**DEPARTMENT OF ELECTRONICS**

**ANNUAL REPORT 2014-15**

1. ACADEMIC ACTIVITIES
2. Short-term Training Programs

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| --- | --- | --- | --- | --- | --- | --- |
| **Sl. No.** | **Name / Topic of the program** | **Co-ordinator** | **Objectives** | **Targeted Audience** | **Name of participants** | **Date** |
| 1 | Signal Processing strategies in Hearing aids | Prof. Ajish K Abraham | To give hands on training in signal processing on hearing aids | Engineers/  Hearing aid professionals | Mrs. Hemangi Shinde, Asst.Professor,  AISSMS, Pune | 01.09.14  to 03.09.14 |
| 2 | Calibration of audiometric equipment and design of sound treated rooms | Mr. S.R.Srinivas, Junior Technical Officer | To give hands on training in measurements and calibration | Engineers/  Hearing aid professionals | Mr. Shridhar, Electrical & Electronics Engineer,  NIEPMD, Chennai | 25.08.2014 to 28.08.2014 |

1. Clinical observation -- Nil
2. Seminars/ Conferences/ Workshops --

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| --- | --- | --- | --- | --- | --- | --- |
| **Sl.No** | **Theme/Topic** | **Co-ordinator** | **Objectives** | **No. of participants** | **Target Audience** | **Date** |
| 1 | National Symposium on Acoustics – NSA 2014 | Ajish K Abraham | To have a deep insight on the acoustic activities in the country and to trigger future research activities in this field | 208 | Acoustic Professionals & Researchers in the country | 12th – 14th Nov 2014 |
| 2 | Workshop on “Signal processing with Matlab” | N. Manohar | To deliver practical training on how to use Matlab for Digital Signal Processing | 50 | Staff & Research students of AIISH | 19th to 20th Feb 2015 |
| 3 | Orientation program on smart class rooms | Ajish K Abraham | Orientation on new technological/ teaching aids | 75 | Faculty & Research students of AIISH | 26th February 2015 |

1. Staff Enrichment / Inhouse training programmes - Nil
2. Guest Lectures -- Nil
3. Additional Academic services rendered by the Faculty and Staff
4. Invited Talks
5. Prof. Ajish K. Abraham delivered a special lecture on “Digital Hearing aids & Cochlear implants” on 2.04.2014 for M.Tech students at SJCE, Mysore.
6. Prof. Ajish K. Abraham delivered a special lecture on “Instruments in Speech Language Pathology” on 04.04.2014 for M.Tech students at SJCE, Mysore.
7. Prof. Ajish K Abraham delivered a talk on “Signals & Transducers” in the National Seminar on Basic Audiological Assessment on 8th October, 2014 organized by Dept. of Audiology, AIISH.
8. Prof. Ajish K Abraham delivered a talk on “Instrumentation in Audiology” in the National Seminar on Basic Audiological Assessment on 10th October, 2014 organized by Dept. of Audiology, AIISH.
9. Prof. Ajish K Abraham was the chief guest at the inaugural function of Electronics & Communication Engineering Association at NIE, Mysore and delivered a technical talk on “Research needs for Instrumentation in Speech & Hearing” on 30th October, 2014
10. Curriculum Development -- Nil
11. Development of Materials to support Learning -- Nil
12. 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. Member, Board of Examiners, Kerala University of Health

Sciences

1. Participation in committees/Taskforces and Panels set up by other organizations/agencies
2. Prof. Ajish K Abraham served as member in the RCI core committee meeting for syllabus revision of DHA & ET course held at AIISH, Mysore on 26.06.14.
3. Prof. Ajish K Abraham visited IIT Guwahati on 25th & 26th to formulate the collaborative research proposal with IIT Guwahati.
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. Life Member, Acoustical Society of India
4. **RESEARCH ACTIVITIES**
5. **Extramural Research projects**
6. Completed during 2014-15 :

Title : Design and development of Assistive Device for Museum Access to persons with hearing impairment.

Objectives : To develop an assistive device for use of

museum visitors with hearing impairment

Investigators : Prof. Ajish K Abraham Mr. N. Manohar

Funding Source : AIISH Research Fund

Amount : 5,68,000

1. New research projects initiated during 2014-15

Title : Computerized intervention module &

School readiness test for pre-schoolers.

Objectives : To develop a system with the latest technology using Touch Screen (Tablet) with Android applications designed for pre schoolers to enable them to understand arithmetic concepts in a playful mode.

Investigators : Mrs. Renuka C & Mr. Manohar N

& Co-investigators : Mrs. Swapna

Funding Source : AIISH Research Fund

Amount : 2,75,000

1. On-going Research Projects

Title : Development of online system for hearing screening

Objectives : To design & develop an online system for hearing screening in

rural areas

Investigators : Prof. Ajish K Abraham

Ms. Chandni Jain

Funding Source : AIISH Research Fund

Grant Amount : 6,56,000

**B. Postgraduate Research Completed**

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

|  |  |  |
| --- | --- | --- |
| Title | Objectives | Guide & Investigator(s) |
| Baby cry monitor for impaired parents | To develop baby cry monitor for impaired parents | Mr. S.R. Srinivasa (Guide)  Ms. Kavya N  Ms. Kudapa Nagadevi  Ms. Kavya B.R  Ms. Shivani Rawat |
| Electroacoustic evaluation of hearing aids | To develop a PC based system for Electroacoustic evaluation of hearing aids | Mr. S.R. Srinivasa (Guide)  Ms. Swathi B.S  Ms. Varsha S Kumar  Ms. Fahra Kauser |

**(ii) Project work of M.Sc / M.Tech. students**

|  |  |  |
| --- | --- | --- |
| Title | Objectives | Guide & Investigator(s) |
| Acoustic analysis of output of a digital hearing aid | To find out the deviation in speech parameters when the speech signal is processed through hearing aid | Prof. Ajish K. Abraham (Guide)  Ms. Vidhya Bhat |
| Matlab based spectral tilt measurement system | To develop a Matlab based spectral tilt measurement system | Prof. Ajish K. Abraham (Guide)  Ms. Nandushree  Ms. Nagashree |

**C. Postgraduate Research Completed**

**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 –**
2. Prof. Ajish K Abraham presented a paper titled “Assistive Technology to override poor acoustics for Museum visitors with hearing impairment “ at the National Symposium on Acoustics – NSA 2014 on 13th November, 2014 at AIISH, Mysore
3. Prof. Ajish K Abraham served as a resource person and delivered the keynote address on “ Enhancement in the qualities of life through the use of wireless technologies ” at the one day state level seminar on “Wireless Technology Systems, Applications & Perspectives on 22.04.14 at MMK & SDM Mahila Mahavidhyalaya, Mysore
4. Mrs. Kalai Selvi V.T presented a paper titled “Long Term Evolution (LTE): A Review” at one day state level seminar on “Wireless Technology Systems, Applications & Perspectives on 22.04.14 at MMK & SDM Mahila Mahavidhyalaya, Mysore
5. Prof. Ajish K Abraham delivered an invited talk at the faculty development program on “Advances in Bio-Medical instrumentation for quality healthcare” on 26th July 2014 at UBDT college, Davanagere.
6. Mrs. Renuka C presented a paper titled “ Bilingual Lexicon for children with hearing impairment: Boon with Android application” on 7th November 2014 at 7th National Women’s Science Congress, Rashtriya Mahila Vijnana Sammelana, Vijapur
7. Prof. Ajish K Abraham delivered a lecture in the workshop titled “Audiometric Calibration & Noise measurements” on 13th January 2015 at Dr. M.V. Shetty College of Speech and Hearing, Mangalore.
8. **Research Papers Published -**
9. Papers Published in National /International Journals :

Ajish K Abraham and Surya D (2013) “A new algorithm for frequency transposing in digital hearing aids” Journal of AIISH, Vol. 32.

1. Papers Published in National/International Conference/Seminar Proceedings

1. Ajish K Abraham and N Manohar (2014). Assistive Technology to override poor acoustics for Museum visitors with hearing impairment *Proceedings of the National Symposium, NSA 2014*, 12-14, November 2014,AIISH, Mysore.
2. Books published : Nil
3. Book chapters published : Ajish K Abraham. Technology of Cochlear Implants: An overview, ISHA monograph: The Cochlear Implant – An Overview
4. Books in press : Nil
5. Books/ Manuals/Seminar proceeding edited : Nil
6. Journal Editorship : : Nil
7. Scholarly reviewing activities : Ajish K Abraham reviewed one Journal article (JAIISH , Vol.33), one ARF project report , one M. Tech project report (MIT, Manipal), and two B. Tech project reports (VTU, Belagaum)
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. Psychological Evaluation : Nil
6. Counselling and Guidance : Nil
7. Ear Moulds : Nil
8. Hearing Aid Issue and Electro-Acoustic Evaluation

(ADIP Scheme, Ministry of Social justice) : a. At AIISH – 3314 hearing aids

b. At camps – 831 hearing aids

c. At outreach centres of Akkihebbal, Hullahalli & Gumbahalli – 141 hearing aids

1. AIISH Hearing Aid Dispensing Scheme :1831 hearing aids

B) Specialized Clinical Services of Departments : Nil

C) Clinical Support Services to patients and Family : Issue of hearing aid spares

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| --- | --- | --- |
| **Sl.**  **No** | **Hearing aid Spares** | **Total no. of spares issued** |
| 1 | 13 size cells | 12558 |
| 2 | 675 size cells | 14047 |
| 3 | 312 size cells | 3201 |
| 4 | 10 size cells | 661 |
| 5 | 2 pin S cord | 100 |
| 6 | 2 pin V cord | 55 |
| 7 | Battery Door | 10 |
| 8 | Ear hook | 26 |
| 9 | Body case | 12 |
| 10 | Wind weather protector | 3 |

D) Clinical electronic services :

i) Electro-acoustic Evaluation - 50 hearing aids

ii) Hearing Aid Dispensing – 1. 4286 hearing aids under ADIP scheme

2. 1831 hearing aids under AIISH scheme

iii) Repair of Hearing Aids – Total of 1315 hearing aids

1. Body worn hearing aids – 577
2. BTE Hearing aids – 738
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

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| --- | --- | --- | --- |
| **Sl. No.** | **Date** | **Venue of camp** | **No. of hearing aids distributed** |
| 1 | 26.06.2014 | Hospete | 193 |
| 2 | 27.06.2014 | Mysore | 27 |
| 3 | 21.07.2014 | Hospete | 16 |
| 4 | 20.12.2014 | Calicut | 126 |
| 5 | 28.12.2015 | Vadodara | 384 |
| 6 | 26.03.2015 | Udupi | 85 |
|  | **TOTAL** | | **831** |

1. Orientation Programs : Nil

E) Public Lecture Series : Nil

1. **TECHNOLOGICAL CONSULTANCY SERVICES**
2. Acoustic consultancy :
3. Noise measurement of Patient Monitoring System received from M/s. Skanray Systems Pvt Ltd, Mysore .
4. Electro acoustic measurement of 4 Nos. Of BTE hearing aids received form Alps International Pvt Ltd, New Delhi
5. Testing of 3 nos. Of Speaker module received from L & T Pvt Ltd., Mysore
6. Electro acoustic measurement of 28 nos. of BTE hearing aids received from State Commissioner for Differently Abled, Chennai.
7. Testing of Audiometric room ( Noise measurement) at Baptist Hospital, Devanahalli, Bangalore.
8. Electro acoustic measurement of 6 nos. of Body worn hearing aids received from State Commissioner for Differently Abled, Chennai.
9. Calibration of Audiometer, Make Inventis from Pika Medicals Pvt Ltd, Bangalore.
10. Electro acoustic measurement of 7 nos. of BTE hearing aids received from Arphi Electronics Pvt Ltd. Mumbai
11. Electro acoustic measurement of 5 nos. of BTE hearing aids and 2 body worn hearing aids received from CDAC, Thiruvanathapuram
12. Noise measurement of Patient Monitoring System received from M/s. Skanray Systems Pvt Ltd, Mysore
13. Acoustic measurement and analysis of tones generated by Patient Monitoring System received from M/s. Skanray Systems Pvt Ltd, Mysore
14. **CENTRAL FACILITIES**
15. Library and Information Services
16. Public Information Activities : An article titled “Career

in hearing aid technology” published by Mr.Manohar N in Employment News paper dated 30th May – 6th June 2015.

1. Material Development
2. **AWARDS AND HONORS RECEIVED BY :**

**FACULTY AND STAFF**

1. Prof. Ajish K Abraham received AIISHian of the year award on Annual Day 2014.
2. Prof. Ajish K Abraham & Mr. Manohar N received the Best paper award in National Symposium on Acoustics 2014 held at Mysuru from 12th to 14th November, 2014.
3. Mrs. Renuka C received the Best paper award in 7th National Women’s Science Congress, Rashtriya Mahila Vijnana Sammelana, held at Vijapur from 7th to 9th November 2014.
4. **EXTRA CURRICULAR ACTIVITIES**
5. AIISH GYMKHANA

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| **Sl. No.** | **Staff** | **Responsibility held** |
| 1 | Prof. Ajish K Abraham | 1. Vice President – AIISH Gymkhana |
| 2 | Mr. Manohar N | 1. Chairperson - Transportation committee, Open Day 2014 2. Chairperson, Photography committee, Annual Day |
| 3 | Mr. S.R.Srinivasa | 1. Member - Exhibition committee, Open Day 2014 |
| 4 | Mr. S.S. Purushothama | 1. Member - Transportation committee, Open Day 2014 2. Member - Stage Arrangement, Annual Day |
| 5 | Mrs. Kalai Selvi V.T | 1. Member, Stage Arrangement, Annual Day 2. Member, Stage Arrangement, Open Day |
| 6 | Mr. Ravishankar M.S | 1. Member - Stage Arrangement, Annual Day 2014 2. Member - Exhibition committee, Open   Day 2014 |
| 7 | Mr. Sadanandamurthy | 1. Member - Catering committee, Annual Day |
| 8 | Mr. Shivakumar | 1. Member - Stage Arrangement, Annual Day 2. Member - Stage Arrangement, Open day 3. AIISH Gymkhana – Sports Secretary 4. Member Secretary – Central Govt Employees Sports Competition |
| 9 | Mrs. Lalitha S | 1. Secretarial assistance – Annual Day, Open Day, AIISH AAWAAZ 2015 |
| 10 | Mrs. Renuka | 1. Member - Stage Arrangement, Annual Day 2. Chairperson - Stage Arrangement, AIISH AAWAAZ 2015 |
| 11 | Mr. Raghavendra G N | 1. Member - Exhibition committee, Open Day 2014 |

1. NSS
2. Others

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| **Sl. No.** | **Staff** | **Responsibility held** |
| 1 | Prof. Ajish K Abraham | Convener - NSA 2014 |
| 2 | Mr. Manohar N | Chairperson - Transportation committee, NSA 2014 |
| 3 | Mrs. Kalai Selvi V.T | Member, Stage Committee, NSA 2014 |
| 4 | Mr. Ravishankar M.S | Member- Accommodation Committee, NSA 2014 |
| 5 | Mr. Shivakumar | Member - Cultural committee, NSA 2014 |
| 6 | Mrs. Lalitha S | Secretarial assistance – NSA 2014, |
| 7 | Mrs. Renuka | Member - Stage Arrangement, NSA 2014 |
| 8 | Mr. Raghavendra G N | Member – Transport Committee – NSA  2014 |

**MAJOR EVENTS OF THE YEAR :**

1. Design & Implementation of Audio visual system for Seminar Hall, Knowledge Park
2. Design & Implementation of Infrastructure for Smart Classrooms, Knowledge Park
3. Computer & Telephone network for New quarters, Knowledge park and Jayachamarajendra block
4. 3rd Phase of upgradation of computer network from 10/100 to 10/100/1000 Mbps
5. New Electrical Substation with 1000 kVA capacity
6. **EMINENT VISITORS :**  1. Dr. Gautam Biswas

Director,

IIT Guwahati.

2. Dr.S.D. Dandapath,

Dean,

IIT Guwahati.

3. Dr. S.R.M. Prasanna

Professor,

IIT Guwahati.

4. Mrs. Rajashree

Scientisit E, Language Technology Group, CDAC,

Thiruvanathapuram

5. Dr. V. Rajendran, President,

Acoustical Society of India

6. Dr. S.K. Shivakumar,

Director, ISRO, Bangalore

1. **ANY OTHER :** Nil