

## INSTITUTE AND CONSTITUENT COLLEGES

### INSTITUTE OF SELF ORGANISING SYSTEMS & BIO-PHYSICS

The Institute was established in the year 1986 and is now in the process of closure. It was a purely research institute within the university system dedicated to pursue interdisciplinary research in newly emerging and unconventional areas. The primary aim of the institute was to investigate biological phenomena using techniques of physical sciences with a view to obtain an integrated vision of science. The Institute also trained students in new methodology and equipped them with skills to face challenges encountered in scientific endeavours. The institute admitted students from various science departments in its research activities. The research students could register in respective departments for their M.Phil. and Ph.D. degrees. The faculty members carried out research work in diverse fields and collaborated with other departments in the university and with national and international institutions. Its faculty members have been honoured in both national and international forums for doing original and quality work. The students trained by the institute have gained employment in prestigious institutions. One student received the young scientist's award on the work carried out for his Ph.D. dissertation.

**Head :** vacant

**Courses Conducted :** M.Phil. and Ph.D

*Ph.D.*

1. Miss. B.Borah on the dissertation entitled "Development of the Auditory System and Acoustically mediated Behaviour in Anurans"

2. Mr. Biswajit Pal on the dissertation entitled "Spectroscopic Studies of Proteins and Azo Dyes: Protein Secondary Structure, Structural Changes in Dyes and Dye-Protein interactions"

**Faculty :**

Professor : R.P.Bajpai, M.Sc.(Alig.), Ph.D.(Glas.)  
Readers : Vinod Singh, M.Sc.,Ph.D.(Kanpur),  
Dr.Satish Kumar, M.Sc.(Ban.), Ph.D.(Utkal)  
Dr.Debjani Roy, M.Sc.(Gauhati), Ph.D.(NEHU)

## Seminar/Conferences :

Dr.R.P.Bajpai, (I) attended the International Symposium on Biophotons in Germany from Aug. 22- 26, 1998 and presented a paper entitled "Advantages with the description of Biophotons as squeezed state of light". (ii) Attended the International Symposium on Food Quality in Germany from Aug. 30- 31, 1998 and presented a paper entitled "Possible roles of Biophotons in food industry".

Dr. Debjani Roy, (I) attended the International Conference on Biodiversity Conservation Prioritisation Programme at WWF-Nature India, New Delhi from April 27-28, 1998 and presented a paper entitled "Prioritisation of Biodiversity Rich Sites in Meghalaya". (ii) attended the workshop on Peoples' Participation in Biodiversity Conservation at Shillong from March 4-6, 1999 and delivered a talk entitled "Measures for Biodiversity Conservation and Role of NGO's".

## Publications:

Bajpai, R P, Kumar,S., and Sivadasan, V.A. (1998). Biophoton Emission in the Evolution of a Squeezed State of Frequency Stable Damped Oscillator, *Applied Mathematics and Computation*. 93,277-288.

Bajpai,R.P. Coherent Nature of Biophotons: Experimental Evidence and Phenomenological Model: In Chang , J.J., Fisch,J., Popp,F.A. Ed. *Biophotons*. Kluwer Acad. Pub. 1998. Pp323-339.

Roy, D., Sarma, A., Borah,B., and Bannette, B.W.(1998). Significance of Biometric ratios and Bioacoustics Call Analysis in Amphibian Systematics, *Journal of Bombay Natural History Society*. 95 (1),19-32.

## Research Programmes :

On going projects include those supported by DST, SERC and WWF India.

## Other Activities:

1. Dr. S. Kumar taught "Quantum Mechanics I" to M.Sc. (Physics) in the department of Physics.
2. Dr. Debjani Roy (a) visited Smithsonian Institute Washington D.C. and the Smithsonian Tropical Research Institute, Panama from August 1 - 31, 1998, (b) visited the Department of Zoology, University of Texas at Austin from Sept 1-5, 1998, (c) visited the Department of Zoology, University of Oxford from Sept 6-14, 1998, (d) Participated in the meeting on Biotechnology for Woman : A vision for 21st Century, New Delhi on November 11, 1998, (e) Participated in the meeting on Using Satellite Imagery Data for Biodiversity Maps at IIRS, Dehradun from Dec. 8-10, 1998.

3. Dr. R.P.Bajpai visited the International Institute of Biophysics, Neuss Germany from August 15-October 31, 1998.

4. Dr. Vinod Singh (a) visited Protein Core Laboratory, Department of Biological Sciences, Wichita State University, Wichita KS from April 6 to June 20, 1998, (b) visited Protein Core Laboratory, Department of Biological Sciences, Wichita State University, Wichita KS from February 1 to March 31, 1999.

## PACHHUNGA UNIVERSITY COLLEGE

Pachhunga University College the oldest College in Mizoram was founded in 1958 and is now 41 years old. It was initially a Private College and in 1967 was made a Government College under the Composite State of Assam. It remained a Government College till 1979. When it was taken over as a Constituent College of North - Eastern Hill University, with a view to making it a pace-setting institution in the region. This is the Premier College in the State of Mizoram offering Pass & Honours undergraduate courses in eighteen subject of Sciences, Arts and Commerce.

The College occupies a land area of 730 acres with trees of many species. It is ideally located about three kilometres from the heart of the Aizawl town, and well connected by the public transport system.

### **Courses of Graduate Studies :**

The pattern of courses in this College falls mainly into three broad categories : Arts, Sciences and Commerce. The College ran +2 level Arts, Sciences and Commerce courses till 1996 and since they have been dropped, as the +2 level in the State is shifted to Higher Secondary Schools.

At present the College offers Undergraduate Courses in Art, Science and Commerce. Under the Arts Courses, subjects covered are Literature (English/Mizo), History and Philosophy. Under Social Sciences come Economics, Sociology, Political Sciences, Geography, Education and Psychology. Under the Science stream, Physics, Chemistry, Mathematics, Geology, Botany, Zoology and Statistics are offered. Commerce subjects include Banking, Computer Science, Accountancy and Economics. It is noteworthy to mention that Honours level courses are offered in all the existing subjects in Arts, Sciences and Commerce, only in this College in Mizoram. The subject combination in Arts is not restricted and students are given wide options. In the Science stream subject combinations are restricted due to obvious reasons.

## Enrolment of Students :

During the last five years (1992-96) the total enrolment of students per year is over 1200. The number of students in Science stream per year on the average is over 600. The enrolment in the Arts stream is gradually increasing, although it is also being introduced in number of Colleges of Mizoram. The Commerce stream in the College attracts only a few students and the enrolment remains the same over the years.

Ninty five percent of the students belong to schedule tribe and are from backward, and border areas of the State. The ratio of female students to male students is 1:3.

The admission of students to the different courses is generally based on merit. The minimum requirement for admission to Honours course in the degree level is 45% marks in the Higher Secondary Examination in the subject concerned. Each Science Department can accommodate 20 students in Honours/Major courses.

## Performance of the Students :

Pachhunga University College has contributed immensely for the development of Higher Education particularly the Science Education in Mizoram. Till recently the College as the only institute providing +2 level course in Science to the students, who after completing the course entered the professional education namely Engineering, Medicine and Agriculture, and Veterinary. The graduates passed out from this College in Arts, Sciences and Commerce are of high quality who joined Civil/Administrative services, Teaching and other jobs. This College is an important feeder institution for the Post-graduate programme in Shillong and Aizawl Campuses of the University.

Over the last few years the pass percentage of the students in the University Examination at the degree level Honours courses have been increasing.