**DEPARTMENT OF ELECTRONICS**

**ANNUAL REPORT 2012-13**

1. ACADEMIC ACTIVITIES
2. Short-term Training Programs

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **Name / Topic of the program** | **Co-ordinator** | **Objectives** | **Targeted Audience** | **No. of partici-pants** | **Date** |
| 1 | Acoustic measurements and calibration of audiological equipment | Mr. S.R.Srinivas, Junior Technical Officer | To give hands on training in measurements and calibration | PG students, Mysore Medical college, Mysore | 1 | 08.06.2012 |
| 2 | -do- | -do- | -do- | PG Students, ENT Dept.,KIMS, Hubli | 2 | 24.08.2012 |
| 3 | -do- | -do- | -do- | PG Students, ENT Dept.,KIMS, Hubli | 2 | 18.08.2012 |
| 4 | -do- | -do- | -do- | PG student, KIMS, Hubli | 1 | 23.10.2012 |
| 5 | -do- | -do- | -do- | PG student, KIMS, Hubli | 2 | 08.11.2012 |
| 6 | -do- | -do- | -do- | PG student, KIMS, Hubli | 1 | 08.11.2012 |
| 7 | -do- | -do- | -do- | PG student, Mysore Medical College, Mysore | 1 | 13.12.2012 |
| 8 | -do- | -do- | -do- | PG Student, Sri Devaraj Urs Medical College, Kolar | 1 | 13.12.2012 |
| 9 | -do- | -do- | -do- | PG student, Mysore Medical College, Mysore | 1 | 27.12.2012 |
| 10 | -do- | -do- | -do- | PG student, Mysore Medical College, Mysore | 1 | 22.02.2013 |

1. Orientation Programs -- Nil
2. Clinical observation -- Nil
3. Seminars/ Conferences/ Workshops -- Nil
4. Guest Lectures -- Nil
5. Additional Academic services rendered by the Faculty and Staff
6. Invited Talks
7. Prof. Ajish K. Abraham delivered a technical talk on “Communication technologies for persons with communication disorders” at Sampark 2012 organized at GSS Institute of Engineering and Technology for women on 08.05.2012
8. Prof. Ajish K. Abraham delivered a special lecture on “Digital hearing aid and Cochlear implants” on 18.04.2012 for M.Tech Biomedical Engineering students at SJCE, Mysore.
9. Prof. Ajish K. Abraham delivered a special lecture on “Instrumentation for Speech Language Pathology” on 19.04.2012 for M.Tech Biomedical Engineering students at SJCE, Mysore.
10. Prof. Ajish K. Abraham delivered a Invited Talk on “Speech Signal Processing” at the National Conference on Modern Trends in Electronics Communication and Signal Processing at Piravom, Kerala on 04.08.2012 organised jointly by Council of Scientific and Industrial Research, New Delhi.
11. Prof. Ajish K. Abraham delivered a Invited Talk on “An overview of technologies used for signal generation, Signal Processing and Signal Transduction and Recent advances in audiometer and Immittance” on 10.09.2012 in the National Seminar on Recent advances in auditory technology organized at AIISH, Mysore.
12. Prof. Ajish K. Abraham delivered a technical talk on “Electro Acoustic System” in the Pulse user meet – 2012 organized at Bangalore on 31.10.2012 jointly by Bruel & Kjaer sound and vibration measurement, Denmark and Jost’s Engineering Co., Bangalore.
13. Prof. Ajish K. Abraham delivered a Invited Talk on “Infrastructure required to use Video conferencing, Skype, Webinars and other internet options at the sender and receiver end” at the National Seminar on Tele Assessment and intervention in Communication Disorders organized at AIISH, Mysore from 21-22 February 2013.
14. Prof. Ajish K. Abraham delivered a Invited Talk on “Basic concepts/Technology of Speech Analysis and Synthesis” in the National Workshop on Speech synthesis organised at AIISH, Mysore on 14th and 15th March 2013.
15. Curriculum Development -- Nil
16. Development of Materials to support Learning -- Nil
17. Service in Academic bodies of other Organizations

Prof. Ajish K. Abraham :-

1. Member, Board of Examiners, University of Mysore
2. Member, Board of Examiners, University of Bangalore
3. Member, Board of Examiners, University of Kerala
4. Membership in Professional Organizations/ Associations

Prof. Ajish K. Abraham :-

1. Member, Acoustic Standards Committee, Bureau of Indian Standards, New Delhi
2. Member, Institution of Engineers (India)
3. Participation in committees/Taskforces and Panels set up by other organizations/agencies
4. Ajish K. Abraham served as a member of expert committee for condemnation of technical equipments at Central Institute of Indian Languages, Mysore and attended the meeting on 2.05.2012 and on 8.02.2013.
5. Ajish K. Abraham served as an acoustic expert in the committee for design of Audiometric Test Room at NIMHANS, Bangalore and attended the meeting on 11.09.2012.
6. **RESEARCH ACTIVITIES**
7. **Research projects**
8. Completed Research Projects : Nil
9. New research projects initiated during 2012-13

(a) Title : Design and Development of Assistive

Device for Museum Access to persons with hearing impairment.

(b) Objectives : To develop an assistive device for use of

museum visitors with HI

(c)Department : Electronics

(d) Principal Investigator : Sri. Ajish K Abraham

& Co-investigators : Mr. N.Manohar.

e) Amount ; 5.68 lakhs

(f) Status : Started on 24.08.12

(g) Summary of work done in March 2013 : Design finalised, fabrication in progress

1. On-going Research Projects

:

**Project work of B.Tech. students from Vishweshwaraiah Technological University**

|  |  |  |
| --- | --- | --- |
| Title | Objectives | Guide & Investigator(s) |
| Active noise reduction audiometry | To develop an active noise reduction system for screening audiometry | Prof. Ajish K. Abraham  Anitha V Raj  Spurthy K R  Deekash Nayak  Supriya T N |
| Design and Development of frequency modulation based class room amplification system | To develop a class room amplification system for children with hearing impairment | Prof. Ajish K. Abraham  Ms. G. Tejaswini  Ms. Akshatha S  Ms. Bindu Raj |
| Fall detection system for speech impaired and Elderly person | To develop a system to provide emergency help to the speech impaired and elderly persons when their fall is detected | Prof. Ajish K. Abraham  Ms. Amulya C S  Ms. Amulya K J  Rashmi G M |

**B. Doctoral and Post doctoral Programs**

1. Degree Awarded - Nil
2. Thesis Submitted- Nil
3. Under Progress -

“Identification and quantification of temporal distortion in hearing aid output speech” by Prof. Ajish K. Abraham under the guidance of Dr. M. Jayaram, Senior Professor, NIMHANS and Dr. M. Sukumar, Professor, SJCE, Mysore.

1. **Research Papers Presented at National/International Conference/Seminar/Scientific Forums – Nil**

1. **Research Papers Published -**
2. Papers Published in National /International Journals
3. Subramanya M.B and Ajish K. Abraham (2012) Active Noise Cancellation of HVAC System Noise in Audiometric Test Rooms. *Electronic Design and Signal Processing ,* 48-54- Narosa Publishing House Pvt. Ltd, New Delhi.
4. Ajish K. Abraham (2012) Effect of fast and slow compression on voice onset time in hearing aid processed speech. *Journal of All India Institute of Speech and hearing*, 31, 202-208
5. Ajish K. Abraham (2012) Transformation of voice onset time in hearing aid processed speech and its relation with number of channels in hearing aids. *Journal of All India Institute of Speech and hearing*, 31, 220-225
6. Papers Published in National/International Conference/Seminar Proceedings

: Nil

1. Research Papers in press : Nil
2. Books published : Nil
3. Book chapters published : Nil
4. Books in press : Nil
5. Books/ Manuals/Seminar proceeding edited : Nil
6. Journal Editorship : : Nil
7. Scholarly reviewing activities : Nil
8. **CLINICAL SERVICES**
9. General Clinical Services and Statistics of

Various Departments

1. Speech and Language Assessment : Nil
2. Speech and Language Rehabilitation : Nil
3. Hearing Evaluation : Nil
4. Hearing Aid Trial : Nil
5. Hearing Aid Dispensing : Nil
6. Psychological Evaluation : Nil
7. Counselling and Guidance : Nil
8. Ear Moulds : Nil
9. Hearing Aid Issue and Electro-Acoustic Evaluation

(ADIP Scheme, Ministry of Social justice) : a. At AIISH – 1849 hearing aids

b. At camps – 506 hearing aids

c. At outreach centres of Akkihebbal, Hullahalli & Gumbahalli – 331 hearing aids

1. AIISH Hearing Aid Dispensing Scheme :1711 hearing aids
2. Infant Screening :Nil
3. School Screening :Nil

B) Specialized Clinical Services of Departments :Nil

C) Clinical Support Services to patients and Family : Nil

D) Clinical electronic services :

i) Electro- Acoustic evaluation -- Total of 123 hearing aids received from :-

i. DRC, Chengalpet,

ii. State Commissioner for

differently abled, Tamil Nadu.

iii. District Project Officer, SSA,

Malappuram, Kerala

iv. Keltron Electro Ceramics Ltd,

Kuttipuram, Mallapuram, Kerala

v. Cadential Technologies Ltd., Bangalore

ii) Hearing Aid Dispensing – 1. 2686 hearing aids under ADIP scheme

2. 1711 hearing aids under AIISH scheme

iii)Repair of Hearing Aids – Total of 858 hearing aids

1. Body worn hearing aids – 417
2. BTE Hearing aids – 441
3. **EXTENSION ACTIVITIES**
4. Rehabilitation & Education through Distance Mode :Providing technical support for

tele-rehabilitation services of CREDM Department.

1. Prevention of communication Disorders : Providing technical support for

village outreach program of POCD Department.

1. Camps

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl. No.** | **Date** | **Venue of camp** | **No. of hearing aids distributed** |
| 1 | 28.11.12 | Nanjangud, Mysore | 12 |
| 2 | 15.12.12 | Thirthahalli, Shimoga | 161 |
| 3 | 16.12.12 | Shimoga Town, Shimoga | 141 |
| 4 | 10.01.13 | Karkala, Udupi | 35 |
| 5 | 19.01.13 | Andnoott, Lakshadweep | 32 |
| 6 | 21.01.13 | Kilton Island, Lakshadweep | 9 |
| 7 | 23.01.13 | Kawaratti, Lakshadweep | 5 |
| 8 | 14.03.13 | Hospet, Bellary | 111 |
|  | **TOTAL** | | **506** |

1. Orientation Programs : Nil

E) Public Lecture Series : Nil

1. **TECHNOLOGICAL CONSULTANCY SERVICES**
2. Acoustic consultancy :
3. Calibration of “Triveni” diagnostic audiometer received from Speech and Hearing Clinic, Madikeri, Karnataka
4. Consultancy to National institute for Empowerment of Persons with Multiple disabilities (NIEPMD) Chennai for the construction of new audiometric rooms.

1. Noise measurement at Karnataka Silk Industries Corporation Factory, Vidyaranyapuram, Mysore
2. Noise measurement of Patient monitoring system, manufactured by Skanray Medical Systems (P) Ltd., Mysore.
3. Calibration of Elkon Audiometer received from KIMS, Hubli
4. Noise analysis of patient monitoring system manufactured by Skanray Medical Systems (P) Ltd., Mysore.
5. Consultancy for construction of Audiometric test room at DDRC, Mysore
6. **CENTRAL FACILITIES**
7. Library and Information Services
8. Material Development
9. **AWARDS AND HONORS RECEIVED BY :** NIL

**FACULTY AND STAFF**

1. **EXTRA CURRICULAR ACTIVITIES**
2. NSS
3. AIISH GYMKHANA
4. Others
5. **MAJOR EVENTS OF THE YEAR :**
6. Successfully Implemented finger print attendance system for Clinical

Postings of AIISH Students.

2. Successfully implemented Online Application submission portal for admissions 2013 to B.Sc and M.Sc programs at the institute.

1. **EMINENT VISITORS :** NIL
2. **ANY OTHER**