

# Preface

The Institution of Engineers (India) came up with the idea of All India Seminar on Biomedical Engineering 2012 (AISOBE 2012) to be held on 3rd and 4th of November 2012. AISOBE 2012 is an attempt to bring forward the latest research in the fields of bio-medical engineering, information technology, and soft computing. Our vision behind organizing this seminar was to provide a platform to bring researchers and practitioners together including engineers, biologists, health professionals and informatics/computer scientists, to create an integrated environment for personnel interest in both theoretical advances and applications of information systems, artificial intelligence, signal processing, electronics and other engineering tools in knowledge areas related to biology and medicine.

Biomedical engineering is the application of engineering principles and design concepts to medicine and biology. This field seeks to close the gap between engineering and medicine: it combines the design and problem-solving skills of engineering with medical and biological sciences to improve healthcare diagnosis, monitoring and therapy.

Thanks to our authors who had submitted papers related to the fields of medicine, computing and image processing all complying with the theme of the seminar.

We were obliged with the presence of renowned medical practitioners who enlightened us with their research in fields like treatment of arachnoid cyst, stereolithography and health monitoring.

We had topics in the field of nanoparticles and nanotechnology and its use in medicine. We had papers about development of medicinal drugs for cancer treatment.

Some papers depicted the use of image processing in the field of biomedical engineering, covering topics like analysis of CT images of bones, analysis of EEG signals, and enhancement of medical image security using digital watermarking, registration, de-noising and compression of medical images.

Numerous papers were related to soft computing, which provided us information about how computing can take advantages from biology by creating computer

systems based on human immune system, human cells, etc. Some interesting researches related to genetic algorithm and neural networks were also presented.

We had research papers about wireless sensor networks, MANETs and VANETs, and how these technologies can help in the field of medicine. Some papers were about software used in hospitals and in the field of medicine.

We also enjoyed the presence of few inter-disciplinary research topics from the field of information technology, which are providing their services to the fields of medicine and engineering.

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