SREE VIDYANIKETHAN ENGINEERING COLLEGE
(Autonomous)
Sree Sainath Nagar, Tirupati 517102.

Department of Electronics and Instrumentation Engineering

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Report on the Two Day Seminar on "Modalities and Analysis of Medical Images"

Sponsored by

Science and Engineering Research Board (SERB)

Organized by

Department of Electronics and Instrumentation Engineering,

Sree Vidyanikethan Engineering College, Tirupati

The department of EIE organized a Two Day Seminar on **"Modalities and Analysis of Medical Images"** on 22 & 23 February, 2018.

The seminar was sponsored by Science and Engineering Research Board (SERB). The program received an overwhelming response with 60 participants included eminent academicians and researchers.

Context of the Seminar

- The main objective of the seminar is to

- Introduce participants about the anatomy and physiology concepts of human body.
  Help to enhance research competence of faculty in the area of Biomedical Signal Analysis.

- Provides an exposure to practical problems and their solutions in Biomedical Signal analysis and challenges of the biomedical engineering field.

- Illustrates the processing techniques and their application in the analysis of bioelectrical signals.

- Provides orientation to research in different domains like medical instrumentation, biomedical signal processing, data generation and acquisition, processing and quality. The scope of the program provides practical experience in processing physiological data, with examples from speech processing, and medical imaging.

- The participants can know the different imaging parameter for each system, how to control them.

- Help the participants to interact with experts in this field and thereby strengthen their academic and research activities.
- The participants possess the mathematical, scientific and computational skills necessary to analyze biomedical signals by using different instruments.

Inaugural Session

The esteemed personalities present on the inauguration of the programme:

- **Dr. C.Subhas**, Dean, Academics, SVEC, Tirupati
- **Dr. M.Saravanan**, Professor& Head, Department of EIE, SVEC, Tirupati.
- **Dr. N.Gireesh,** Professor, Department of EIE, SVEC, Tirupati.

The programme was inaugurated in the morning at 10.00 in E-Class room. The seminar started with a welcome address by Dr. M.Saravanan, Professor& Head who is Convener of the seminar. He briefly introduced the theme of the seminar and emphasized the role of Biomedical Signal analysis and challenges of the biomedical engineering field. He also appreciated the efforts of Instrumentation cluster and their appropriateness organizing the seminar theme. Dr. C.Subhas Dean, Academics, SVEC discussed about the importance of health and various issues associated with health. He also discussed this seminar presents the signal processing techniques with particular emphasis on problems in biomedical research and clinical medicine. Dr. N.Gireesh, Professor, Department of EIE, discussed that this program aims at creating a platform for the academicians to interact with each other and to create a sound awareness on the various trends in biosignal processing techniques. He also addressed the participants about the mathematical, scientific and computational skills necessary to analyze biomedical signals by using different instruments. The inauguration program ended with vote of thanks.

Dignitaries on the dais during the inaugural session.

Addressing of Chief Guest Dr. C.Subhas during inaugural function.

Welcoming address of the participants by the **convener** at inaugural function

Cross section of participants during inaugural function.

Day-1: 22/02/18

Session I: Introduction to Biomedical Instrumentation, Bioelectrical Signals and Measuring Instruments

Dr. N.Gireesh Professor of EIE department discussed the very basics of biomedical, objectives and specifications of biomedical instruments. He also discussed various physiological systems that are present in human body. He also presented biomedical signals and their electrical activity by using different types of electrodes. He also shared his views on medical instruments like recording, monitoring, Measuring, Therapeutic, Medical Imaging instruments and their functionality.
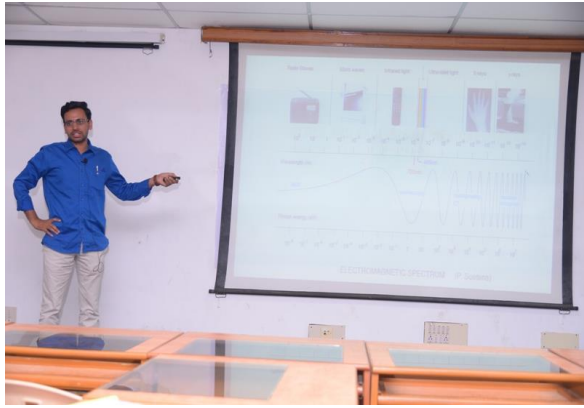

Dr. **Dr.N.Gireesh** delivering a lecture

Day-1: 22/02/18

Session 2: Introduction to Image Processing & Medical Imaging Modalities

Dr. S.Subrahmanyam Gorthi, from IIT, Tirupati, discussed about medical imaging and analysis of medical images either manual or automated. He also discussed about different imaging modalities in clinical pint of view and how they can be analysed. He also discussed different research aspects of images processing in medical field.

Dr. S.Subrahmanyam Gorthi delivering a lecture

Day-1: 22/02/18

Session 3:

Dr Chaitanya Deep, MD (RD), SVIMS, Tirupati, discussed the Process of Image Production and Interventional Radiology. He also suggested the participants to do future research in CT thermometry, novel reconstruction algorithms and hybrid imaging like PET/MRI.

Dr. Chaitanya Deep DSJ delivering a lecture

Cross section of **participants** while delivering lecture

Convener felicitating the resource person

Day-2: 23/02/18

Session 4: pattern Classification of Leukemia Cell lines in Imaging Flow Cytometry

Dr. Rama Krishna Sai S Gorthi, IIT, Tirupati, discussed introduction to Cytopathology, Microfluidics Imaging Flow Cytometry . He also discussed about the different modalities of feature extraction and pattern classification of the cells and challenges in imaging flow cytometry.

Dr. Rama Krishna Sai S Gorthi addressing the audience

Day-2: 23/02/18

Session 5: Role of image-processing in medical diagnosis & treatment-planning

Dr. S.Subrahmanyam Gorthi, from IIT, Tirupat, in his presentation, he demonstrated the role of medical image processing in medical field with a case study and discussed about different fusion methods for medical image analysis and concluded that recent work gave more accurate segmentations than the existing work. He also discussed about the contributions in clinical translational research.

Dr. S.Subrahmanyam Gorthi delivering a lecture

Convener felicitating the resource person

Day-2: 23/02/18

Session 5: Recent trends in medical image analysis and pattern classification

Dr. Rama Krishna Sai S Gorthi, IIT, Tirupati, discussed about automated microscopy, different classifier used and future scope of the medical image analysis and watershed segmentation. In this session participants were learned about NN tool, how to create a network, train a network, test a network and also using of NN tool.

Dr. Rama Krishna Sai S Gorthi addressing the audience

Convener felicitating the resource person

Valedictory session:

N.P.Dharani, Assistant Professor, Co-convener of the seminar concluded the valuable information shared by the resource persons all over the sessions.

Coordinators of the seminar ended the seminar with a vote of thanks.

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