligation and its Compliance Regulation, 2010 under section 181 (3) of the Act. The said Regulation defines Obligated Entities as "Distribution Licensees (or any entity procuring power on their behalf) and also any other person consuming electricity generated from conventional captive generating plant having capacity of 5 Mw and above for his own use and /or procure from conventional generation through open access and third party sale. The Commission has also specified the percentage of Purchase Obligation from Solar, Non-Solar and Co-generation sources in each financial year (FY) as given below.

List of obligated entities of the state

Sl No	Name of the obligated entities	Sl No	Name of the obligated entities	Sl No	Name of the obligated entities
1	Aarti Steel Ltd,	18	Eastern Steel Power Limited	35	Narbheram Power & Steel Pvt. Ltd
2	ACC Cement	19	FACOR	36	Neelachal Ispat Nigam Limited Dubri
3	Action Ispat and Power Pvt. Ltd.	20	GRIDCO	37	OCL Cement, Rajgangpur
4	Adhunik Metaliks Ltd.	21	Hindalco Industries Ltd	38	OCL India Ltd (Spong Iron works)
5	Monnet Power Company Ltd	22	IFFCO	39	Orissa Sponge Iron Ltd.
6	Aryan Ispat Ltd	23	IMFA Ltd.	40	Paradeep Phosphate ltd

7	Bhaskar Steel & Ferro Alloy Ltd.	24	J.K Paper	41	Pattnaik Steels & Alloys Ltd
8	Bhusan Power & Steel Ltd (SBP)	25	JINDAL Stainless ltd	42	Rana Sponge Ltd
9	Bhusan Steel & Strips Ltd.	26	Jindal Steel & Power Ltd. Angul	43	Rathi Steel & Power ltd
10	Ballarpur Industries Ltd.	27	IDCOL Kalinga Iron Works Ltd.	44	Rourkela steel plant
11	Bindal Sponge Ltd	28	Maheswari Ispat Ltd.	45	Scan Steel ltd
12	Birla Tyres Ltd	29	Maithan Ispat Ltd	46	Shri Mahavir Ferro Alloys Pvt. Ltd
13	Deepak Steel & Power Ltd	30	MSP Metaliks	47	Shyam DRI Power Limited
14	Yazdani Steel Power Ltd.	31	NALCO Angul	48	SMC Power Pvt Ltd
15	Emami Paper mills	32	NALCO Damanjodi	49	Sri Ganesh Metalicks Ltd.
16	Tata sponge iron Ltd. Keonjhar	33	Nava Bharat Ventures Ltd	50	Vedanta Alluminum Ltd Jharsuguda
17	Vedanta Alluminum Ltd Kalahandi	34	Viraj steel & Energy	51	Visa Steel Ltd.

ODISHA SPACE APPLICATIONS CENTRE

Odisha Space Application Centre (ORSAC) is acting as the apex body of the State for space technology applications and comprises of a pool of multidisciplinary application to undertake remote sensing, GIS, DGPS, and Communication Technology application.

The following are the brief activities of the Odisha Space Application Centre, Bhubaneswar.

GRAMSAT Project

16 Interactive Training Programmes have been conducted by the user departments from 1st April,2013 to 31st January,2014. Developmental news programmes of 39 episodes of "Sunar Odisha" and 26 episodes of "Swapnara Odisha" have been transmitted through OTV and Doordarshan Kendra, Bhubaneswar respectively.

Block Level Resource Atlas & GIS Database Generation

The web version of Block Level GIS "Odisha Sampad" has been updated. Database on High Schools, Banks and ATMs are compiled for incorporation in the Block Level Resource atlas as well as in "Odisha Sampad".

NLRMP Project

ORSAC has been a technical partner in the implementation of NLRMP in the state. Quality checking of digital cadastral maps has been carried out in the centre.

EDUSAT Programme

Class room teaching transmission on Mathematics, Science, English and Geography has been conducted for Class-IX & X students for 142 days. The restructuring of Edusat programme has been made to make the programme more effective and attractive for students.

Urban Land Information System

Urban mapping for Dhamra, Anandapur, Deogarh and Nayagarh towns has been completed.

DGPS survey of Mining Lease / coal Block Areas

DGPS survey for ten mining lease area and eleven coal block areas has been completed and submitted to the users. ORSAC has facilitated the joint survey of 39 Iron Ore and Manganese mines under the directive of Hon'ble Justice Shah Commission using Electronic Total Station (ETS).

Rajiv Gandhi National Drinking Water Mission-Bihar & Odisha State

Groundwater prospects maps for 72 sheets spread over 18 districts of Bihar has been completed and submitted to NRSC. Ground water quality maps for 15 districts of Odisha has also been completed.

Space based Information Support for Decentralized Planning (SIS-DP)

Scene-wise ortho image generation from Cartosat data has been completed for the entire state. Thematic maps on landuse, settlements, transport and drainage for 25 districts have been completed.

Survey of Forest land purposed for diversion

Vetting of forest diversion has been completed for 46 proposals. 25 proposals where survey has been carried out by other agencies have been vetted.

Natural Resources Census (2nd cycle) – Land-use Mapping of Odisha State

Landuse database of Odisha has been prepared and submitted to NRSC, Hyderabad for validation.

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Rural & Urban Health Information GIS

Health Infrastructure Information System has been developed for the state.

Landuse / land cover mapping of Similpal Tiger Reserve

The land use/land cover mapping has been completed and submitted to the Director, Similpal Tiger Reserve.

INSTITUTE OF MATHEMATICS & APPLICATIONS

The Institute of Mathematics & Applications (IMA), Bhubaneswar is functioning under the Administrative control of Science & Technology Department. The aim and objective of the Institute are given below.

- (a) To undertake fundamental research in Mathematics and its Applications.
- (b) To undertake and support inter-disciplinary research through interaction between Mathematicians and Physical / Biological / Engineering /Social Scientists.
- (c) To organize re-orientation and refresher programmes for teachers / research scholars with an up gradation in teaching / research.
- (d) To develop exchange programmes and arrange for visit of eminent Mathematicians / Scientists in related fields.
- (e) To establish a Multi-purpose Documentation-cum-Library Centre with Multi-purpose computing facility.
- (f) To organize publication of research journals /monographs / proceedings / papers in Mathematics and applications.
- (g) To provide for search and nurturing of talents in Mathematics.
- (h) To investigate into India's mathematical traditions.
- (i) To evaluate the status of teaching and research in mathematics in Scholars / Colleges / Universities in collaboration with such authorities and make recommendations to the authorities for their up gradation.
- (j) To establish interaction with other Institutions / Universities / Academic Societies of higher learning both at the National and International level.
- (k) To provide guidance in research for Doctoral and Post-doctoral Scholars.
- (l) To honor eminent Mathematicians of the State by Institutional Awards and Fellowship.
- (m) To provide consultancy to user industries and to render technical advice and service to Government / other Institutions.
- (n) To perform all such other cases and take up all such steps as may further all or and of the aforesaid objectives.

PERFORMANCE OF IMA DURING THE YEAR 2013-14

Research output of the Institute

One has been awarded D. Sc degree in Mathematics and 08 Research Scholars have been awarded Ph. D degree under the supervision of the faculty members of the institute. 03 Research Scholars have been submitted their Ph.D thesis under the supervision of our faculty members 22 nos of research papers were published in journals by faculty/guest faculty/visiting faculty.

Teaching

The Institute offers three years B.Sc (Hons) programme in Mathematics & Computing and two years M.A / M.Sc Programme in Computational finance to produce competent financial engineers to face innovative financial market.

Nurture Programme

The Institute has been running the Rural Mathematics Talent Search Programme since 2003. So far more than 1400 students have passed through this programme. Some of them have done extremely well in the high school certificate examinations and pursuing their higher education in reputed institutions.

Training Camps

The State level training programmes are organized by the Institute to improve the performance of different categories of students and their guides.

Summer Mathematics Training Camps

The State level Summer Mathematics Training Camp was held in the Institute of Mathematics & Applications campus from 30/05 2012 to 08/06/2012 90 children from various schools of the State attended the camp.

Interactive Mathematics training Programme for Under Graduate and Post Graduate Students:

The institute organizes Interactive Mathematics Training Camp for undergraduate students in an area of rural setting but selected from all over Odisha. These camps are held at vacation time of the year.

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From 23rd to 27th Dec' 2013 a state level Interactive Camp was organized in the Institute of Mathematics & Applications campus for undergraduate students. 40 students from various colleges of Odisha participated in the camp.

Seminar / Conference / Symposium

The Institute organizes Seminars, Workshops and conferences etc. in regular intervals.

Sunday Morning Problem Solving Classes for School Children:

Every Sunday the Institute conducts Problem Solving classes for school children. In these classes the children were taught the techniques and methods of problem solving of non traditional and non routine types of mathematics problems which are not generally taught in their schools. Students of both urban and rural areas are attending these classes. A bus has been arranged for this purpose. In future these will be continued more effectively.

Programme for SC/ST students

The Institute of Mathematics & Applications has been conducting various programmes for Capacity Buildings for tribal schools in the State. In collaboration with SC & ST Development Department, Govt. of Odisha, Teachers Training programme and Tribal Students council ling Programme has been taken by IMA, Bhubaneswar.

Summer Project

Post Graduate B. Tech and under graduate students of different Institute like NIT, Rourkela, Sambalpur University, Utkal University etc. have come to Institute of Mathematics & Applications for their summer project/internship.

Nodal Agency of State Level P.G Scholarship in Basic Sciences

Institute of Mathematics & Applications, Bhubaneswar coordinates for award of the scholarship offered by State Council on Science & Technology Department, Govt. of Odisha to students perusing P.G. in Basic Sciences in the State.

INSTITUTE OF MATERIALS SCIENCE

Institute of Material Sciences (IMS) is to execute various well-defined research programmes in the frontier field of materials science and technology including interdisciplinary research programme on advanced materials, their development, optimization, production and utilization. In order to exploit huge untapped natural resource materials available in Odisha and to upgrade these to value added products, it is necessary to provide adequate research facilities for the above research and development programme. The main objective of the Institute are;

1. To carry out well defined research and development programme on frontier areas of materials science and technology and to conduct interdisciplinary research on special materials, their development, optimization, production and utilization.
2. To develop the technical know-how for the indigenous production of already known special purpose materials as well as to develop new ones.

3. To establish laboratory facilities for the preparation of advanced materials in required forms, characterization and testing of special materials and to cater service to institutes, R & D organizations and industries to develop scientific and technical man power to keep the special requirement of country.
4. To train scientists and engineers in chosen areas requiring specialized skills in materials science.
5. To provide advisory, consultancy, research and technical services to government agencies, industries etc.
6. To supply scientific engineering data on well characterized materials.
7. To relate physical and chemical properties of materials to their behavior and their interaction with the environment.
8. To create a unique facility for a source center of materials database.
9. To organize seminars, symposia and short-term courses in materials science and related subjects.
10. To create administrative and experimental research infrastructure with suitable arrangements for placing instruments division wise as per the different research programme / projects.
11. To create / develop young human resource at higher educational level (Ph.D and Post doctoral position) in the advanced area of developing new futuristic materials for microelectronics / spintronics / photonics using our own untapped resource available in our state.
12. To attract different funding agencies for financial support to develop / create new and advanced research infrastructure at national level in frontier field of materials science and engineering.

Activities report 2013-14:-

1. Two research scholars of IMS (Mrs. S. Samantary & Ms. P. P. Rout) have qualified to submit their Ph.D. thesis (entailed "Studies on dielectric behavior of rare earth based pervoskite manganites" & "Ferroelectric behavior of doped rare earth based multiferroics" respectively) to Utkal University.
2. One research scholar of IMS (Dr. S.K. Pradhan) joined in Norfolk state University, USA as Asst. Research Professor where mutual collaborating research of IMS is ongoing.
3. Installation and continues operation (24 hours) of high temperature Muffle furnace (1700⁰C) has been used to prepare new samples of solid oxide fuel cell bulk ceramic material in IMS laboratory.

4. IMS has take up the construction of boundary wall for its own campus through IDCO on Ac. 2.000 of land (Plot No. 4 (Pt), Khata No. 619, Mz-Chandrasekharpur) allotted by GA to S & T Dept..
5. Six research papers of IMS are published in international journal.
6. Conference and seminar attended: Three different conference were attended by IMS researchers.
7. A dedicated three phase power line has been drawn to IMS laboratory with a separate 11kVA transformer placed in PSP premises.
8. TSP programme has been initiated through scientific exposure visit programme covering 318 schools (selecting one best student from each school) functioning under the administrative control of ST & SC Development Department.

PATHANI SAMANTA PLANETARIUM

Pathani Samanta Planetarium (PSP) is a premier institute of the state for popularization of science in general, astronomy, astro-physics and space science in particular under the administrative control of Science and Technology Department, Government of Odisha.

Pathani Samanta Planetarium, Bhubaneswar was inaugurated on 8th January 1990. Since its inauguration, PSP has increased its activities manifold and it has established a link throughout the state. Various programmes are being conducted throughout the state to meet the objective of the Planetarium programmes like Night Sky Watch Programme through Telescope, Popular Lecturers, Seminars, Workshop etc.

Visitor & Revenue Collection during 2013-14.

	PSP Show
Total Show	1131
No. of Adult Visited	89125
No. of Child Visited	66391
Total no. of Person Visited	155516
Total Amount Collected (in Rs.)	2796520

The main objective and function of the Planetarium are to bring to the public the awe wonders of the universe through the planetarium shows. At present, Pathani Samanta Planetarium is showing planetarium shows in three languages with different programmes of duration 25 to 40 minutes such as "Akashara Asaranti

katha" (in odia) "Viswora rahasya" (in Hindi) and "IBEX : Search for the edge of the Solar System" (in English). In the open air, the Astronomy Park established in the premises of PSP with many astronomical models are being appreciated by student community, teacher community & general public. Like every year, this year on 13th December, the birth Anniversary of Pathani Samanta, 20 selected Young Astronomers of the state were awarded by the Commissioner-cum- Secretary to Govt. S & T Deptt. and the Chairman, Pathani Samanta Planetarium. Students covering all most all districts participate in the YATS programme. They are encouraged to pursue science in general, astronomy astrophysics & space science in particular as a career and take up future research activities.

Besides, presenting Planetarium shows, PSP has taken up a number of activities for popularization of science, specifically astronomy and for creating consciousness and its culture in the state. Further, it is also deeply engrossed in research and development works. Some of the activities include Night Sky Watch (NSW) programme, publication of wall magazine 'Chhayapath' Teachers Training programme for talented secondary school Students, Astronomy Olympiad, demonstration of astronomical models, Amateur astronomer's meet, workshops, seminars, symposia monthly meeting of SCAAA, etc.

- (i) An new planetarium is being constructed at Burla in the District of Sambalpur.
- (ii) An Information Centre of 18,000 Sq.ft. is being constructed at PSP, Bhubaneswar. Interactive science models, exhibits, posters, etc. shall be housed in the Information Centre.
- (iii) An Utility Centre is also being constructed at PSP, Bhubaneswar where facilities like restaurant, bookshop, class room, rest room etc. will be available.

ODISHA BIGYAN ACADEMY

The aims and objectives of Odisha Bigyan Academy (OBA) are to promote and popularize science, amongst people of Odisha, based on informed knowledge emanating from various frontier fields of Science & Technology, so that scientific temper and awareness could be engendered in the public domain.

During the financial year 2013-14, Odisha Bigyan Academy has organized the following important activities.

- Twelve issues of monthly popular science magazine in Odia "**Bigyan Diganta**" have been released and distributed to all Government recognized High Schools of the State free of cost.
- Four issues of quarterly magazine in abridged version of popular science magazine "Bigyan Diganta" have been published in Braille odia script and distributed to the blind students and their institutions free of cost.

- Twelve issues of monthly Science Magazine "Science Horizon" in English language have been released and distributed to Govt. English Medium High Schools and +2 Science College of the State free of cost.
- Workshop on "Innovation of Science & Technology" jointly organized by OBA & Science & Technology Department on 10.05.2013.
- Celebration of "National Energy Conservation Day" on 14.12.2013 at Capital High School, Unit-III, Bhubaneswar.
- District level Inter-active sessions of students and science teachers are organized at different Government High Schools of the State.
- Popular talk on "Aluminum Technology" by Dr. Nihar Ranjan Mohanty, Director, NALCO on 16.02.2014.
- Celebration of "National Science Day" on 27-28 Feb, 2014.
- National Seminar on "Recent Trends in Physics" at Utkal University, Vanivihar on 08.03.2014.

Honour & Awards :

In a special investiture ceremony, the following awards are awarded to the eminent scientists and popular science writers in every year.

- (a) "Biju Patnaik Award for Scientific Excellence" awarded to One scientists
- (b) "Samanta Chandra Sekhar Award" awarded to Four scientists
- (c) "Odisha Young Scientists Award" awarded to Three scientists
- (d) "Pranakrushna Parija Popular Science Award" awarded to two popular science writers
- (e) Four Senior Eminent Scientists felicitated.

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